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DEFENCE ACQUISITIONS - UNPACKING THE PACKAGE DEALS

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Occasional Paper No 29 - March 1998

INTRODUCTION

With the worst pains of the transformation behind it, the South African Department of Defence is now struggling to re-focus on its primary role and functions and the equipment to support these. This has generated an unprecedented public debate on the foreign procurement of defence equipment.

Large procurement programmes take a number of years from the identification of the user requirement to actual delivery, since substantial effort is required to negotiate and agree upon the exact detail of the end-user need, and for management of the procurement process. Typically, the more complex the system, the longer the delivery time. Therefore one could expect up to six years for delivery in the case of a fighter aircraft less with other systems. Lead times are thus important considerations in the timing of defence acquisition programmes.

Within the Department of Defence (DoD) the approval structure for acquisitions in South Africa consists of three levels:[1]

- The Armament Acquisition Council (AAC) is chaired by the Minister of Defence and is the level at which the final selection of the equipment and supplier, as well as monetary commitments for strategically important and large projects is undertaken. The AAC identifies major procurement programmes and presents them to Cabinet and Parliament for approval.
- The second level of approval for acquisition is the Armament Acquisition Steering Board (AASB) chaired by the Secretary for Defence. This board approves smaller projects and screens the larger projects.
- The Armament Acquisition Control Board (AACB) is chaired by the Chief of Acquisition within the Defence Secretariat and screens all projects and other routine programmes in terms of requirements and amendments.

In the case of major procurement decisions, the final decision is taken within Cabinet and is essentially a political and economic, rather than a technical decision.

This paper provides an interpretation of the major overseas defence procurement packages presently under public discussion which will hopefully be accessible to the lay person. Some of the items such as the procurement of corvettes have been in the public domain for a considerable time and decisions on the first of these items are expected by mid-year or shortly thereafter.

The first section of this paper situates the procurement items within the context of the force design of the South African National Defence Force (SANDF) and the budgetary constraints which the DoD is facing. The next section provides an overview of the various overseas equipment offers under consideration, followed by a brief discussion on the structure of the various offers that have been solicited. The final sections deal in greater detail with the various items under discussion, namely ships and submarines for the SA Navy, tanks for the SA Army, and aircraft and helicopters for the SA Air Force.

THE FORCE DESIGN OF THE SANDF VS THE DoD BUDGET

The key force design chapters of the Defence Review were adopted by Cabinet on 18 June 1997 when it approved the `Growth-core force design'. The essential characteristics of this option are that of a peace-time all-volunteer force of some 22 000 combat troops, 28 000 support troops and 20 000 civilians, supported by 69 800 part-time force members.[2] The SA Army, the largest of the Arms of Service, would be composed of one mobile division (consisting of three brigades), territorial forces and a special forces brigade.

The most important equipment changes that flow from the Defence Review are reflected in Table 1.

The approval of the force design by Cabinet and the parliamentary defence committee, however, does not constitute blanket or automatic approval for replacement and acquisition projects. Individual evaluations and changes in requirements may and will occur. In particular, decisions to replace ageing equipment are clearly based on cost considerations. At best the approval of the force design by Cabinet constitutes approval in principal for the maintenance of the specified capabilities at an approximate level or for the consideration of acquisition programmes.

Planning and practice are clearly at odds with one another since the budget and budget prospects of the DoD are insufficient to support the approved force design. According to the Defence Review, the `sharp-end' of the SANDF, of which the major equipment components are listed in Table 1, would cost about R5,1 billion annually to sustain. Within a R9,2 billion budget this leaves about R4 billion for all support services. International comparative figures would indicate that, in actual fact, nearly double this amount would be required. In other words, the Defence Review force design cost is closer to a sustainable R13 billion as opposed to the R9,2 billion. (Unconfirmed reports have it that ARMSCOR costed the Defence Review at R14,5 billion.)

Table 1:
Equipment Implications of the Defence Review

Equipment	Existing	Planned
Main battle tanks (presently Olifant Mk 1A/1B)	224	154
Armoured cars (presently Eland Mk. V11)	235	146
Armoured cars (Rooikat)	176	242
Anti-armour missile systems (ZT-3)	53	53
G5 towed artillery systems	72	45
G6 self-propelled artillery systems	43	43
Bateleur 127 mm multiple rocket launchers	25	25
Infantry combat vehicles (presently Ratel)	1 243	1 214
Mine-protected troop carriers	3 227	4 304
Combat support helicopters (Rooivalk)	0	12
Advanced light or medium fighters (Presently F1AZ and Cheetah)		
Jet training aircraft (presently Impala)	51	32
Turboprop trainers (Pilatus PC-7)	65	16
Light recce aircraft (presently Cessna 185, PC6)	60	60
Medium transport helicopters (Oryx)	25	24
Light utility helicopters (presently Alouette 111, BK 117)	56	56
Electronic surveillance planes (Boeing 707)	76	60
Light transport aircraft (Caravan & Kingair)	4	4
Medium transport aircraft (DC-3 and Casa 212)	16	12
Heavy transport aircraft (C130)	37	20
Medium-range maritime patrol aircraft (presently converted Dakotas)	11	12
VIP transport aircraft	6	16
Medium signals intelligence aircraft (Dakota)	10	9
Corvettes	2	2
Corvette-borne helicopters	0	4

Submarines	0	5
In-shore patrol boats	3	4
Harbour patrol boats	0	2
Strike craft	28	39
Minesweepers/minehunters	9	6
Combat support ships	8	8
	2	1

The recently released *Medium Term Expenditure Framework of the Government* offers little relief for the DoD. This three-year budget plan, which was released during December 1997, projected that defence spending would decline from 7,4 per cent of non-interest spending in 1997/98 to 6,8 per cent in 2000/01 or remain pegged at 1,6 per cent of gross domestic product.[3] The result will inevitably be that the DoD will have to reconsider the Defence Review and further slash costs dramatically despite its best efforts to cut operating costs.

