WHITE PAPER ON

THE SOUTH AFRICAN DEFENCE RELATED INDUSTRIES

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TABLE OF CONTENTS

Introduction
Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Chapter 7

INTRODUCTION

MANDATE

The Department of Defence (DoD) prepared a White Paper on Defence, which was approved by Parliament in May 1996 and forms the policy framework for defence. Chapter Seven of the White Paper on Defence addressed arms control and the defence related industries, and stated that government wouldprepare a White Paper on the defence industry. The DoD began such preparations within the context of the Defence Review, which built upon the policy framework of the White Paper on Defence.

On 21 August 1996 Cabinet tasked the National Conventional Arms Control Committee (NCACC) to initiate and oversee the preparation of a White Paper on the South African defence industry. On 12 November 1996 the NCACC set out ina memorandum what the broad contents of the White Paper should be. These are reflected in the chapters in this White Paper: some of the topics put forward by the NCACC have been synthesised while others have been expanded.

AIM

The primary aim of this White Paper is to review the role, nature and current status of defence industries in South Africa, to provide government's vision for the future of the future of these industries and to prepare policy options for the governance of the industries and for those areas critical to their continued viability. The White Paper deals with the following subjects:

- The existing policy framework for defence related industries.
- An overview of the industries including an analysis of their economic viability, as requested by the NCACC.
- Critical defence industrial capabilities and technologies which need to be sustained.
- Acquisition and technology management structures.
- Industrial policy and defence related industries.
- Governance of the industries.

- Options for the restructuring and transformation of defence related industries.

DEFINING THE DEFENCE INDUSTRY/ DEFENCE RELATED INDUSTRY

The term `defence industry' is widely used internationally, sometimes interchangeably with `armaments industry' and 'defence suppliers'. However, the term 'defence-related industries' in some ways more accurately describes the focus of this White Paper, since there is a growing tendency for companies producing defence equipment to make use of civilian technologies, or to manufacture dual-use products which can be sold to both defence and non-defence markets. There is also an increasing overlap between defence and civilian production within companies, both nationally and internationally.

While there is no clearly defined 'defence industry' as a distinct industrial sector, it is evident that the production of armaments for use by national defence forces, and related activities, requires special control measures by governments and forms an identifiable cluster of activities which are recognisable globally and to which some specific economic and political processes apply.

For the purposes of this paper, South African defence-related industries are defined as those clusters of organisations in the public and private sector, and commercial companies and business units of such organisations, which are directly or indirectly active in the provision of goods and services to security forces which are defined as armaments. This provision can include research, design, development, production, assembly, test, evaluation, upgrading, procurement, export, import, maintenance, logistical support, human support or project management. The defence-related industries are mainly involved in the material, mechanical, electrical, electronic and chemical sectors of the manufacturing industry and produce armaments for both domestic and international clients.

Armaments are defined as any vessels, vehicles, aircraft, ammunition and weapons, as well as substances, materials, raw materials, components, equipment systems, articles, techniques or services, that are designed, modified or adapted to be utilised to equip, maintain or support security operations, or which are usedin the development, manufacture or maintenance of such armaments.

Throughout this White Paper the term 'defence-related industries' is used and not the term 'defence industry'. This White Paper does not view the South African defence industrial capability as a distinct sector of the economy. It adopts the approach of addressing this capability as an integral part of the South African industrial base. The Green Paper identifies and addresses defence related capabilities and technologies within South Africa's industrial base and seeks to apply a generic industrial strategy to these capabilities and technologies. A specific industrial strategy is adopted only for those key technologies and capabilities which are considered by government to be strategic for national defence.

GOVERNMENT'S VISION FOR DEFENCE RELATED INDUSTRIES

Government recognises that defence related industries are an integral part of South Africa's defence capability. Government also recognises the strategic and defence value of having a local defence industrial capability. However, due to budgetary constraints, and within the framework of broader national industrial strategy, government will be very selective of which technologies and capabilities are to be retained on the basis that they are strategic or that they constitute a national asset.

The South African Government, as a responsible member of the international community, perceives South African defence industrial capabilities as being singularly different from other components of the national industrial base for two reasons.

. Firstly, the South African defence industrial capability has strategic importance for the national defence interest. Only certain key components have such strategic characteristics, however.

b. Secondly, the output of South Africa's defence industrial capability, be it products, services or technologies, have to be subject to government control. The South African Government has a duty to exercise control over any product, service or technology which can be termed an armament.

METHODOLOGY

The NCACC appointed a Steering Committee to oversee the execution and management of the research and writing process for the White Paper, with representation from:

- Defence Secretariat
- Department of Trade and Industry
- Armscor
- Denel
- South African Aerospace, Maritime and Defence Industries Association (AMD)
- Human Sciences Research Council (HSRC)
- Council for Scientific and Industrial Research (CSIR)
- University of Cape Town's Centre for Conflict Resolution
- University of the Witwatersrand's Graduate School of Public and Development Management.

A number of position papers and research reports were generated by experts, stakeholders and interest groups. These reports were synthesised into the White Paper, which went through several drafts, in close consultation with the steering committee and the NCACC.

CHAPTER ONE

NATIONAL POLICY FRAMEWORK

THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution envisages South Africa to be a sovereign, democratic state, founded on the following values:

- Human dignity, the achievement of equality and the advancement of human rights and freedoms.
- Non-racialism and non-sexism.
- Supremacy of the Constitution and the rule of law.
- Universal adult suffrage, a national common voters roll, regular elections and a multi-party system of democratic government (Section 1(a) to (d)).

The Constitution provides for the establishment of a defence force that must be structured and managed as a disciplined force and whose primary object is to defend the people and territorial integrity of South Africa, in accordance with the Constitution and international law regulating the use of force (Section 200 (1) and (2)).

The Constitution states that all persons have the right to freedom of expression, including freedom of the press, freedom to receive or impart ideas, academic freedom and freedom of scientific research (Section 16) and that fundamental human rights may only be limited to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom (Section 36 (1) and (2)).

The Constitution requires that when organs of state contract for goods or services, they must do so in accordance with national or provincial legislation that establishes a system which is fair, equitable, transparent, competitive and cost-effective. This does not prevent the implementation of a procurement policy by organs of state providing for categories of preference in the allocation of contracts, and the protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination. National legislation must prescribe a framework within which this policy may be implemented (Section 217 (1) to (3)).

The Constitution declares four governing principles which pertain to national security (Section 198 (a) to (d)):

1. National security must reflect the resolve of South Africans to live in peace and harmony, to live as equals, to be free from fear and want, and to seek a better life.
2. South Africans are precluded from participating in armed conflict, except as provided for by the Constitution and national legislation.
3. National security must be pursued in compliance with the law, including international law.
4. National Security is subject to the authority of Parliament and the national executive.

WHITE PAPER ON DEFENCE

Approach to Security

The White Paper on Defence (as approved by Parliament on 14 May 1996) sees security as an all encompassing condition in which individual citizens live in freedom, peace and safety; participate fully in the process of governance; enjoy the protection of fundamental rights; have access to resources and the basic necessities of life; and inhabit an environment which is not detrimental to their health and well-being (Chapter 2: par. 2).

The national objectives of security policy therefore encompass the consolidation of democracy; the achievement of social justice, economic development and a safe environment; and a substantial reduction in the levels of crime, violence and political instability. Stability and development are regarded as inextricably linked and mutually reinforcing (Chapter 2: par. 3).

The greatest threats to the security of the South African people are socio-economic problems such as poverty and unemployment, poor education, the lack of housing and the absence of adequate social services, as well as the high level of crime and violence (Chapter: 2 par. 5).

1. Accordingly, one of the government's policy priorities is the Reconstruction and Development Programme. The RDP is the principal long-term means of promoting the well-being and security of citizens and, thereby, the stability of the country (Chapter 2: par. 6)
2. There is consequently a compelling need to reallocate state resource to the RDP. The challenge is to rationalise the South African National Defence Force (SANDF) and contain military spending without undermining the country's core defence capability in the short or long-term. As a matter of sound organisational practice, any cuts to be the defence budget should be rational and well planned (Chapter 2: par. 7).

Technologically Advanced National Defence Force

The White Paper on Defence states that the SANDF shall be a balanced, modern, affordable and technologically advanced military force, capable of executing its tasks effectively and efficiently (Chapter 2: par. 11.7). It further states that the government will not endanger the lives of military personnel through the provision of inadequate or inferior weapons and equipment (Chapter 3: par. 43.6).

Core Defence Capability

The White Paper states that the SANDF has to maintain a core defence capability because of the inherent unpredictability of the future. Such a capability cannot be created from scratch should the need suddenly arise. The maintenance and development of weapons systems is a long-term endeavour (Chapter 4: par. 6.2).

The White Paper notes that deterrence requires the existence of a defence capability which is sufficiently credible to inhibit potential aggressors. Although South Africa is not confronted by any foreseeable external

military threat, this capability cannot be turned on and off like a tap. It is therefore necessary to maintain a core defence capability (Chapter 5: par. 7). A core defence capability includes a balanced and sustainable nucleus with, amongst other features, the maintenance and, where necessary, the adequate and appropriate upgrading or replacement of equipment and weaponry (Chapter 5: par. 8).

The White Paper states that the services of an efficient domestic defence industry are required to address these needs (maintenance, upgrading and, where necessary, the replacement of weapons and equipment) and enable the SANDF to meet its constitutional obligations (Chapter 8: par. 3).

The industry will permit the cost-effective purchase of certain products and systems, ensure the life-cycle maintenance and support of such systems, and perform refurbishment and upgrades of existing equipment. (Chapter 8: par. 3). The defence equipment required by the SANDF, however, cannot and should not be procured exclusively from the local industry. Many complex systems cannot be produced domestically and will have to be imported. Management expertise for the specialised procurement functions is located within the DoD (Chapter 8: par. 5).

Regional Co-operation

The White Paper recognises that the government might be called upon by neighbouring countries to play a number of supportive roles. The SANDF could, for example, provide assistance as regards the maintenance and upgrading of weaponry and equipment (Chapter 4: par. 20).

Equipment for Peace Support Operations

The White Paper indicates that South Africa’s consideration of involvement in specific peace support operations will not be limited to the possible deployment of troops. The involvement could also take the form of providing equipment, logistical support, engineering services, communications systems and medical personnel facilities (Chapter 5: par. 25). The acquisition and maintenance of military equipment shall take account of the particular requirements of peace support operations (Chapter 5: par. 26).