During 1997, for example, with only two weeks to go before the presentation of the annual defence budget to Parliament, the Minister of Finance carved an additional R700 million from a defence budget that had already been reduced by a similar amount from the previous year.[4] During the subsequent defence budget vote in the National Assembly, the Minister of Defence spelt out the situation that the Department faced in no uncertain terms: "*Our budget has been cut by 59% since 1989, in real terms. This is creating great difficulties. The fact is, we are unable to sustain an adequate Defence programme. Our police support and regional roles will be adversely affected. And there is no provision for new capital equipment, such as, ships or aeroplanes. Important projects, like the Rooivalk, may fall through. Equipment maintenance, and our spares inventory are threatened. Cancellation of programmes will cost the Defence Industry dearly ... The Defence programme has become grossly distorted. 48% of resources are absorbed by personnel expenditure, 37% by operating costs. This leaves a meagre 15% for main equipment renewal ... If we do not commence the phased replacement of obsolete equipment now, all our equipment requirements will peak simultaneously, around the year 2005.*"[5]

Indications for 1998 and beyond are similarly gloomy the SANDF is already facing imminent block obsolescence of much of its main equipment. For example, by 1999, or soon thereafter, the SANDF has to fund the acquisition of four corvettes for the Navy, replace the Impala aircraft, replace some 4 304 mine protected troop carriers and purchase or upgrade three submarines.[6] Over the previous decades, the SA Navy has already lost its anti-submarine capability, its ability to operate surface combat ships beyond the limited capabilities offered by the strike craft, and the ability to operate maritime helicopters off combat ships.

The extent to which the Defence Budget has declined, is perhaps not appreciated. The allocation for 1997/8 was R9,4 billion, down from some R17 billion (in 1997 rand) from 1989. Of this amount only R1,1 billion is to be spent on capital procurement, compared to the 44 per cent or R7,5 billion which was being spent annually during 1989. In fact, the massive amounts of money required for integration, voluntary retrenchment packages and operating costs leave the DoD with very little variable costs. Fixed costs have remained high and the only avenue has been slashing capital expenses. The result has been the virtual decimation of the local defence industry and little more than crisis acquisition. By 1998/9, the defence budget will have even less room for the acquisition requirements implicit in the Defence Review.

By the end of 1997, the SA Air Force had suspended all flights except emergency missions and the SA Army had effectively stopped training[7] despite the fact that the SANDF was spending an inordinately large portion of its budget on operating expenses. The DoD had run out of money in response to the massive and unexpected budget cuts that it had suffered and was facing over-expenditure of some R400 million by the end of the 1997/8 budget year.[8] There can be little doubt that the Minister will attempt to cut back on the support that the SANDF provides to the police and other departments in the 1998/9 budget. With elections looming and crime a national priority, he must have little chance of success. In the process, capital expenditure will remain under pressure and the prospects for early movement on major capital acquisition programmes funded out of the defence budget must be restricted.

THE OVERSEAS ACQUISITION OFFERS

The various overseas acquisition offers that are presently under discussion have their origins in an earlier attempt by the SA Navy to acquire corvettes. The government subsequently decided to defer any decision until after the finalisation of the Defence Review which occurred last year. Since the Defence Review also sets out the priorities for defence acquisition programmes, foreign suppliers started positioning themselves for a potentially lucrative new market. In fact, ARMSCOR was somewhat stunned by the attention that its procurement intentions had solicited.

In the months that followed, first the British, then the Germans and subsequently the French offered to meet virtually all the foreign procurement needs of the SANDF through so-called `strategic alliances'. This would entail a government-to-government agreement in terms of which a country such as Britain would meet South Africa's larger procurement needs over a period of up to twenty years. While assured of supply, such an arrangement would have tied South Africa to a single supplier who would gain tremendous strategic and economic leverage in the process. In effect, by late 1997 the country-to-country strategic alliances had been unbundled and had reverted to an effective menu of items from which South Africa could choose. The menu itself had also been reduced to a list of select items which included combat aircraft, tanks, corvettes, submarines and helicopters.[9]

In the face of the plethora of offers being placed on the table by various countries and consortia, South Africa decided to reappraise its tendering processes in this instance to manage the various offers in an equitable manner. The result was that the South African Ministry of Defence issued a Request for Information (RFI) during September 1997 with a deadline of 31 October 1997. The focus of this RFI was primarily on technical requirements, i.e. those relating to the equipment itself. Financially, the Department requested that offers should allow for a two and a half year grace period before repayments commence and that the total Industrial Participation (IP) component should comply with the legislated IP requirements composed of a defence component equal to fifty per cent and a non-defence component equal to thirty per cent of foreign value.

The RFI was sent to eleven countries Britain, Germany, France, Sweden, Brazil, Italy, Canada, the Czech Republic, Spain, Russia and Denmark. Eventually nine countries responded to the RFI and seven were included in the `shortlist' which was approved by the Council on Defence (COD) and the AAC during December 1997. This list is therefore the result of a technical appraisal which was done jointly by the end-user and ARMSCOR. The AACB then took the recommendations to the AAC and the COD. Cabinet was apparently briefed on the shortlist during February 1998.

Given the size and implications of the various items under consideration, it is at Cabinet level where approval will occur, notably through the involvement of the ministers of Finance, Trade and Industry, Defence, Public Enterprises and the Deputy President. Given the requirement for parliamentary approval, the standing committee on defence has been kept informed of developments.

The most urgent overseas replacement programmes with the associated `guesstimates' of costs are summarised in Table 2 (this excludes domestic procurement programmes such as anti-aircraft defence systems, infantry combat vehicle replacement, etc.). Clearly, the estimated amounts differ between the various offers and the amounts indicated in the table are a mere guide.

Table 2:
Overseas acquisition shortlist cost estimates

Description	Original Qty	Illustrative total cost	Remarks
Corvettes	4	R4 billion	Includes combat suites which will be procured domestically for about R1,4 billion

Maritime helicopter for corvettes	5	R1 billion	
New submarines to replace Daphne	4	R5,5 billion	
Allouette replacement	60	R2 billion	
Advanced light fighter	48	R6-9 billion	
MBT replacement of Olifant	154	R6 billion	
Total cost in 1998 Rand		R25-38 billion	

The various countries and equipment which are now on the shortlist, are listed in Table 3. It also includes the original number of items requested together with an estimate gleaned from various sources regarding the size of any eventual order, should that order be placed during 1998. A press statement released during February by the Ministry of Defence had already quoted a figure of some 108 instead of the original 156 main battle tanks.

Table 3:
Shortlist of foreign suppliers

Item/Country	Original Request	Possible Reduced
Corvette Requirement	4	4
Britain Germany France Spain	GEC F3000 GFC Meko 200/Meko A200 La Fayette Bazan 59B	
Maritime Helicopter for Corvettes	6	4
France/Germany Britain	Eurocopter Cougar GKN Super Lynx	
Submarine Requirement	4	3
Britain Germany France Italy Sweden	second-hand Upholders GSC TR1400 DCN Scorpene S 1600 Kockums T192	
Advanced Light Fighter Aircraft Requirement	48	38
Britain/Sweden Germany France	BAe/SAAF JAS-39 Gripen Eurocopter EC635 Bell 427	
Light Utility Helicopter Requirement	60	48
Italy France/Germany Canada	Augusta 109 Eurocopter EC635 Bell 427	
Main Battle Tank Requirement	154	108
France Britain	LeClerc Challenger 2	

During February 1998, a Request for Final Offer (RFO) was issued to the shortlist of possible suppliers, detailing the product requirements, but aimed more at specifying the IP and financial requirements. The IP requirement was also increased from a total requirement equal to eighty per cent of the foreign purchase value to hundred per cent of that value, with a firm commitment required that repayments should not commence before 2003.

Three months will be allowed for the RFO. The presentation of final proposals is presently planned for May. Given past experience, it would not be surprising if this date slipped. Some announcement on the foreign procurement intentions of the government could therefore be expected by mid-1998 or soon thereafter.

Although this date is close to the 1999 elections, it would probably be fair to state that most of the component items within the acquisition package are supported by all political parties and that opposition would not, therefore, be much of a party-political issue. Opposition from a number of non-government organisations, however, is sure to feature as well as lobbying by church groupings and organisations opposed to South African defence procurement. Much of the original opposition to the procurement may have been undercut by the consultative nature of the Defence Review process.

STRUCTURE OF THE DEAL

Any proposed offer for one or more of the items listed earlier will consist of three components: a project proposal detailing the exact requirements of the equipment in question (the functional and technical evaluation which will be performed by the end-user in conjunction with ARMSCOR), an Industrial Participation (IP) component (presented to a joint Department of Trade and Industry (DTI)/ARMSCOR steering committee), and a financial package.

Payment The Financial Deal

Given the parlous state of the South African defence budget, the South Africans have stipulated that the financial deal for the various components of the package should provide for no repayment before 2003 a grace period of some four years, at the end of which the DoD hopes to reap the fruits of its present restructuring. With a budget pegged at R9,2 billion in 1998 rand the Department is planning to spend, by 2001, thirty per cent on capital expenditure (capex) of which about R400 million would be used for non-weapon systems, leaving about R2,3 billion for the acquisition of weapon systems. Of this amount, roughly R1 billion could be used annually towards the major overseas acquisition items listed earlier, stretched over anything from six to ten years. While a longer repayment period is possible theoretically up to fifteen years such a decision may be too risky for a cabinet committed to fiscal discipline. The great risk here is the stability of exchange rates. With the rand already touching R5 to the dollar, most economists are predicting an exchange rate of R5,20 to the dollar by the end of 1998 a four per cent depreciation. At an average and conservative depreciation rate of five per cent over the longer term, the rand would hover at R7,76 to the dollar by 2006 and R10,91 to the dollar by 2013.[10]

No trading partner is prepared to risk the variances of exchange control variations. Even offers to pay in gold, as made by both Britain and France, are linked to the (declining) gold price. Most of the subsequent offers, however, do include fixed interest rates.

The financial package of the various offers will eventually be evaluated by a joint team composed of ARMSCOR, the Department of Finance and the Reserve Bank.

Industrial Participation

In simple terms, IP simply means that South Africa gets domestic investment in proportion to the Rands spent abroad.