Approval of Major Procurement Projects

The White Paper states that the approval of major weapons procurement projects is the prerogative of Parliament on an annual and long-term basis (Chapter 7: par. 5).

Budgetary Forecasts

The White Paper requires the Defence Review to present, for the consideration of Parliament and the public, detailed and well-motivated budgetary forecasts and proposals; specific policies regarding the provisioning of logistic resources; and the identification of appropriate technology to optimise the cost-effectiveness of the core force (Chapter 7: par. 6).

Foreign Procurement

It is stated that within budgetary constraints, the DoD will engage in co-operative ventures with its counterparts throughout the world in such fields as training and education, defence planning, exchange visits, combined exercises and procurement of arms and equipment (Chapter 4: par. 6.3).

Conversion of the Defence Industry

The White Paper states that in circumstances of diminishing domestic defence expenditure and falling global arms sales, the industry will be encouraged to convert production capability to civilian manufacture without losing key technology capability needed for military production (Chapter 8: par 2).

Arms Exports

The White Paper states explicitly that the defence industry must have access to international markets in order to facilitate cost-effective performance and reduce the unit costs of producing items for the SANDF (Chapter 8: par. 4). The government will support the export initiatives of the defence industry by permitting it to contract and honour obligations which have been duly approved (Chapter 8: par. 11).

Arms control

Chapter 8 of the White Paper deals specifically with arms control. On 30 August 1995, Cabinet approved new interim policy on arms control. Chapter 8 of the White Paper is based largely on that policy, as contained in the Cabinet memorandum on the 'Rationale and Proposed Principles Governing Conventional Arms Control' (Chapter 8: par. 1).

The White Paper establishes a number of principles and guidelines governing conventional arms trade. In essence, these require that:

- The import and export of conventional arms, and the transit of arms through South Africa, shall be subject to a control process and permit system under the auspices of a cabinet committee, the National Conventional Arms Control Committee (NCACC); and shall be subject to oversight by the relevant parliamentary committees (Chapter 8: par. 9).
- The principle of openness and transparency relating to arms trade shall apply. This will be limited only by national security interests (Chapter 8: par. 12).
- New arms control measures are based on the principles of the United Nations Charter, international law, recognised international arms control systems, and a balance of economic, ethical, political, military and security considerations (Chapter 8: par. 13).
- South Africa will promote and exercise due restraint in the transfer of conventional arms and related technologies by taking into account factors such as respect for human rights, the international security situation, and the degree to which arms sales are supportive of South Africa's national and foreign interests. (Chapter 8: par. 15). South Africa shall not transfer arms to countries which systematically violate or suppress human rights and fundamental freedoms (Chapter 8: par. 16)
- South Africa shall avoid transfers and trade which would be likely to be used for purposes other than the legitimate defence and security needs of the recipient country (Chapter 8: par. 17).

The principles stated in the White Paper on Defence are in alignment with the NCACC Rationale and Principles which state that the government will take the following into account when evaluating arms sales:

- Be guided by respect for human rights and fundamental freedoms in the recipient country (Section 3.5.1).
- Consider cases where the political, social, cultural, religious and legal rights are seriously and systematically violated by the authorities of that country (Section 3.5.2).
- The internal and regional situation in the recipient country, in the light of existing tensions or armed conflicts (Section 3.5.3).
- The record of compliance of the recipient country with regard to international arms control agreements

and treaties (Section 3.5.4);

- The nature and cost of the arms to be transferred in relation to the circumstances of the recipient country, including its legitimate security and defence needs, and the objective of the least diversion of human and economic resources for armaments (Section 3.5.5);
- The degree to which arms sales are supportive of South Africa's national and foreign interests (Section 3.5.6).

The White Paper on Defence established certain arms control processes and structures. Conventional armaments and related technology may not be imported, transferred through South Africa, or marketed or exported abroad without a duly approved permit. The applications shall be subject to a multi-departmental review process. The NCACC will serve as the ministerial control, policy and decision-making authority. An independent Inspectorate will be established to ensure that all levels of the process are subject to scrutiny and oversight (Chapter 8: par. 18-27).

The White Paper states that South Africa is committed to the international cause of non-proliferation of weapons of mass destruction (i.e. nuclear, biological and chemical weapons and related technology, as well as advanced missile systems and missiles as defined by the Missile Technology Control Regime) (Chapter 8: par.. 28 - 38).

THE DEFENCE REVIEW

The White Paper on Defence provided for a Defence Review, the aim of which was to elaborate on the policy framework through comprehensive long-range planning on such matters as posture, doctrine, force design, force levels, logistic support, armaments, equipment, human resources and funding. More specifically, the White Paper provided that the Review would encompass the following:

- The implications of the core force for the size, doctrine, posture, weaponry, equipment and other features of the SA/NDF.
- The strategic and technical implications of the constitutional provision that the SANDF "shall be primarily defensive in the exercise or performance of its powers and functions".

The absence of any immediate military threat to South Africa, the low probability of a significant threat within the foreseeable future, the reductions in the defence budget since 1989 and the likelihood that the budget will remain restricted for some time, have created a situation where the maintenance of extensive military capabilities is neither necessary nor affordable. The Defence Review therefore defines the minimum force level that can be maintained as a growth core, in accordance with the core force approach, without the permanent loss of capabilities.

The Defence Review deals with a number of policy matters relevant to defence related industries, such as:

- Defining the defence industry (Chapter 13, paragraph 6)
- DoD requirements (Chapter 13, paragraphs 7 to 19)
- DoD policy for the defence industry (Chapter 13, paragraphs 20 to 28)
- DoD acquisition policy (Chapter 13, paragraphs 29 to 71)
- Defence technology development policy (Chapter 13, paragraphs 72 to 109)
- Social responsibility of the industry (Chapter 13, paragraphs 110 to 118)
- Arms trade (Chapter 13, paragraphs 119 to 124)

WHITE PAPER ON SCIENCE AND TECHNOLOGY

The White Paper on Science and Technology deals with defence research. It notes that although South Africa's industries allocate considerable financial resources to research and development (R&D), the balance of trade in

medium and high technologies remains negative (Section 8.2.5). A notable exception is the armaments industry, which currently has a positive annual balance of trade.

The White Paper on Science and Technology states that the essence of the new strategy of the SANDF is to convert the current force into a small, but technologically more capable one. The reliance on quality intelligence will be high to allow for the timeous scaling-up of the force to meet potential threats, as will be dependence on a broad technology base (Section 8.2.5).

Insurance against threats will take the form of maintaining small, but sophisticated forces which can be mobilised quickly and which rely on technology to increase the flexibility and responsiveness of a smaller military establishment (Section 8.2.5).

Defence Technology Base

The White Paper on Science and Technology (Section 8.2.5) notes that the maintenance of a strong technology base is a prerequisite of the new SANDF strategy and must serve a number of purposes, namely:

- Maintaining the capability to detect threats.
  - Being aware of trends in military technology and their implications for the SANDF.
  - Being capable of producing technology demonstrators that can rapidly be turned into military technology if necessary.
- Being capable of providing expert advice for procurement purposes.
- Providing test and evaluations services.
- Supporting upgrade and maintenance activities.

The White Paper on Science and Technology states that the future of the South African defence industry cannot be seen as distinct from that of its civilian manufacturing counterpart and that dual concepts should be understood and applied. The view that defence technology should be phased out in favour of civilian technology, or converted into it, is not tenable. Instead, the defence industry must make special efforts to leverage spin-offs in the civilian sector and to develop relationships with civilian institutions in the National Science Initiative (NSI) to promote spin-on's (Section 8.2.5).

The White Paper on Science and Technology states that the Department of Defence, Department of Arts, Culture, Science & Technology and the Department of Trade and Industry should co-operate closely to develop a strategy for optimal promotion of the local defence industry (Section 8.2.5).

The Defence Research and Development Board budget should be displayed in the government science, education and technology (SET) budget, as well as in the Department of Defence budget. This would give government and the public the opportunity to evaluate the entire SET spend in an non-fragmented way (Section 8.2.5).

FOREIGN POLICY ON ARMS TRANSFERS

South Africa's destiny is inextricably linked to that of the region and the continent (Foreign Policy Framework for Southern Africa: Section 1.2). To achieve lasting peace and security, South Africa will actively promote its foreign policy principles. South Africa will, within the Southern African region, promote respect for human rights and democracy. South Africa will be guided by the principles of justice and international law (Foreign Policy Framework for Southern Africa: Section 1.2.2).

The Department of Foreign Affairs aims to develop regional policy through negotiations and mutual co-ordination. (Foreign Policy Framework for Southern Africa: Section 2.1.1).

Government will support the export initiatives of defence related industries by permitting them to contract and

honour obligations which have been duly approved in terms of the national arms control system. Government shall however reserve the right to prohibit or withdraw such support should it be in conflict with or irreconcilable with international or national interest at any given time (NCACC Rationale and Principles).

SOUTH AFRICAN MACRO-ECONOMIC AND INDUSTRIAL POLICY

The Department of Trade and Industry is responsible for the general well-being of South Africa's industrial base, its general trade and contribution to economic growth, and establishing and promoting trade relations within the international community.

From an economic point of view, the government is committed to the basic principles of fiscal and monetary discipline. Furthermore, there has been a fundamental shift in trade and industry policy from an inward orientated, import substitution approach to an outward orientated approach focusing on the achievement of international competitiveness. Government announced, in support of these basic principles, a framework for sustainable growth and development with an outward orientation - the Growth, Employment and Redistribution strategy (GEAR).

GEAR

Central to the GEAR strategy is the enhancement of non-gold exports, increased private sector investments (with a primary focus on increasing labour opportunities), development of infrastructure and improved service delivery. Key ingredients which impact specifically on defence related industries include, amongst others:

- Liberalisation of the capital account of the balance of payments and the possible abolition of exchange controls.
- The speeding up of tariff reductions to facilitate industrial restructuring.
- The improvement of incentives and facilities to promote the investment, technology development, and human resource development in industry to promote competitive and labour absorbing projects.
- The strengthening of competition policy, and the promotion of small, micro and medium enterprises.
- The promotion of sectoral industrial strategies employing cluster support programmes and related programmes and facilities.
- The restructuring of state assets (privatisation) and the introduction of schemes to allow the broader population to become owners of such assets.
- Greater support for human resource development in industry, and suitably flexible labour market policies to encourage the employment of new entrants into the labour market and marginalised groups.
- The continued rationalisation and reduction of import protection in order to encourage the emergence of truly competitive producers and service providers.