ARMSCOR's involvement in offset agreements dates back to 1988. Since 1 September 1996, however, IP became generally obligatory in South Africa, and ARMSCOR now manages defence-related IP programmes within the ambit of South Africa's national IP policy. This national policy is administered by the DTI and provides for a non-defence IP obligation equal or greater than thirty per cent of the foreign value and a fifty per cent defence IP programme obligation on contracts exceeding US $10 million. The national policy also provides for ARMSCOR to require Defence IP on purchases of between US $2 million and up to US $10 million and to increase the Defence IP obligation above the fifty per cent obligation for purchases equal to or more than US $10 million.[11]

In the case of defence equipment, the IP therefore consists of two parts, divided between the non-defence component, or National IP, and the Defence IP. The National IP is managed by the DTI and applies to all government contracts with an import component value greater than US $10 million. The Defence IP is managed by ARMSCOR and the Ministry of Defence Acquisition Division and applies to defence contracts equal to US $2 million and more. For the foreign acquisition projects under discussion, the RFI has already set a guideline that IP should be hundred per cent or better a guideline formalised in the RFO which increased the National IP component from thirty per cent to fifty per cent.

IP credits are subsequently `earned' by the supplier.[12] A maximum of seven years are allowed for the seller to discharge his obligations from the effective date of the IP Agreement.

The thinking behind Defence IP and National IP differ in a number of important ways. Through the National IP, the DTI is effectively trying to establish new industries which are sustainable beyond the seven years within which the supplier has to earn his credits. ARMSCOR, on the other hand, is essentially interested in maintaining its existing defence industrial capabilities.[13]

As a result, ARMSCOR would accept one-off orders such as the supply of radios as part of Defence IP (and credit the supplier when the order is placed), whereas the DTI would wish for the establishment of a new factory or business which is self-sustaining (and therefore only credit once sales are realised). It is for this reason that ARMSCOR uses an input model to determine IP credits (e.g. it credits the supplier when an order is placed). DTI uses an output model to determine IP credits which measures the extent to which a company/venture produces revenue (e.g. it credits the manufacturer when it has sold its products).

Defence IP is further composed of a direct and an indirect component. The former implies direct IP in the product concerned and indirect IP relates to other defence-related areas. The relationship between the two is expressed as a preferred and not a firm requirement by ARMSCOR.

The following sections briefly comment on the various larger foreign procurement items upon which the Cabinet will be deciding.

CORVETTES AND MARITIME HELICOPTERS FOR THE SA NAVY

The SA Navy is in dire straits with its corvette acquisition programme. This is probably the oldest and least successful acquisition programme of the SANDF dating back to the mid-eighties. The SA Navy has no ships in the patrol corvette/frigate class, having lost its destroyers and frigates during the seventies and eighties. The most recent effort resulted in tenders being adjudicated for the supply of four corvettes during 1995, but stalled in the middle of that year pending the conclusion of the White Paper on Defence and the Defence Review. At that stage, the SA Navy had shortlisted bids from the Spanish Bazan and British Yarrow yards over rival submissions from Danyard, DCN International, and Blohm and Voss. By 1996, the SA Navy had also lost the funding which had been set aside for the corvettes pending finalisation of the Defence Review.

The Defence Review would eventually state that, "*[f]rigates or Corvettes are the workhorses of any navy. They are capable of countering aircraft, submarines and other surface vehicles and can conduct sustained operations in sea conditions such as those off the South African coast. As such they will patrol to the outer layer of about 200 nautical miles (370 km) from the coast. Such ships, as a rule, carry helicopters which significantly improve and extend their defence capabilities*."[14]

The SA Navy requires four corvettes a number which can hardly be reduced, given the existence of six major commercial ports and two main naval bases. The South African maritime defence concept provides for two critical areas, namely Durban and Richard's Bay on the east coast, and Cape Town, Saldanha Bay and Simon's Town on the west coast.[15]

In response to the RFI, Britain's GEC F3000, Germany's GFC Meko 200/Meko A200, France's La Fayette and Spain's Bazan 59B have been shortlisted.

Given the funding constraints, as well as the low conventional threat scenario, the ultra-modern French La Fayette must stand little chance, despite the La Fayette being the "*world's first operational warship designed for stealth from keel to mast*."[16]

Little public information is available on the various IP offers, although the Spanish IP offer is known to include an offer to buy about forty Rooivalk attack helicopters at a cost of US $358 million (R1,7 billion) as well as socio-economic projects relating to technology transfer, education, fishing, fleet upgrades and development of infrastructure to a total value of about R7 billion.[17]

The maritime helicopters are an integral part of the corvette deal. Given the relatively small size of the corvettes, the weight and compatibility of the helicopter with its ship are critical. Ideally, the SA Navy should have more helicopters than ships, but the ongoing budget cuts may see the requirement for maritime helicopters drop from an initial figure of six to four. Of the two contenders, the British Westland Super Lynx 100 is specifically designed for use as a maritime helicopter, while the Eurocopter Cougar AS 532 is a modified transport helicopter but cheaper and more compatible to the SA Air Force's Oryx fleet. The proposal is for the Cougar to be partly manufactured by Denel Aviation, with integration of local systems.

For the Chief of the SA Navy, submarines and corvettes are "*two sides to the same coin, performing complementary tasks as a deterrent and defensive measure ... Submarines make small navies credible and possible for us to keep our surface fleet relatively small and unsophisticated. If I were to lose my submarine capability, I would be looking at a complete redesign of my force, then I would need 12 corvettes*."[18]

SUBMARINES

Depending upon the mix of systems finally agreed on, the total South African submarine requirement may drop from four to three. The shortlist consists of Britain's second-hand Upholders, Germany's GSC TR1400, France's DCN Scorpene, Italy's S1600 and Sweden's Kockums T192.

Until the lifting of the arms embargo, the SA Navy had been planning to give the ageing Daphne submarines a major life extension overhaul. After the lifting of the embargo, the British offer of second-hand Upholder submarines opened up new possibilities for the SA Navy. It was only at that stage that the submarine replacement programme moved up the priority list.