GEAR intends to lead off with the sale of non-strategic assets and the development of public-private partnerships in transport and communications. Strategic equity partnership arrangements, rather than full-scale privatisation, is envisaged for large public corporations.

The GEAR programme includes the restructuring of state assets which could include the reorganisation of assets into new companies, privatisation, strategic equity partnerships, and a suitable range of related actions.

National Industrial Policy and Related Issues

Industrial policy in South Africa is undergoing an historic change in direction. Previously, the key concern was self-sufficiency, largely for political and strategic reasons. In this context industrial policy was largely focused on demand-side incentives (e.g. tariffs, subsidies, quotas), through which firms were encouraged to produce for a

highly protected domestic market.

Today the major focus of industrial policy is towards providing long-term improvements in employment and wealth creation in South Africa, through the creation of a sustainable, internationally competitive manufacturing base. In order to achieve this, industrial policy has shifted from demand-side incentives towards supply-side measures, which are designed to lower unit costs, and encourage firms to invest in products and processes that are internationally competitive.

This supply-side approach is intended to revitalise South African industry and to expedite the country's evolutionary progress up the so-called value chain towards competitiveness in more skills-intensive and technology-intensive products.

Historically, defence related industries, because of their strategic importance in the context of United Nations arms embargoes against South Africa, benefited from a high degree of direct and indirect support from government. The support that these industries received from government was determined by strategic not economic considerations.

As a result of its previous privileged access to state resources, defence related industries developed into some of the most significant parts of South Africa's industrial base. Thy also became some of the country's leading producers and exporters of high value-added and technology-intensive products. Government no longer regards defence related industries as being unique, although they will be treated differently to other industries in some respects for the following reasons:

- Government (including the Departments of Defence, Safety and Security and Correctional Services) is the main client for armaments and the only domestic one.
- The nature of many products produced defence industry (armaments) requires strict government control, particularly with respect to imports and exports.
- Some of the industries' products and services are not subject to market forces (e.g. testing ranges).
- Many facilities and capabilities within the industries form part of the country's overall defence capability and are therefore strategically important rather than having an intrinsic economic value.
- Many people who work in defence related industries may on certain occasions be deployed outside South Africa under particularly dangerous working conditions.
- Contracting in defence related industries takes place at the highest level of the product hierarchy.

Defence related industries are an integral part of South Africa's industrial base. National industrial policy is therefore applicable in its entirety to these industries, except in those key strategic areas where national defence priorities indicate a deviation from such policy. These exceptions are limited solely to those strategic technologies and capabilities which are crucial to the national defence interest.

National industrial policy is aimed at the promotion of industrial expansion, employment creation, exports, small business development and black empowerment and contains a number of policy directions impacting on defence related industries.

The Department of Trade and Industry (DTI) is responsible for formulating and implementing national industrial policy in South Africa. However, none of its policy initiatives are specifically directed toward defence related industries. Small, medium and micro enterprises (SMMEs) engaged in defence production, particularly those that are owned or managed by individuals from previously disadvantaged communities, should benefit significantly from many of these industrial policy initiatives.

Supply-Side Support Measures. The supply-side support measure (SSM) agenda has several elements, which contain a range of strategies and programmes. A key area of the SSM is technology promotion or innovation support.

Investment Support. Investment support is designed as an incentive fore relatively labour-intensive manufacturing industries, to support industrial growth in regions of existing or potential high agglomeration economies and to support new investments in SMME's. As described below, this support takes a number of

forms.

Policy on Science and Technology

As already noted in this paper, the White Paper on Science and Technology touches on several aspects relevant to defence related industries. It indicates that the balance of trade in medium and high technologies remains negative, with the exception of the armaments industry, which highlights the importance of defence related industries in maintaining the overall technology base. It confirms the importance of a strong local technology base as an essential component of the core force concept and lists several capabilities required to support the SANDF strategy.

National Industrial Participation Programme. The mission of the programme is to leverage economic benefits and support development of South African industry by effectively utilising government procurement.

PROPOSED NATIONAL PROCUREMENT POLICY

In April 1997 the Ministry of Finance and the Ministry of Public Works issued a Green Paper on Public Sector Procurement Reform in South Africa. It seeks to enable small, medium and micro enterprises (SMME's) easier access to the public sector tendering system. Government recognises the important role of SMME's in the macro-economic development of the country. In the past, the tendering system favoured larger and more established businesses, and the Green Paper seeks to level the playing field.

The Green Paper proposes that the current state and provincial tender boards are abolished and that these are replaced with Procurement Centres at departmental and provincial level. It is envisaged that these are overseen at national level by a Procurement Compliance Office. In effect each Director General will be empowered to conduct all departmental procurement.

Government is the largest single purchaser of goods and services in the country, and as such government procurement must support South Africa's overall macro-economic objectives.

The Green Paper has a number of socio-economic objectives which have significant implications for defence related industries and the manner in which the DoD conducts its procurements. The objectives include:

- Simplification of tender documents.
- Breakout procurement.
- Awarding of tenders in terms of a development objectives.
- An SMME affirmative participation programme.
- Promoting employment-intensive practices.
- Affirming marginalised sectors of society via construction projects.
- Development of an affirmative procurement policy. Such a policy has been approved by the Ministry of Defence (MoD).

When this document is adopted, the Secretary for Defence, as Head of Department in the DoD, will be empowered to conduct all DoD acquisition and procurement.

OTHER POLICIES

The following legal and policy frameworks are also relevant to the defence industry and have been taken into consideration in this White Paper:

- The Transitional Executive Council, Sub Committee on Defence, Draft National Policy for Defence Industry, dated April 1994.

- Non proliferation of Weapons of Mass Destruction Act, No 87 of 1993; Missile Technology Control Regime, Regulations Number 1789; Nuclear Suppliers Group, Number 1790.
- The Armaments Development and Production Act, No. 57 of 1968.
- The Cameron Commission recommendations.
- Cabinet Memorandum on the National Conventional Arms Control Committee (NCACC), 30 August 1995.
- Directorate of Conventional Arms Control Guide to the Terms of Reference of Conventional Arms Control in South Africa, 1 May 1996.
- Notice in Relations to Arms Control, Government Gazette No. 17324, No. R1171, 2 August 1996.
- Policy document on Industrial Participation, final draft, Department of Trade and Industry, 18 February 1997.
- The Ministry of Defence investigation into the acquisition function of the MoD, 8 August 1996, consisting of:
    - MODAC 1 (Technology and Armament Management)
    - MODAC 2 (Defence Industry Policy).
    - MODAC 3 (Defence Acquisition Programme Organisation).
    - MODAC 4 (Marketing Support Management in the Ministry of Defence).
- Policy document on Affirmative Procurement within the MoD, October 1996.
- Policy on Transparency in Armaments Exports, approved by Cabinet on 18 June 1997.
- MoD policy on Defence Industrial Participation (DIP), Revision 1, 7 May 1997.
- National Key Points legislation.
- Restructuring of State Assets, September 1995
- National Framework Agreement, April 1996
- DoD transformation documentation on restructuring and accounting officers ship responsibilities.

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CHAPTER TWO

OVERVIEW OF DEFENCE RELATED INDUSTRIES

HISTORY

The origins of the domestic defence related industries can be traced back to the 19th century, but it was only during the Second World War that substantial quantities of armaments were manufactured locally (5 770 armoured cars, 600 guns and 30 000 military vehicles) to support the Allied war effort. Local development of armaments was also undertaken: notable achievements were the MK1 armoured car and the JB1 radar. After the war most of the wartime factories converted to their pre-war civilian activities although a very modest defence industrial base was retained.

In the early 1960's the government decided to expand the defence related industries in the face of increasing international isolation as a result of apartheid and growing resistance domestically and in the region. At that stage armaments production was largely in the hands of private industry. The first step was the establishment in 1964 of a statutory body, the Armaments Production Board, that was responsible for both acquisition for the SADF and the establishment and management of public sector defence related industries. The Board was also

tasked with the co-ordination of arms production in the private sector, and by the mid-1960's nearly 1000 private sector firms were involved in various aspects of domestic arms production.

In 1968 the Armaments Production Board was renamed the Armaments Board and tasked with the acquisition of armaments for the South African Defence Force, as well as ensuring the optimal utilisation of the private sector. In the same year the government established the Armaments Development and Production Corporation of South Africa (Armscor) (Act 57 of 1968), with the mandate to foster and develop South Africa's domestic defence industry and to supervise the manufacture of armaments. During the next few years Armscor took over various private sector companies, such as Atlas Aircraft Corporation, and established a number of new production and research and development facilities.

Domestic production was also encouraged through the government's support to strategic industries and its import-substitution drive. An important development during this period was the establishment of quality standards appropriate for the manufacture of military equipment. This had a profound effect on the lifting of quality standards in the manufacturing sector of the economy. Applied research and development capabilities were also greatly enhanced, especially through the National Institute for Defence Research of the Council for Scientific and Industrial Research (CSIR).

Increasing international opposition to apartheid, and world-wide demands for a mandatory arms embargo against South Africa prompted the government to embark on a major reorganisation and expansion of the domestic defence related industries during the mid-1970's. The rationale behind the establishment of Armscor was based primarily on the then government's strategic concerns in the context of the United Nations' arms embargo. The motivation for the establishment of Armscor was fundamentally strategic in nature, due primarily to the strategic concerns of the government of the day.

In 1976 the Armaments Board and Armscor were merged to form the Armaments Corporation of South Africa (Armscor), which assumed responsibility for the procurement and production of armaments for the SANDF.

The imposition of the United Nations' mandatory arms embargo against South Africa in November 1977 led to the establishment of new defence production facilities by Armscor in a drive for self-sufficiency in armaments. Armscor also became the state organisation used to break or circumvent imposed sanctions. The policy was to utilise the private sector industry wherever possible. Capabilities that already existed in the private sector, e.g. in the vehicle and electronics industries, were not duplicated. Armscor was primarily responsible for weapons systems development and integration, whereas the private sector supplied materials, components, subsystems and in many cases complete products. The major portion of South Africa's defence related industries thus remained in the private sector.

The Armaments Development and Productions Act defined the mandate, roles and functions of Armscor. Armscor had three main tasks, namely manufacture of armaments, acquisition of armaments and arms control. A number of secondary functions existed. These included testing and evaluation, defence research and development, industrial development and the marketing and the sale of SADF excess stock.

Armscor played an important role in the overall co-ordination of the industry and was given the *de facto* mandate for developing policy for the industry. The Armscor Board acted as the state tender board for the acquisition of capital equipment in terms of the SADF's Special Defence Account, as well as for the SA Police and other government departments such as the Prisons Services.

The establishment of product development capabilities was a major milestone during this period. An example of this was the establishment of Kentron in 1978, placing the missile development industry on a firm footing. This elevated the status of the manufacturing sector of the economy to that of a designing industry. The concentration on development of the defence sector, however, inevitably entailed opportunity costs for other sectors of the economy and on a macro-level the economy was probably adversely affected.

Armscor and the private sector defence related industries expanded rapidly during the 1980's as a result of South Africa's military involvement in a number of regional conflicts (e.g. Angola). Completely new sectors of the defence related industries were established, and the capabilities of the general industrial base were vastly improved through substantial investment. During this period, about half of the rapidly increasing defence budget

was allocated for the procurement of armaments.

As a result of massive state investment Armscor developed into one of the largest industrial groups in South Africa and by 1981 had assets of R2000 million, a yearly turnover of R1500 million and more than 25 000 employees. Armscor was also contracting more than 900 companies in the private sector, which employed about 120 000 people. System development capabilities were established: Armscor set up operational research and systems engineering facilities such as Milistan, Gennan and Armatron and the concept of system suppliers was introduced in the defence industrial base.

Due to the arms embargo, Armscor was obliged to adopt a number of uneconomic practices (stockpiling supplies of certain items and investment in R&D for commercially unviable production facilities). It also carried out covert and illegal activities (such as establishing front companies) to circumvent the embargo. The then government authorised chemical, biological and nuclear weapons programmes - the latter was carried out under the auspices of Armscor and resulted in the assembly of at least six nuclear devices. Most of these activities were carried out in secrecy, protected by legislation such as the Armaments Development and Production Act no 57 of 1968 (as amended). The Atomic Energy Corporation supplier the material for this endeavour.

To decrease unit costs for its local customers and to utilise excess capacity, Armscor entered the export market in 1982. Since the early 1980's the value of defence exports has increased substantially, and defence related industries are now some of the largest exporters of manufactured goods in the country. The relative success of South Africa’s arms export drive resulted in United Nations Security Council Resolution 558 of 1984 requesting all nations to refrain from purchasing armaments produced in South Africa.

By the late 1980's defence production had become one of the most significant activities in the country’s industrial base, both in terms of employment and contribution to the national economy. Defence related industries employed over 130 000 people directly and indirectly, which accounted for 9% of manufacturing employment. More than 3000 firms and business units (10% of all manufacturing establishments) in the public and private sector were involved in various aspects of defence production as contractors, sub-contractors and suppliers.

Defence production had also reached a relatively high degree of self-sufficiency by the end of the 1980's and most of the equipment requirements of the South African Defence Force (SADF) were met domestically. However, because of the country’s limited research and development resources, and the UN arms embargo, the local defence related industries did not try to reproduce or emulate the R&D which had already been carried out by the major Western arms producers. Instead the industries concentrated on acquiring a capacity for upgrading, modifying and modernising existing armaments and weapons systems.

By 1989 Armscor was ranked as one of the largest industrial companies in South Africa. It was ranked 30th in the country in terms of total assets (R2,5 billion) and fifth in the public sector after Eskom, Transnet, the Post Office and the Land Bank. It had a turnover of R3 200 million in 1989/90 and was ranked 15th in the country in terms of total employment with more than 30 000 employees.

The dramatic expansion of defence related industries, particularly during the late 1970's and throughout the 1980's, was informed by strategic as opposed to economic considerations, and occurred during a period when the economy was performing poorly. Thus, the development of the domestic industries imposed a substantial burden on the national economy and was a significant contributing factor to the country’s deteriorating economic performance in the 1970's and 1980's.

While defence related industries emerged as significant providers of jobs and skills during the 1970's and 1980's, most of these jobs were highly capital and skill intensive and thus inappropriate given South Africa’s factor endowments. These industries captured a disproportionate amount of the country’s scarce labour resources (10% of total scientists and engineers in the country in late 1980's), imposing costs on the more productive sectors of the economy and lowering the aggregate productivity of human capital.

The high levels of state investment in defence related industries during the 1970's and 1980's (including R&D spending) also crowded out both public and private sector investment in the more productive sectors of the

civilian economy, and thereby contributed to the declining productivity and output performance of the manufacturing sector.

DEFENCE CUTS AND DOWNSIZING OF THE DEFENCE RELATED INDUSTRIES

Changes in the Strategic Environment

South Africa's external strategic environment changed dramatically after 1989. The end of East-West contestation was accompanied by a reduction in ideological tensions within and amongst African countries, by significant moves towards political pluralism in Southern Africa and by the end of apartheid in South Africa. These developments contributed to the resolution of most of the region's historical conflicts and, especially after South Africa had set itself on the road to democracy, provided opportunities for countries in the region to reduce their levels of military spending and implement disarmament measures, including the demobilisation of former combatants.

These interlinked processes of democratisation and disarmament, which occurred in many countries in the region, had a positive impact on the South African state's threat perceptions, and this lead to dramatic changes in the country's defence and foreign policies and a rapid decline in the defence budget.

Between 1989/90 and 1997/98 the defence budget declined by over 50% in real terms, while the acquisition budget (the Special Defence Account) declined by over 80% in real terms during the same period. In 1997/98 acquisition spending accounted for 20% of the defence budget, down from nearly 60% in 1989/90.

The dramatic cuts in defence spending have had a major impact on domestic defence related industries, which have been forced to downsize and restructure as a result of the cancellation or postponement of defence contracts, resulting in the retrenchment of large numbers of workers since the late 1980's.

During 1990 and 1991 Armscor made representations to Government to commercialise some of its industrial facilities. It was felt at the time that most of Armscor's industrial facilities could be utilised for commercial purposes, while still being available as manufacturing resources capable of supplying the country's defence needs.

On 1 April 1992 Armscor was divided into two separate organisations. A new state-owned industrial company called Denel Pty (Ltd) was established under the Companies Act as a commercial enterprise reporting to the Minister of Public Enterprises. Armscor was thus involved in the production of armaments up until 1992, when its manufacturing capability was transferred in Denel.

Armscor however remained responsible for acquisition management, defence industrial development policy and arms control. Armscor contracted Denel in the same way as it contracted private sector companies. Armscor carried out no manufacturing activities, but remained responsible for acquisition for the South African National Defence Force (SANDF) and, to a lesser extent, for the South African Police Service (SAPS) and South African Correctional Services.

In 1995, as a result of the Cameron Commission reports, and especially the recommendations from the Modise Commission (resulting in a Cabinet Memorandum on 30 August 1995), the roles and functions of Armscor with respect to the import and export of conventional arms were transferred to the National Conventional Arms Control Committee (NCACC).

Two of the three primary roles of Armscor have been transferred (production to Denel in 1992 and arms control to the NCACC in 1995) thus focussing Armscor on acquisition management and the management of certain strategic capabilities on behalf of the DoD through its subsidiary companies.

During 1996, Armscor, with the cooperation of the DoD, conducted an investigation into the roles and functions of Armscor. This investigation made proposals with regard to the management and execution of the DoD's acquisition function. The roles, functions, structure, division of responsibilities, organisational positioning and interface between the SANDF, Defence Secretariat, Armscor and the defence industry were addressed. This

was published as the MODAC 1- 4 reports, which were approved by the Minister of Defence.

The Current Role of Armscor

The South African Defence Review, approved by Parliament in April 1998, addressed the role and function of Armscor in Chapter Nine (Force Structure) and in Chapter Thirteen (Acquisition Management Process). The Defence Review envisages an integrated Department of Defence Headquarters which includes the Defence Secretary, C SANDF and the Chiefs of the Corporate Divisions. Armscor resides outside of this integrated headquarters, though the Chairperson of Armscor reports to the Minister of Defence in the same manner as the Defence Secretary and the C SANDF do.

The Defence Review states that there will be a state corporation as an Acquisition Agency of the DoD, this being consistent with the MODAC 1 - 4 Reports. Armscor, as the designated acquisition agency of the DoD, is today responsible for professional program management and the drafting of tender documentation for the contracting of industry on behalf of the DoD during the execution of armament acquisition programmes. It ensures that the technical, financial and legal integrity in contract management are in accordance with DoD requirements. The DoD and Armscor also jointly oversee industrial development of the industry, in order to support DoD acquisition programmes and the retention of strategic defence technologies and capabilities.

Once projects have been approved by the Armaments Acquisition Council (AAC), Armscor places contracts on industry for project execution. All such contracts are authorised by formal Contracts Authorisation Committees with respect to legal, financial and technical integrity, as well as the integrity of the contractor selection process. The composition of these Authorisation Committees reflect appropriate representation of all relevant stakeholders.

Organised Defence Industry is timeously involved in the acquisition process in order to ensure local defence industry participation and industrial cost-effective solutions for the DoD's requirements. All technical review teams include, where appropriate, members from Armscor, the Defence Secretariat, and the SANDF.

The Armscor Board serves as a decision making board for tender adjudication (Special Defence Account) and ensures that all contractual obligations of project management are in accordance with national procurement legislation and are in the national interest.

The core business activities of Armscor are focussed on:

- The management and execution of Research & Development projects.
- The control and management of a supplier accreditation system.
- The execution of acquisition projects, including quality control.
- The co-management with the Department of Trade and Industry of Industrial Development Programmes to retain strategic defence capabilities and technologies.
- The sale and disposal of SANDF surplus equipment.
- Marketing support and facilitation for the defence industry.
- The management and monitoring of Defence Industrial Participation programmes.
- Functioning as the State Tender Board, as per delegations, on the acquisition of armaments.
- Functioning as the Fund Manager for a number of companies such as the Institute for Maritime Technology, Protechnik Laboratories, Macro Counter Trade International, Hazmat, Alkantpan and Gerotek.