The central question is whether to buy second-hand or new submarines. The most important unknown variable in this equation is the operating costs of the Upholders, since none are in service elsewhere in the world. The fear is that the life-cycle costs for the Upholders may be relatively high and that this consideration may have featured in Canada's decision not to acquire the Upholders.

The British Government is particularly keen not to allow any further delays, since they are presently contemplating shutting down the Upholder submarine training facility, HMS Dolphin, which will effectively make any subsequent deal on Upholder submarines with South Africa very difficult. Although relatively cheap, the Upholders would still cost roughly R3 billion. The four Upholders would also have to be brought back into commission having been brought into service from 1990 to 1993 before being decom-missioned.

The refitting of the Upholders for South African requirements would not present a major problem apart from the fact that they are too big for the syncro lifts at Simon's Town harbour (at a displacement of 2 455 tons submerged) which would have to be enlarged at an estimated cost of R50 million. The big advantage is that the Upholders could be refurbished and ready within about eight months.

The first German Type 209, in contrast, would only be delivered in 2004. As an interim measure, Germany has offered a joint German/South African Daphne modernisation programme or offered to provide the SA Navy with three former German Navy Type 206As as

interim equipment to keep the submarine flotilla active until the first Type 209 is delivered.

Three out of the four South African Daphne class submarines are already permanently out of the water and, without a major refit, none can return to sea. The remaining submarine is running with an upgraded South African command and control suite, but with a number of problems. To compound matters, the SA Navy is also facing labour unrest in the Simon's Town dockyard. In fact, the country faces a potential three year strategic gap in the acquisition process of the submarines. The choices facing the government are stark:

- update two of the existing four Daphne submarines at a total cost of about R100 million which would keep them operational for about five more years an offer that both the French and Germans have made as an interim measure prior to the sale of newer submarines; or
- do a more comprehensive upgrade for between R200 and R300 million which would stretch their life to 2010 the French offer is to upgrade three Daphnes and give another one `free of charge'; or
- purchase the Upholder class submarines from Britain which has also offered to lease the dockyard (a return to the Simon's Town agreement?) to be run on a commercial basis; or
- purchase the French/Spanish DCN International and Empresa Nacional Bazan Scorpene submarines (recently also purchased by Chile) this deal could include two former French Agosta class submarines and an old Daphne as a spares hulk to carry the SA Navy through until the Scorpene class becomes available; or
- purchase the German 209 class 1400 MOD submarines. Apparently, the Germans have recently proposed to provide a single second-hand 209 submarine at an early stage to ease in the transition to the new submarines; or
- purchase the Swedish Kockums sub-marines. The first three new Type A19 Gotland class submarines were delivered to the Swedish Navy during 1997.

If the Cabinet would decide in favour of the refurbishment of the Daphne submarines and if IP proposals were roughly equal, the French would probably have the advantage in being the original suppliers of the Daphne to the SA Navy.

MAIN BATTLE TANKS

The Defence Review indicates the replacement of the present inventory of 224 Olifant Mk1A/1B tanks by 154 new-generation tanks from 2009 but this number has already been reduced in the RFO to 108 (94 tanks, eight armoured recovery vehicles and four bridge laying tanks). In the absence of a clear conventional threat, the tank acquisition programme, in fact, may struggle to make it through Cabinet.

The British offer is for the development of a new export version of the Challenger 2 tank to be jointly developed with South Africa. After some delays, the Vickers Defence Systems Challenger 2 successfully passed its first series of additional reliability tests during 1996 prior to formal entry into service with the British Army which had ordered 386 of the tanks. The French Giat Industries Le Clerc is the first Western MBT to be deployed with an automatic loader, and a crew of only three. Apart from the Le Clerc's bustle mounted automatic loader, the Le Clerc and the Challenger have computerised fire control systems, stabilised day/night sights for the commander and gunner, and, in the export version of the Le Clerc, a battlefield management system. The United Arab Emirates was the first country to place an order for 436 Le Clerc tanks.

Any decision on a replacement for the Olifant may be influenced by developments regarding local manufacturer Reunert which is facing severe problems. Reunert is the largest South African arms manufacturer after Denel and has already had to retrench 1 300 staff members during 1997 following a sharp drop in profits.[19] Orders for the Rooikat armoured car for the SA Army end this year and, in the absence of foreign orders, Reunert needs an urgent lifeline if it is to survive. Since Reunert had earlier developed a very promising tank technology demonstrator, the MBT programme could readily involve substantial domestic industrial participation possibly utilising some of the highly respected German subsystems used in the Leopard 2 MBT.[20]

AIRCRAFT ACQUISITIONS

The aircraft acquisition programme holds particular challenges. The main problem here is the Impala trainer and ground attack aircraft which needs urgent replacement more urgent than the Cheetah.

The shortlist, consisting of Britain/Sweden which have offered the BAe/SAAB JAS-39 Gripen, Germany which has offered the DASA AT2000 and France with the Mirage 2000-5, represents very different aircraft for different uses.

Traditionally, South Africa had a three-tier pilot training programme with pupils progressing from the turboprop Pilatus PC-7 Mk II to the Impala to the Cheetah. The Pilatus aircraft are new and the Cheetah still have an operational life until 2012 by which stage the SA Air Force will require, by present planning, 38 advanced light fighters. In desperation at the budget cuts, the SA Air Force is considering a move to a two-tier training system. This would imply that hard points for weapons training would be fitted to the PC-7s (removed, by prior agreement, by the Swiss) or the purchase of additional PC-7s with hard points, and that pilots would progress directly from the Pilatus to front line combat aircraft (presently the Cheetah). But this seems risky. The United States are using the Pilatus in this role but have the much improved PC-9 Plus, with better performance, hard points for weapons, and which can be used both for intermediate fighter pilot training and in a ground support role. The PC-9 Plus is in the same class as the Impala and provides a good stepping stone to advanced fighter pilot training.