The DoD Transformation Project may make further recommendations to the Minister of Defence to adjust or change the present acquisition approval process as indicated in the MODAC studies. On acceptance by Parliament of the proposals of the Green Paper on Public Procurement, and the final re-engineering of the DoD acquisition function, the Armaments Development and Production Act must be reviewed to reflect the new functions and authority of the Armscor Board and the roles, powers and responsibilities of the DoD's acquisition

Agency.

The transformation of Armscor must be driven by two government imperatives, namely the attainment of efficiency and economy in acquisition management and the fostering of civil control and accountability.

> **Efficiency and Economy**. In order to achieve efficiency and economy, the business processes of Armscor are to be aligned with core Department of Defence business requirements and the maintenance of those specific strategic capabilities which are not possible to create or sustain in the private sector.
>
> **Control and Accountability**. The retention of Armscor as a state corporation will ensure that Armscor will be accountable to a specific and identifiable member of the Executive and can be called to account by parliamentary oversight.

DEFENCE RELATED INDUSTRIES TODAY

Characteristics

Defence related industries comprise various organisations, companies and business units such as:

- Shareholder ownership (JSE listed) companies and their business units.
- Private companies and their business units
- State owned defence industrial facilities and business units such as Denel, and business units of Armscor and the Council for Scientific and Industrial Research (CSIR).
- Research and/or development facilities of organisations such as universities, technicons, CSIR and Armscor, e.g. the Institute for Maritime Technology.
- Test facilities of organisations such as the CSIR, Denel and Armscor, e.g. Aerotek Wind Tunnels, Overberg Missile Test Range, Alkantpan Ballistic Test Range, Paardefontein Antenna Test Range and Gerotek Vehicle Test Range.
- Industrial facilities of the SANDF such as the Simon's Town Dockyard and maintenance depots of the various arms of service.

The firms and companies involved in defence work vary in size considerably. Most have sales of less than R100 million per year, and at least a third have sales of less than R10 million per year. Hardly any of these companies carry out defence work exclusively and for most of them it is a relatively small part of their business.

Table 2.1 Performance of the Four Largest Defence Manufacturers [1996/7]

	REUNERT	ALTECH	GRINTEK	DENEL
Turnover	Rm 4742	Rm 1593	Rm 2044	Rm 3013
Defence as % of turnover	*18%*	*10%*	*11%*	*69%*

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Note
Figures: Rand million in constant 1990 prices. (Figures in italics are in %.)

Cross-contracting and sub-contracting are important features of defence related industries. Although only the larger companies can usually act as main contractors, much of the work is contracted out, to the point where the value added by the main contractor may be a minor fraction of the total value of the project. Much of the value therefore trickles down to smaller companies, including many commercial suppliers which are not considered armaments producers.

Government is the sole domestic client for defence business, and most of its contracts are placed by Armscor. Over 90 per cent of these contracts are accounted for by companies that are members of the South African Aerospace, Maritime and Defence Industries Association (AMD).

Armscor currently has contracts with approximately 700 local firms and companies, which act as contractors, sub-contractors and suppliers of armaments and non-defence goods and services.

Over 80 % of defence work takes place in Gauteng Province, mostly in the Johannesburg/Pretoria area. Other areas of concentration include Durban/Pinetown and Cape Town and vicinity.

SOUTH AFRICAN DEFENCE MARKET

The domestic defence related industries have undergone a dramatic process of downsizing and restructuring since the late 1980's. The industry has become increasingly concentrated, as many small and medium-sized companies have gone out of business, exited the defence market, merged with, or been acquired by larger private sector companies.

The size of the overall defence market, as measured by total Armscor acquisition spending, declined by nearly 70 % in real terms between 1989/90 and 1996/97 with an average decline of 15% per annum. The decline in the size of the market has been reflected in massive reductions in the value and volume of domestic arms production.

Imports are not a large portion of defence industrial inputs, representing about 14% of total purchases in 1996/97 (R483m). This is primarily due to the past requirement for maximum self-sufficiency, and the fact that Armscor imports directly when necessary. The value and share of imports has declined in line with the cuts in acquisition spending. The share of imports averaged 20 % between 1989 and 1996.

The domestic defence market, as measured by domestic acquisition spending, declined by over 50% between 1989/90 and 1996/97, with an average decline of 10% per annum. This decline is directly attributable to the defence budget cuts of over 50 % during this period. Purchases by Armscor from the local defence related industries peaked at R3,6 billion in 1989/90 (1990 Rands), declining to R1,7 billion in 1996/97.

State-owned Denel and three large private sector industrial groups - Altech, Reunert and Grintek, currently dominate the domestic defence market. These 4 companies account for over 90% of domestic acquisition spending.

Denel is the largest defence-related company in South Africa, both in terms of the value of its defence sales, and its dependence on defence sales. Its sales account for nearly half the domestic market. The three major private sector defence-related groups, Reunert, Altech and Grintek, account for the other 40 %. The remaining 10 % is accounted for by hundreds of small and medium firms.

Accurate statistics on the size of defence related industries are difficult to arrive at, as it is often impossible to separate civilian and defence work. According to a survey of AMD member companies carried out in 1996 total South African defence sales (including exports) amounted to R 4 083 million.

Table 2.2: South African Defence Market, 1989/90-1996/97

YEAR	TOTAL MARKET*	*% CHANGE*	*IMPORTS/ TOTAL (%)*	DOMESTIC MARKET +	*% CHANGE*	*DOMESTIC/ TOTAL (%)*
1989/90	6236		*42*	3618		*58*
1990/91	5126	*-17.8*	*42*	2973	*-17.8*	*58*
1991/92	3931	*-23.3*	*21*	3123	*5.1*	*79*
1992/93	3242	*-17.5*	*17*	2696	*-13.7*	*83*

1993/94	3162	*-2.5*	*17*	2625	*-2.6*	*83*
1994/95	2427	*-23.2*	*14*	2093	*-20.3*	*86*
1995/96	2167	*-10.7*	*17*	1808	*-13.6*	*83*
1996/97	1984	*-8.4*	*14*	1707	*-5.6*	*86*
AVERAGE 1989 - 1996		*-14.8*	*23*		*-9.8*	*77*

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Notes
Figures: Rand million in constant 1990 prices. (Figures in italics are in %.)
Source: Armscor; Armscor Annual Report (various years)
* Based on total value of Armscor Acquisition Spending for Departments of Defence, Safety and Security (Police) and Correctional Services (Prisons).
+ Value of Domestic Acquisition Spending

The contribution of defence related industries to the national economy has also declined since the late 1980's. The value of domestic arms production in total manufacturing output has declined from nearly 7% in 1989 to around 3% in 1996, and as a share of gross domestic product (GDP) from 1.5% in 1989 to less than 1% in 1996.

Restructuring, Downsizing and Diversification

Companies involved in defence production have survived during this period of defence cuts by increasing defence and other exports, and by diversifying into civilian production.

Denel and the three large private sector defence-related groups have significantly reduced their dependence on defence sales since the late 1980's. Denel's share of defence sales in turnover was 64% in 1996/97, down from nearly 80% at the time of its formation in 1992.

In a recent AMD survey, defence work accounted for less than 20 per cent of turnover in three-quarters of the companies involved in such work.

Sales of civilian manufactured products by AMD members, as a result of diversification, more than doubled over the period 1992 to 1996: in these companies defence sales accounted for 76% of total sales in 1992 but only 54% in 1996.

Defence Exports and the International Market

The value of defence exports has increased quite substantially as a result of the decline in domestic demand for armaments, and the lifting of the UN arms embargoes against South Africa. The value of exports (in 1990 prices) increased from R163 million in 1990 to R721 million in 1995 before declining to R345 million in 1996.

By 1995, nearly 29% of the defence output of AMD member companies was exported, although a third of these companies were not exporting at all and most companies were exporting less than a quarter of their output.

Table 2.3 Export Permit Values: Comparative Figures, 1995-97.

	1995		**1996**		**1997**	
AREA	***Rm***	*% of Total*	***Rm***	*% of Total*	***Rm***	*% of Total*

Africa	70.96	*8*	175.20	31	106.42	*8*
Europe (Inc. CIS & Israel)	43.67	*5*	107.90	19	253.23	*18*
Far East	91.65	*11*	103.40	18	809.44	*58*
Middle East	477.28	*57*	82.00	15	73.85	*5*
Americas	160.20	*19*	90.60	16	143.37	*10*
TOTAL	**Rm 843.76**	***100***	**Rm 559.00**	***100***	**Rm 1 386.31**	***100***

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Note
Figures: Rand million in current prices. (Figures in italics are in %)
Source: Directorate Conventional Arms Control, Department of Defence

Despite the increases in defence exports between 1990 and 1995, South Africa is a very minor player in the international armaments market. Its contribution to the world trade in conventional arms is less than half of one per cent, and appears to be declining even further. An analysis of the value of defence exports (as measured by the value of export permits) since 1995, is given in table 2.3.

Government actively supports the export of South African defence products and state resources are used to maintain the country's defence export infrastructure. A portion of Armscor's operating subsidy from the defence budget is used to maintain overseas offices, to provide international marketing support, and to assist the participation of South African firms at international defence exhibitions. Ministers also use their overseas visits to promote South African defence products.

The South African defence related industries has followed the global trend towards multi-national defence industrial co-operation. International joint ventures and strategic alliances have been established with defence-related companies in 20 different countries. The UK tops the list, followed by France, and there are a significant number of joint ventures with companies in the USA, Germany and Malaysia.

The Department of Defence and Defence Related Industries

Despite the growing emphasis on the export market, the DoD remains the largest, and in many cases the only, client for defence products and services. In 1996/97 the DoD purchased nearly R3 billion in products and services domestically, which accounted for over 85% of its total acquisition spending. Most of the products purchased are developed to the specific requirements of the SANDF, which funds roughly half the R&D carried out by the defence related industry and therefore owns much of the immaterial property rights. Following a global trend, the SANDF also contracts out a large portion of its logistic and operational support. Defence related industries thus become indispensable to the SANDF's logistic and operational capability, both during times of peace and war.

The DoD believes that domestic defence related industries may help to maintain independence from possible foreign coercion in times of tension. In certain strategic areas, such as electronic warfare and secure communications, and when equipment needs to be developed specifically for local conditions, systems and services are not available on the international market. Preference is therefore given to the procurement of defence products and services from local suppliers, providing such procurement represents good value for money.

A key concept in the acquisition of armaments is derived from systems theory, which defines a hierarchy of systems and subsystems as shown in the following table. Acquisition takes place at all the levels of the hierarchy and each level supplies to the next higher level. The DoD is primarily responsible for system acquisition at levels 8, 7 and 6; Armscor is responsible for acquisition of level 5 systems, while the suppliers in industry are the acquiring parties at the lower levels.

Table 2.4 Systems Hierarchy as used in the DoD and SANDF.

System designation	Level	Configuration Example		
		SA Army	SA Air Force	SA Navy
Operational force	**8**	National Defence Force	National Defence Force	National Defence Force
Combat grouping	**7**	Joint Combat Force	Joint Combat Force	Joint Combat Force
User system	**6**	Operationaly ready regiments, battalions etc with main equipment, facilities, personnel and own logistic support systems	Aircraft, facilities, personnel and support systems of SA Air Force squadron	Naval vessels, facilities, personnel and support systems of Naval Fleet and bases
Product system	**5**	Tanks, infantry fighting vehicles, artillery guns, AA guns, simulators and own logistic support equipment	Aircraft, weapons, flight simulator and logistic support equipment	Ships, submarines, weapon systems, simulators and logistic support equipment
Product	**4**	Tanks, infantry fighting vehicles, artillery guns, AA guns etc	Aircraft	Ships and submarines and platforms
Product subsystem	**3**	Platforms, engines, radars and radios	Engine, airframe and avionics	Hulls, main propulsion systems, combat suite and sub systems
Component	**2**	Instruments, transmitters and recievers	Instruments, turbine blades, undercarriage	Instruments, propellors and sonar transducers, PC boards
Characteristic/ materials/process	**1**	Castings, aluminum, titanium, carbon fibre	Castings, aluminum, titanium, carbon fibre	Castings, aluminum, titanum, carbon fibre

Core Competencies

The major competency of Denel and the three major private sector defence related groups is overall system or sub-system design, development, integration and testing. Most of the actual manufacture and assembly is sub-contracted out to more specialised industries which are part of the country's general industrial base. Many of the systems (such as attack helicopters or main battle tanks) are very complex systems, requiring complex project management and competent design, development, production and upgrade capabilities.

Local defence related industries have developed a strong set of core competencies in the following three main areas, although there is also significant competence in vehicle systems, simulators, unmanned aircraft and logistics:

- **Electronics**, including the guidance systems for missiles, gun control systems for vehicles and fire control systems for the artillery. The major area of competency is in avionics for aircraft and helicopters: many companies are involved in the design and development of avionics sub-systems for fighter aircraft and attack helicopters.
- **Weapon systems**, including weapons for aircraft, helicopters, ships, vehicles, artillery and infantry.

- **Communications**. Areas of competence include secure communications, electronic warfare, radar and information technology.

In part as a result of the arms embargo which made major equipment purchases almost impossible, South African defence related industries are today world leaders in the field of upgrading outdated systems, in many cases resulting in significant exports. It is possible to keep systems in service much longer than their normal life expectancy, through effective maintenance programmes and life extension developments. This enables large reductions in cost to be attained.

Research and Development and Technology

Expenditure on defence research and development (R&D) has declined by more than 70 % in real terms since the beginning of this decade. In 1996/97 R329m was spent on R&D from the defence budget, down from nearly R1 billion in 1989/90 (in constant 1990 prices). Defence R&D spending currently accounts for 5% of the total defence budget, down from nearly 9% in the late 1980's. In the context of these budgetary constraints, local defence firms have been forced to fund an increasing amount of defence R&D from their own sources.

While the cuts in defence R&D spending since the late 1980's have not been accompanied by significant increases in total R&D spending in the South African economy, there has been an improvement in South Africa's innovative activity (as measured by patenting activity) during the same period. This suggests that the crowding out of civilian innovative activity, which may have occurred during the 1980's when defence R&D was at very high levels, may be being reversed.

The National Research and Technology Audit, covering 1996/97, aimed to provide information to be used as the basis for policies directed at increasing the effectiveness of technological innovation as a contributor to productivity, economic growth, environmental sustainability and international competitiveness. Defence related industries were included in this audit.

The survey results indicated a high level of awareness of technologies within the defence related industries, with an emphasis on product technologies. In these industries, 94% of R&D investment was directed towards products (as opposed to processes, support or information), which was higher than in any of the other parts of the manufacturing sector. Only 11% of technology was outsourced, of which 7% was sourced abroad, a very low proportion compared to other parts of the manufacturing sector.

Respondents in defence related industries indicated that 18% of turnover was invested in R&D, considerably higher than any other sector. This was directly a result of research contracts placed by the SANDF, the funding for which came largely from the defence budget. All this money was spent locally, indicating little international co-operation in R&D.

Table 2.5: Defence R&D Expenditure, 1989/90-96/97

YEAR	DEFENCE R&D	% CHANGE	% OF DEFENCE BUDGET	TOTAL SA R&D SPENDING	DEFENCE/ TOTAL (%)
1989/90	985		8.6	2043	*48.2*
1990/91	793	*-19.5*	7.9		
1991/92	580	*-26.9*	7.2	2455	*23.6*
1992/93	467	*-19.5*	6.1		
1993/94	342	*-26.8*	5.2	1831	*18.7*
1994/95	342	*0*	4.8		
1995/96	342	*0*	5.5		
1996/97	329	*-3.8*	5.5		

AVERAGE			6.4		
1989 - 1990		*-13.8*			

-

Notes
Figures: Rand million in 1990 prices. (Figures in italics are in %.)
Source: Armscor; Estimates of Expenditure; SA Science and Technology Indicators (Foundation for Research Development, various years).

It is difficult to accurately estimate the number of jobs linked to the defence industrial activity. However, it is estimated that direct and indirect employment currently amounts to approximately 76 000 people, down from a peak of over 130 000 in the late 1980's. Direct employment amounts to 26 000 including 15 000 in the public sector defence related industries. The dramatic cuts in defence spending have led to a large migration of skills and capacity from manufacturing industry in general and the defence related industries specifically.

The largest defence employer in the country is Denel with over 14 000 employees, while a significant number of small companies employ fewer than 20 people. Three-quarters of defence related industries comprise small, medium and micro enterprises (SMMEs).

More than half of all employees in defence related industries are engineers, scientists, technicians or artisans and the industries are currently staffed at most levels by white, largely male personnel. The lack of gender and ethnic diversity is particularly marked in the middle to senior management levels, as well as in all the technical fields.

VIABILITY OF DEFENCE RELATED INDUSTRIES

The cuts in the defence budget have had a dramatic impact on the profitability of defence related industries. Many firms have gone bankrupt, exited the defence market or been taken over or acquired by other firms. These developments, and the prospect of further cuts in defence spending, have raised concerns about the continued economic viability of defence related industries.

In order to illustrate the declining profitability of defence related industries the financial performance of Denel and two of the large private sector defence related groups (Reunert, Altech) is presented in the following paragraphs.

Since 1992 Denel’s financial performance (in terms of profitability and asset management) and productivity has not been particularly impressive. The poor performance of the company, particularly since 1995/96, has been a result of the severity of the cuts in defence spending, and the failure of a number of large potential export orders, which did not materialise for various reasons.

Turnover has declined in real terms by an average of 1.6% per annum since 1992, while operating profit has declined by an average of 13% per annum during the same period. The company made a net loss (for the first time since its existence) of R72 million in operating profit during 1996/97 and the company’s operating margin (operating profit/turnover) declined from a high of 8.1% in 1995/96 to –2.4% in 1996/97. The company’s net profit declined by nearly 78% in real terms from R442 million in 1995/96 to R95 million in 1996/97 (in constant 1996 prices). The company’s return on assets (net profit/turnover) declined from a high of 6% in 1995/96 to 1.7% in 1996/97.

The dividend that Denel pays to the state, its sole shareholder, has also declined by over 80% from R100 million in 1995/96 to R20 million in 1996/97 (in constant 1996 prices). Denel’s total employment has declined by an average of 2% per annum since its establishment in 1992, and total employment in 1996/97 was 14 200, down from 15 500 in 1992/93.

In terms of productivity, the company’s capital productivity, or capital output ratio (total assets/value added)

declined by an average of nearly 6% per annum and showed no real improvement between 1992/93 and 1996/97. The company's labour productivity or output-labour ratio (value added/employment) declined by an average of 6% per annum between 1992/93 and 1996/97, despite slight increases in 1993/94 and 1994/95. The capital intensity of the company, as measured by the capital labour ratio (total assets/employment) declined quite significantly after 1992 as a result of significant retrenchments and a revaluation of Denel's assets in 1994/95 as a result of the termination of the space programme at Houwteq.

The financial performance of private sector defence related companies such as Reunert and Altech since the early 1990's has also been negatively affected by the severity of the cuts in defence spending. However, both companies are less dependent upon their defence business than Denel, and so have been better placed to endure the impact of the dramatic decline in demand for armaments.

Reunert's turnover has continued to grow in real terms since the late 1980's, despite a sharp decline in 1993 and almost no growth in turnover in 1996. Net profit showed positive growth for most years after 1989, except 1991 and 1997, when net profit declined by 65% in real terms. Reunert's total employment has declined from 13925 in 1990 to 11112 in 1997, a decline of 20%.

Altech's financial performance since 1990 has been less impressive than Reunert's. Both turnover and net profit have experienced real declines in a number of years since 1990, particularly 1996, while employment has declined from 5500 in 1990 to 3307 in 1997, a decline of nearly 40%.

It is highly likely that the financial performance of Denel and private sector defence related companies will continue to be negatively affected if there are further cuts in defence spending, and if companies cannot expand their export markets (defence and commercial) or their domestic commercial business to offset the declining domestic demand for armaments.

The concerns around the continued economic viability of the domestic defence related industries are linked to the need to create jobs, to improve the performance and competitiveness of the manufacturing sector, and to boost exports. In this context the imperative to initiate diversification efforts in the defence related industries has become an urgent economic necessity.

Table 2.6: Denel, Financial Performance, 1992/93-1996/97.