As a result, the SA Air Force will either urgently have to acquire twenty lead-in fighter trainers (as Impala replacements) or outsource that component of its pilot training as the British are in fact doing with Canada. The latter option would allow the DoD to harness all its resources towards the advanced light fighter replacement programme which really only needs to commence early in the next century. But new generation fighter aircraft are prohibitively expensive. Whereas a second-hand Lockheed Martin F16A or B can be picked up at about US $4 million and upgraded to C status for relatively limited costs, a new F16 costs US $20 million, a Mirage 2000 about US $24 million, an AT2000 about US $16 million, a Gripen about US $30 million. While not on the list, the F-16 continues to be the world's most successful fighter aircraft with more than 3 650 delivered to nineteen air forces. However much the DoD may chaff at purchasing American equipment, second-hand F-16s with their low running costs may eventually be the only affordable fighter, should no decision be taken by Cabinet during this year.[21]

The main problem with the AT2000 is the fact that the aircraft is a new design. It has yet to build up a track-record and demonstrate its real as opposed to planned, running costs. Yet, the AT2000 has the potential also to provide a `low-end' combat capability to complement the Cheetah, similar to the role which the Impala performed for so many years.[22] Should South Africa choose the AT2000, it would in fact be the `launch customer' for this aircraft, since the first production aircraft would only be ready for production by about 2003.[23] According to Helmut Romer-Heitman the AT2000 "... *would be assembled in South Africa and would be fitted with a South African avionics suite, attack system ECM suite and communications suite. South African aerospace companies would also be involved in providing subsystems for AT2000s sold elsewhere*."[24]

Daimler-Benz Aerospace (DASA) has proposed establishing an assembly line for the AT2000 trainer aircraft in South Africa, if selected, and has proposed contracts with various South African companies to handle the design, development, integration, test and qualification of the AT2000s mission systems suite. South African companies would also be involved in the production of ground support equipment for the aircraft.[25]

The Mirage 2000-5, by contrast, is the latest addition to the Mirage 2000 combat aircraft family. It is a multi-role single seater or two seater fighter. It differs from its predecessors mainly in its avionics, its new multiple target air-to-ground and air-to-air firing procedures linked to the use of RDY doppler radar and its new visualisation and control system. The radar can simultaneously detect up to 24 targets and track them while it scans the eight most threatening ones.

Similar to the Mirage, the Gripen is also a top of the line aircraft. With its sophisticated delta-wing configuration, the Gripen is now in its fourth generation after ten years of production.

The offer for the Gripen is made by SAAB and BAe which manufacture Gripen as a joint venture. Newspapers report an offer of a ten-year IP programme which includes a partnership for the South African aerospace industry (potentially Denel Aviation) in the Gripen programme itself. At the time of the announcement, Allan Macdonald, the managing director of BAe in Southern Africa and Asia warned that South Africa was competing with nine other countries for participation in Gripen production and that a decision to buy the plane would have to be taken by 31 July 1998. Should the deal materialise "... *a Swedish-South African business partnership centre would be set up to encourage sub-contracting, training, technology transfer and the facilitation of exports to global markets ... we have included details on several ready to roll export-orientated projects outside the defence sector that will generate more than R20 billion over the next 10 years*."[26]

As the proposals stand at the moment, it is probably only the DASA AT2000 that meets the immediate requirements of the SA Air Force, given the lack of enthusiasm for the BAe Hawk 100 among the SA Air Force. It was originally offered by Britain, but has subsequently been cut from the shortlist.[27] Unconfirmed reports are that ARMSCOR has sent a separate RFI to BAe, requesting detailed information on the Hawk New Generation jet trainer which is the successor to the Hawk 100.[28]

The issue is really whether the South African threat environment at present justifies a top of the line fighter aircraft such as the F-16C, the Gripen, the Mirage 2000-5 or even the AT2000.

HELICOPTERS

The light utility helicopter is intended as the replacement for the Allouette lll a workhorse that is rapidly reaching the end of its cost-effective life. Although still serviceable, the operating costs of the Allouette are high and rising.

Once again, budget pressure may result in the original number of some sixty replacement helicopters being reduced to about 48 but this is an urgent item on the acquisition schedule. Technically, it would appear as if the Italian Augusta A-109 and the Canadian Bell 427 are the light utility helicopter leaders. It is unclear whether the Italian helicopter on offer is the A109k2 which is adapted for performance in high temperature and high altitude critical conditions. French/German Eurocopter is offering the military version of its EC135, the EC635, to South Africa. According to newspaper reports, South African companies would be involved in manufacturing and integrating the EC-136/635's avionics.

Eurocopter already have a strong presence in the South African security market. The South African Police Service operates a large fleet of Eurocopter BO 105s and BK 117s for surveillance, tracking stolen cars, crowd and riot control, anti-housebreaking patrols and similar missions.

Bell has been more successful in the private commercial market with sales of the Bell 407s, 412 and 430s.

PARTNERSHIPS AND STRATEGIC ALLIANCES

As companies position themselves for the final round of offers, some interesting alliances are emerging.