YEAR	1992	1993	1994	1995	1996	AVERAGE 92 - 96
Turnover	3839	3507	3376	3506	3013	
% Change		*-9*	*-4*	*4*	*-14*	***-6***
Operating Profit	231	257	222	285	-72	
% Change		*11*	*-14*	*28*	*-125*	***-25***
Nett Profit	320.0	293.5	347.4	390.2	81.5	
% Change		*-8.3*	*18.4*	*12.3*	*-79.1*	***-14***
Total Assets	6166	5771	4562	4520	4253	
% Change		*-6.4*	*-21.0*	*-0.9*	*-5.9*	***-9***
Operating Margin	*6.0*	*7.3*	*6.6*	*8.1*	*-2.4*	***5***
Return on Assets	*5.2*	*5.1*	*7.6*	*8.6*	*1.9*	***6***
Value Added	2060	1840	1854	1826	1402	
% Change		*-10.7*	*0.7*	*-1.5*	*-23.2*	***-8.7***
Employment (No)	15572	13895	13826	14150	14200	

% Change		*-10.8*	*-0.5*	*2.3*	*0.4*	***-2.1***
Capital - Labour ('000)	395	415	329	319	299	
% Change		*4.9*	*-20.6*	*-3.2*	*-6.2*	***-6.3***
Capital - Output (R)	4.1	3.8	2.8	2.6	3.0	
% Change		*-5.7*	*-28.4*	*-7.4*	*18.9*	***-5.6***
Output - Labour ('000)	132	132	134	129	98	
% Change		*0.1*	*1.3*	*-3.7*	*-23.5*	***-6.5***

Notes
Figures: Rand Million in constant 1996 prices. (Figures in italics are in percentages.)
Source: Denel Annual Report, various years.

The DoD has taken steps to ensure the sustainability of those technologies and capabilities that it regards as strategic, (Chapter 4, para 29 to 46). Initiatives that have been launched to sustain these strategic technologies and capabilities are:

- Restructuring of the DoD budget allocations, in order to increase the present 8% allocation of defence budget to capital equipment replacement to approximately 30% by 2001.
- Restructuring and transformation within defence related industries as well as joint ventures with international partners, as discussed in Chapter 7 will also contribute to the viability of the defence related industries.

Table 2.7: Financial Performance of Reunert and Altech, 1990-1997

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997
REUNERT									
Turnover	1304	1415	1418	1785	1671	2263	2813	2828	2927
% Change	*13.4*	*8.5*	*0.2*	*25.9*	*-6.4*	*35.4*	*24.3*	*0.5*	*3.5*
Nett Profit	73	73	64	71	77	104	112	117	40.5
% Change	*36.1*	*0.8*	*-13.3*	*12.5*	*7.6*	*35.4*	*7.7*	*4.1*	*-65.3*
Employment	13309	13925	13084	13863	13251	15323	15938	12733	11112
% Change	*2.0*	*4.6*	*-6.0*	*6.0*	*-4.4*	*15.6*	*4.0*	*-20.1*	*-12.7*
ALTECH									
Turnover	868	793	815	698	660	694	794	917	1089
% Change	*-7.4*	*-8.6*	*2.8*	*-14.4*	*-5.4*	*5.2*	*14.3*	*15.5*	*18.8*
Nett Profit	100	82	73	72	63	39	38	3	43
% Change	*1.0*	*-18.0*	*-10.5*	*-1.5*	*-12.0*	*-38.3*	*-2.8*	*92.3*	*1374.0*
Employment	5500	4730	4658	4514	3966	3641	3730	3494	3307
% Change	*12.2*	*-14.0*	*-1.5*	*-3.1*	*-12.1*	*-8.2*	*2.4*	*-6.3*	*-5.4*

Notes
Figures: Rand Million in constant 1990 prices. (Figures in italics are in percentages.)

Source: Company Annual Reports, various years.

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top

CHAPTER THREE

ACQUISITION AND TECHNOLOGY MANAGEMENT

INTRODUCTION

The Defence Secretariat was responsible for all defence acquisition programmes prior to its disbandment in 1968 pending the imposition of UN sanctions. The Defence Secretariat provided a measure of civil-control to the defence acquisition process. The establishment of Armscor saw the transfer of this acquisition responsibility to this state corporation existing outside of the public service domain and the DoD specifically. With the introduction of armament sanctions against South Africa, in addition to its main functions of developing the South African defence industrial base and managing defence acquisition, Armscor provided the ability to circumvent such UN sanctions.

Armscor became South Africa's leading arms manufacturer and exporter of all military type equipment. Armscor became the spending authority of all capital folio 1 and folio 2 funds of the DoD. All technology funding and defence industrialisation activities were controlled, directed and funded by Armscor. The Armaments Development and Production Act (Act no 57 of 1968) thus empowered Armscor to be an acquisition agency with Tender Board status, as well as be a manufacturing company. The Act entitles Armscor to undertake *inter alia* the following activities:

- To develop, manufacture, service, repair and maintain on its own account or as the representative of any other person to buy, sell, import or export and, through advertising or otherwise, to promote the sale of, armaments, including armaments required for export.
- To hold, manage, develop, let or hire, or buy, subscribe for or otherwise acquire, or sell or otherwise dispose of, or hypothecate or otherwise deal in, immovable or movable property or whatever kind, including stocks, shares, bonds, debentures and securities of, and any interest in, any company, and where necessary, to act as trustee for debenture holders.
- To procure the registration of the corporation in any country or territory.
- The power of arrest in connection with the safeguarding of property and premises.
- The entitlement to prosecute any person in connection with the export, import, marketing, transit, development and manufacture of armaments.
- The authorisation of any employee of Armscor or authorised person to enter the factory or premises where armaments are developed or manufactured and carry out inspections. Any person hindering such a inspector will be guilty of an offence.
- Armscor may delegate to any person or body of persons any powers conferred on the corporation. A person or body of persons shall not be divested of power delegated by him or it, and may amend or withdraw any decision made in the exercise of such power.
- No person shall disclose to any person any information in relation to the acquisition, supply, marketing, importation, export, development, manufacture or repair of or research in connection with armaments by, for, on behalf of or for the benefit of the corporation or a subsidiary company, except on the written authority of the Minister or of a person authorized thereto by the Minister.
- The corporation may, with the approval of the Minister granted in consultation with the Minister of Finance, raise money with or borrow or obtain money from any person or body at such rate of interest and on such conditions as the corporation may deem fit, issue debentures and, if necessary, provide security or make provisions for the repayment of money so raised, borrowed or obtained.

- Armscor is exempted from provisions of certain laws other than the Companies Act and other law relating to companies.
- With the approval of the Minister granted in consultation with the Minister of Economic Affairs, to lend or advance money to a person or company engaged in any undertaking for the performance or promotion of the activities referred to in 2.1 above, to acquire an interest in, or to provide, or by underwriting or otherwise to assist in the subscription of, capital for such company or to finance it or to facilitate, promote, guide or assist the financing thereof: Provided that if such act is performed in respect of a subsidiary company, the approval of the Minister is not required.

The establishment of the Defence Secretariat post-1994 saw the creation of a Defence Acquisition and Procurement Division reporting to the Secretary for Defence, thus once again instituting oversight and civil-control over defence acquisition.

The Defence Act, as amended, recognises two components of the Department of Defence, namely the Defence Secretariat and the South African National Defence Force. Armscor, as a state corporation with its members employed outside of the jurisdiction of the Public Service Act, is not a component of the Department of Defence and may therefore not be a budget holder in terms of the Exchequer Act. The defence capital budget therefore resorts with the Defence Acquisition and Procurement Division which is accountable for the appropriate management of public monies and resources and Armscor acts as the Acquisition Agency of the Department of Defence.

Distinguishing Between Acquisition and Procurement

Acquisition refers to all those actions that have to be taken to satisfy the need for materiel, facilities or logistic services. It involves, in sequence, requirements planning, operational research, technology acquisition, design and development, operational qualification, quality assurance, industrialisation, initial procurement and commissioning.

Procurement on the other hand, is a much narrower concept that involves contracting for a requirement on the basis of an existing specification or by purchasing, manufacturing, leasing or hiring where the production process has been previously qualified during an acquisition activity. Procurement can be a component of acquisition.

Two Parallel Acquisition Processes

Two parallel processes can be identified that run simultaneously during the acquisition of cardinal defence capital equipment and specifically high value defence capital equipment. The first relates to a wider government process, the second to the DoD's acquisition management process. These two parallel processes are identified as the following:

- Inter-departmental consideration and management of large scale acquisition programmes. These include issues of National Industrial Participation and Financing implications.
- DoD acquisition management.

INTER-GOVERNMENTAL MANAGEMENT OF ACQUISITION PROGRAMMES

High value, cardinal defence capital acquisition programmes require consideration by various government departments due to the strategic and financial implications of such programmes. The acquisition of defence capital equipment establishes long term supply chains and consequently establishes long-term relationships with both defence related companies and governments.

Issues to be considered when acquiring high value, defence capital equipment include:

- Establishing defence, trade and international relations that may endure for periods ranging between thirty and fifty years to provide the necessary maintenance, logistic support and future upgrades of the capital equipment to be purchased for the SANDF.
- Balancing the national technology vision and national technology requirement with the potential transfer of key technologies and capabilities that may occur as a result of such capital acquisition programmes.
- Positioning the capital acquisition programme within the national economic and industrial policies and strategies of government, and specifically the implications of the capital acquisition for developing or reinforcing strategic trading partnerships.
- Engaging in financial programmes that do not place undue constraints on scarce national and financial resources.
- Adequately meeting the military-technical requirements of the SANDF in terms of the equipment so that the SANDF may fulfil its Constitutional obligations, yet in a manner that does not compromise other national priorities and considerations.
- Evaluating the implications of the capital acquisition programme in terms of potential benefits to the South African economy, and the implications from a national budgetary perspective relating to the fiscas.
- Assessing the arms control and non-proliferation implications, with the objective of being a responsible purchaser of defence equipment.
- Counter-trade issues affecting both defence and non-defence economic benefits for local industries and to serve strategic national industrial objectives.

A committee will be established to ensure that an integrated government approach is adopted during defence acquisition programmes. This committee will analyse each intended large scale defence capital acquisitions programme from both an industrial participation and technical perspective for Cabinet consideration. The committee is chaired by the Chief of Acquisitions reporting to the Secretary for Defence, and should consist of the following representatives:

- Department of Defence.
- Department of Trade and Industry.
- Department of State Expenditure.
- Armscor.

DEFENCE ACQUISITION MANAGEMENT

The management of the acquisition of defence capital equipment and defence technology has been described in the Defence Review, as approved by Parliament in May 1998. Extracts from this document are presented below.