Thompson CSF of France, for example, is in the process of buying shares in South Africa's Altech Defence Systems (ADS). At present, ADS is the preferred integrator of the combat suites for both the submarines and corvettes. British competitors such as GEC Marine are concerned, as a result, that this places them at a disadvantage in supplying subsystems since ADS would obviously prefer French systems.

A similar situation exists with regard to the maritime and light utility helicopters. Eurocopter surprised the local industry with its agreement to market Rooivalk and Oryx (the local

equivalent of the Super Puma) helicopters and to swap technology and expertise on the programmes. This married Eurocopter (a joint Aerospatiale/Daimler-Benz Aerospace company) which produces the Tiger attack helicopter and the Super Puma with Denel. For Eurocopter the deal opens the door to the replacement of the Allouette llls by its EC635 light twin helicopter.

This obviously presents a problem for competitors such as the Augusta and Bell who argue that the Eurocopter is apparently expensive and not much favoured by the SA Air Force. Whatever the truth, this may mean that the other potential suppliers may be hesitant to enter into Defence IP commitments with Denel.

The Daimler-Benz Aerospace offer to set up a local final assembly plant for jet fighter aircraft in South Africa for the DASA AT2000 may run into a similar hurdle regarding the Denel partnership with Eurocopter. Reportedly, more than fifty per cent of the work and development, integration and supply of the mission systems for the aircraft would be undertaken in South Africa.[29]

CONCLUSION

The size of the IP arrangements under discussion in terms of the acquisition programmes discussed in this paper, if accepted, would be felt throughout the South African economy. Canada, for example, has certainly benefited from IP. Whereas Canada had hardly exported a helicopter prior to 1990, by 1998 it was exporting some sixty per cent of all helicopters in the world as a result of defence IP arrangements. Despite the fact that these deals are complex to negotiate, administer and monitor, the potential spin-offs from IP arrangements are huge. There can be little doubt that the IP offers on the table will eventually be crucial in securing any final order and that IP considerations may even impact on the size of the various deals that the Cabinet consider.

However, given the extent to which South African domestic procurement spending has declined, including research and development expenditure, and the extent to which the South African defence industry will be able to be involved in, or be in a position to benefit from the Defence IP component of the various procurement programmes, is perhaps questionable. What is certain is that without a substantial injection of work and funds, such as that which could be provided by the Defence IP agreements, the once vibrant South African defence industry is facing virtual collapse.

At the political level, national IP considerations may be paramount in any final decisions since the various package deals have considerable potential to serve as kick-starts for the wider economy, should the IP component be structured appropriately. Yet, other considerations that may loom large are political issues, the need to spread the procurement between a number of countries, and general foreign relations (how at ease South Africa feels in dealing with certain countries).

Realistically there is little, if any, chance that South Africa could afford the approximately R28 billion packages that are being discussed. In fact, there is no real `package deal' under discussion. While the foreign acquisition items are `bundled' into a single programme, this is no more than a ploy to create the impression of `buy more get some free'. The various foreign companies involved in the bids, between themselves, could offer some trade-offs, but this would not affect the total package price or was South Africa seriously expecting that foreign governments would fund its defence acquisition programmes?

What is at stake is simply a menu of items that the SANDF needs from which South Africa must choose. The terms of payment for those items that it most urgently requires and can afford must then be negotiated.

The country can probably only afford to procure foreign equipment to the tune of R8-9 billion. Therefore, there can be little chance of any early decision on the acquisition of items such as combat aircraft certainly not if these are items such as the Mirage or Gripen, and even the AT2000 is probably out of reach. Realistically, 1998 will probably see an announcement on the acquisition of the corvettes and their associated maritime helicopters, and the

refurbishment of the Daphne submarines to stretch their life. The replacement of the Allouette helicopters is perhaps a further possibility. In the Corvette-race, it would appear as if the Germans and the British are the front-runners, while the Augusta A-109 and the Bell 427 are the LUH leaders. Possibly some lifeline will also be thrown to Reunert on the MBTs to keep that industry going.

Whatever is eventually decided, there can be little doubt that the unrealistic force design which came from the Defence Review needs some serious pruning if the military is to fit under its budget ceiling. While flawed in many respects, the White Paper on Defence provides a clear policy framework. This and the subsequent Defence Review have served to legitimise the Department of Defence, but South Africa has yet to define the roles and missions of the SANDF appropriately to meet the requirements of future conflicts as opposed to preparing to fight the last war. And Cabinet has yet to demonstrate its commitment to finance its approved policies.

ENDNOTES

* The opinions and interpretations contained in this paper are obviously my own. I am, however, deeply indebted to a number of persons for interviews, notably Julius Kriel, Johan van Dyk, Chippy Shaikh, Kevin Hanafey, Pierre Steyn, Teresa de Risi and Cassim Nakkooda.

1. *The Acquisition Management Process, Defence Review*, Tenth Draft, 1 September 1997, p. 15
2. *Media Coverage of Defence Review*, CSANDF Internal Communication Bulletin, 40/97, 21 May 1997, pp. 1-2.
3. S Lunsche, *Manuel Sobers up with Realistic New Targets*, Sunday Times Business Times, Johannesburg, 7 December 1997.
4. The effects of these measures threatened up to 50 000 jobs in the defence industry. See S Bothma, *Scrapping of Rooivalk and Missile Projects `May Cost 50 000 Jobs*', Business Day, 19 June 1997.
5. Address by the Minister of Defence, the Honourable Mr J Modise, Defence Budget Vote, National Assembly, 22 May 1997, pp. 9-10
6. *Boom Time Ahead for Arms Industry as the Military Rusts*, Sunday Times, 22 June 1997.
7. See, for example, M Schmidt, *Police and Air Force Have their Wings Clipped*, Sunday Times, 28 December 1997.
8. See, for example, *Perspective on Media Reports on Cost Saving Measures in the DoD*, Department of Defence Bulletin, 76/97, 7 November 1997, p. 1
9. The German group of Thyssen, Blohm & Voss, Preussag, HDW, MAN, Ferrostal, Daimler-Benz Aerospace, Eurocopter and Fairchild/Dornier, for example originally offered: four Meko 200 corvettes; four Type 206 (Type 1400); the AT2000 advanced trainer; the EC-135/635 helicopter; four AS-532 Cougar helicopters; Dornier 328 coastal patrol aircraft and the reactivation of the SA Air Force's nine C-160 transport aircraft in a dual-role maritime patrol/transport configuration. See H R Heitman, *Germany Offers $10 billion Package to South Africa*, Jane's Defence Weekly, 10 September 1997, p. 27
10. Given present declining levels of productivity in South Africa and the general increased lack of competitiveness, such exchange rate assumptions may be optimistic.
11. ARMSCOR, *Defence Industrial Participation, Pretoria*, 1, 19 May 1997, p. 1; Department of Trade and Industry, The National Industrial Participation Programme for the Republic of South Africa, Pretoria, [n.d.], p. 3
12. The process for National IP and Defence IP is monitored by the DTI and ARMSCOR respectively.
13. According to ARMSCOR, "*Defence Industrial Participation (DIP) is the process where purchases of the Department of Defence are used as a leverage to oblige a foreign seller of defence commodities/services to do defence related business in South Africa on a reciprocal basis in order to advance military strategic and defence related industrial imperatives. The assessment of DIP proposals ... will be based on the extent to which it supports the capabilities required in the defence industry to provide for a strategic, logistical support and upgrade capacity for a technologically advanced*

and modern defence force, its doctrine and posture." ARMSCOR, Defence Industrial Participation Evaluation Guidelines, 1, 24 October 1997.

14. Defence Review Working Group, *Defence Review First and Second Reports, Defence Posture, Defence Functions, Force Design, Structure of DoD, Human Resources, Part-Time Forces*, 26 May 1997, p. 72
15. *Ibid*.
16. DCN International, <www.dcnintl.com/flf.htm>
17. Other details of the Spanish IP offer outlined to DTI include R700 million for a joint venture in unspecified composite materials; R260 million in joint projects with Eskom; R75 million for nuclear research at Koeberg nuclear power station; R480 million for scholarships, on-the-job training of new graduates and training in the transfer of technologies; R125 million in communications systems; a R750 million investment in a ceramics plant and an unspecified amount for the development of South African exports; see N Chandler, *Britain, Sweden given SA Arms Deal Deadline*, The Star, 9 January 1998; *Spain Ready to Buy Helicopters as Part of Corvette Offer Deal*, BBC Monitoring Service, 2 February 1998.
18. *SAN Must Buy to Meet its Objectives, Says Chief*, Jane's Defence Weekly, 20 November 1996, p. 18
19. M Bidoldi, *Armaments Industry: A Graveside*, Financial Mail, 12 September 1997, p. 46
20. On the MBTs Germany is restricted, by law, from exporting Leopard tanks probably the most appropriate tank for South Africa but can allow the export of subsystems such as gearboxes and engines which are generally considered the best on offer internationally.
21. Perhaps most indicative of a potential deal in the offing, is the apparent haste with which the US is settling the remaining debarment issue on the ISC case. Admittedly, this is also an issue to be resolved in anticipation of the next meeting of the Bi-national Commission in South Africa from 25 to 26 February which will include a meeting of the defence working group under the respective leadership of US Defence Secretary William Cohen and South African Minister of Defence Joe Modise. Against this background, media reports to the effect that the US had blocked any proposed Gripen deal on the grounds that the JAS 39 contains key components made in the US, is indeed ironic.
22. The AT2000 would have a maximum take-off weight of 7 600 kg and a top speed of around Mach 1,5.
23. H R Heitman, *Dasa Steps up Interest in Advanced Jet Fighter*, Jane's Defence Weekly, 3 September 1997, p. 20
24. H R Heitman, *Germany Offers $20 billion Package to South Africa*, Jane's Defence Weekly, 10 September 1997, p. 27
25. H R Heitman, `*Made in South Africa' Bid for German Trainer*, Jane's Defence Weekly, 21 January 1998, p. 16
26. A d'Angelo, *Saab and British Aerospace Dangle the Gripen Carrot*, Business Report, The Star, 9 January 1998. According to MacDonald, Swedish firms would be prepared to invest R600 million in various industrial participation ventures almost immediately, including socio-economic projects such as education. More than half of the offset from Sweden (worth up to R400 million) would be provided by the selection of South African heavy rolling stock for the Swedish railways by Transwerk, a division of Transnet. A related deal could include the supply of sixty heavy locomotives worth R60 million, built by SA's Union Carriage; S Laufer, *R400m Contract to Transnet Linked to Jet Fighter Dea*l, Business Day, 9 January 1998.
27. See, for example, the remarks by General Meiring about the lack of suitability of the Hawk in H R Heitman, *Germany Offers $10 billion Package to South Africa*, Jane's Defence Weekly, 10 September 1997, p. 27. Other aircraft in the same niche are the Aeromacchi MB-339 and the new Yakovlev Yak-130.
28. N Chandler, writing in the African Defence Journal, 26 January 1998, p. 5
29. S Bridge, *German Jet Fighter Plant for SA Likely*, Business Report, The Star, 9 January 1998.