Principles Fundamental to Armaments Acquisition

Principles. Civil control and oversight over all defence acquisition programmes will be executed by the Defence Secretariat within the MoD. The MoD will consist of a Defence Acquisition Division at HQ level responsible to the Secretary for Defence. Armscor will be appointed as the acquisition agency to support the MoD Acquisition Division.

Political Accountability. The executive authority and responsibility for defence acquisitions rests with the Minister of Defence. The Minister is responsible for the defence function of Government and is accountable to the President, the Cabinet and Parliament for the management and execution of this function (Defence Review Acquisition Chapter: Par. 32).

Division of Roles. The functions of requirement identification, policy making, selection of successful tender, execution of acquisition projects and acceptance of equipment into service are to be separated. The Defence

Review sets out the following distinctions:

User Requirement. The SANDF is responsible for determining the requirement and for accepting the equipment into service once acquired. The Chief of the SANDF states and specifies the equipment and services required to fulfil the SANDF's obligations, roles, functions and tasks. The Arms of Service participate in the various acquisition planning and approval forums, being the users of the equipment and services (Defence Review Acquisition Chapter: Par. 33).

Planning, Programming and Budgeting. The Secretary for Defence is responsible for planning, programming and budgeting for all acquisitions. The Secretary is furthermore responsible for programming, budgeting and in-year control and auditing of defence expenditure, and also for inter-departmental and industrial co-ordination. The Departmental Acquisition and Procurement Division (DAPD) within the MoD is directly responsible to the Secretary for Defence to execute these functions on behalf of the MoD. (Defence Review Acquisition Chapter: Par. 34).

Policy. The Secretary for Defence is responsible for determining all acquisition related policies and the drafting of related strategic plans.

Control. The Secretary for Defence is responsible for ensuring that all acquisition activities are executed in terms of national objectives and policies. The Secretary is the Accounting Officer of the DoD and performs such duties and functions as may be necessary for civil control of the defence acquisition function, and to enhance parliamentary and ministerial control over SANDF acquisition programmes. The DAPD will be responsible for the management of the overall acquisition process and counter-trade issues. The DAPD will act as the single nodal point from the DoD to Armscor for all acquisition related issues. (Defence Review Acquisition Chapter: Par. 34).

Accountability. Acquisitions are subject to oversight by civil authority, including the executive and parliament. To this end, the Secretary for Defence is accountable to parliament and the executive for all acquisitions, and for all public moneys spent in this regard. The DoD will submit annual and ad-hoc reports to parliament on all acquisition activities (Defence Review Acquisition Chapter: Par. 66).

Execution of Acquisition Projects. The DoD will utilise Armscor as a specialised and professional acquisition agency to support the DoD, once the successful contractor has been identified by the process listed below.

Project Approval. This takes place at the following three levels for non-cardinal and cardinal projects (cardinal projects are defined as those which are worth R80 million and above or smaller projects which may have serious political implications):

Routine Programme. The Armament Acquisition Control Board (AACB), chaired by the Chief of Acquisition, is the third level of control and screens all projects and all other routine programmes in terms of requirements and amendments.

Non-Cardinal Projects. The second level of approval for acquisition is the Armament Acquisition Steering Board (AASB), chaired by the Secretary for Defence. This board approves non-Cardinal projects and screens Cardinal projects. The selection of the successful contractor and monetary commitments for non-Cardinal projects and the screening of the successful contractor and monetary commitments for Cardinal projects is undertaken at this level.

Cardinal Projects. The approval structure for project submissions consists of three levels. The highest level of approval for acquisitions is the Armament Acquisition Council (AAC), chaired by the Minister of Defence. The final selection of the equipment and suppliers, as well as monetary commitments for Cardinal Projects, is undertaken at this level. The AAC will identify major armaments procurement projects that will be presented to Parliament for approval.

Duplication. The acquisition capability should not be duplicated in other DoD structures and processes within

the Department of Defence, but is to be rationalised within DAPD to effect greater efficiency and transparency .

Subsidising the Defence Related Industries. Public funds from the defence budget will provide support to defence related industries on those key strategic technologies and capabilities required in the defence interest. This may take place via specific items such as research and development funding or in a more general sense via trade shows, exhibitions and marketing facilitation. Public funds will not however be used for direct support to make defence related industries more competitive via direct subsidisation, although they will be able to apply to general assistance given by the DTI via its supply side measures and other industrial policy interventions which are available to all South African industries.

A central *stokvel* contribution system to capital projects is to be introduced in the DoD to centralise all control and execution of project or project related activities within the DoD. This *stokvel* will be managed and controlled by DAPD on behalf of the DoD. Armscor as the DoD acquisition agency will be funded from this stokvel account.

TECHNOLOGY MANAGEMENT

The aim of defence technology acquisition management is to identify key strategic technologies on a long-term basis that will support the future needs of the SANDF. Technology management is regarded as the activity of planning, approval, contracting and controlling of technology establishment projects.

The highest level of approval for armaments technology acquisition is the AAC, chaired by the Minister of Defence. Cardinal technology programmes and long-term plans are approved at this level.

The Secretary for Defence is responsible for implementing all national technology requirements, for political control over all projects, and for ensuring that all spending in the R&D environment is in keeping with all government policies.

The Defence Research and Development Board (DRDB), chaired by the Chief of Acquisition, and the Armament Technology Acquisition Secretariat (ATAS) represent the operational level of management, providing detailed structure to all plans and budgets, as well as the management of the execution of technology development projects. The DRDB approves all technology projects and allocation of budgets to all technology projects.

Further organisational structures are deployed by ATAS to ensure involvement of SANDF user groups, as well as specialist representatives from industry in the identification and planning phases of programmes.

ACQUISITION STRUCTURES

The role players within the MoD and the DoD involved in the approval of armaments acquisition are the Minister of Defence, Deputy Minister of Defence, the Secretary for Defence, the Chief of the National Defence Force, Chief of Acquisitions and Procurement, the Chairperson and Chief Executive Officer of Armscor and the Armscor Board.

The DoD Acquisition and Procurement Division (DAPD), consists of an HQ division and is responsible for specialist acquisition and procurement management within the DoD, and ensures the acquisition of all equipment and services on behalf of the DoD. The Chief of Acquisitions and support staff are responsible for directing and co-ordinating all acquisition and procurement activities between the Arms of Service and Armscor. DAPD will serve as the centralised control and centralised execution of all acquisition and procurement activities within the DoD.

The DAPD is the process leader for acquisition and procurement of all Category 1 (Armaments) and Category 2 (Non Armaments) items within the DoD. The Chief of Acquisitions is also the chief policy advisor to the Secretary for Defence and reports directly to the Secretary.

All appointed project teams will be under the joint supervision and control of the DAPD and Armscor, although the DoD has overall responsibility for the project teams and acquisition projects.

As the acquisition agency of the DoD, Armscor is responsible for professional program management and the drafting of tender documentation for the contracting of industry on behalf of the DoD. This is in order to ensure that technical, financial and legal integrity in contract management is in accordance with DoD requirements. The DoD and Armscor will jointly oversee Industrial development of the Industry.

Depending on the size of the contract, projects are approved either by the AAC, the AASB or by the Armaments Acquisition Control Board (AACB).

Once projects have been approved and contractors selected by one of the above acquisition forums, contracts are then placed by Armscor and DAPD on industry. All such contracts are then authorised by formal Contracts Authorisation Committees with respect to legal, financial and technical selection integrity.

The Armscor Board serves as a Tender Board and ensures that all contractual obligations of project management are in accordance with national procurement legislation, and that these decisions are made in the best interests of the state.

Organisations representing defence related industries are involved timeously in the acquisition process in order to ensure local defence related industries participation and industrially cost-effective solutions for the DoD's requirements (Defence Review Acquisition Chapter: Par. 45). All technical review teams will include members from Armscor, the Secretary for Defence, and the SANDF (Defence Review Acquisition Ch Par. 46).

All tender adjudication for armaments will be based on a pre determined value analysis methodology and procedures. This value analysis system will be formulated jointly by the members of DAPD and Armscor. The value analysis system per project must be approved and supported by DAPD prior to any evaluations, and should not be used to exclude previously-disadvantaged contractor and should not limit national strategic considerations which can override technical performance parameters. This value analysis system must be above reproach and should not be a subjective analysis, and will be controlled by the Secretary for Defence.

All other routine acquisition projects (capital provisioning of spares, etc) or programmes dealing with weapon systems and/or equipment which do not fall under AAC, AASB, AACB, or DRDB, must obtain Secretary for Defence (DAPD) approval and support before contracts can be awarded to successful suppliers by Armscor. The principle of a single nodal point between Armscor and DoD through DAPD must be adhered to.

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top

CHAPTER FOUR

STRATEGICALLY ESSENTIAL CAPABILITIES & TECHNOLOGIES FOR THE SANDF

INTRODUCTION

Based on the White Paper on Defence and the Defence Review, the SANDF has defined a comprehensive list of technologies, systems and capabilities it considers 'strategically essential'. The decline in the defence budget has, however, made it impossible to maintain all these required technologies and capabilities within the broader South African industrial base. In the foreseeable future it is also unlikely that armed conflict in the African environment will reach the level of sophistication or intensity requiring certain of these capabilities. The SANDF thus faces the dilemma of reconciling the likely needs of African conflict with the ideal of maintaining a broad spectrum of advanced technologies and capabilities within a very tight budget. South Africa's defence related industries, in turn, must balance the ability to supply the likely needs of the SANDF with the need to compete

effectively in the international market It is thus necessary to focus the state's limited resources on those technologies and capabilities that satisfy the SANDF's requirements, as well as on areas where the domestic defence related industry is internationally competitive.

There is a global trend toward the internationalisation of defence production. Weapons systems are increasingly being developed collaboratively across national boundaries and the ability to independently produce a main weapons system is becoming the exception rather than the rule. This will inevitably impact on the South Africa's defence related industry. Both the SANDF and the relevant industries will have to accept that independence is rapidly being supplanted by interdependence, co-operation and collaboration. This again emphasises the need to focus the state's resources in those areas where independence is truly of strategic importance, or where the industry is internationally competitive. This situation requires the SANDF to prioritise technologies and capabilities in order to make choices within the context of resource constraints.

The dual challenges of supplying the needs of South Africa's security services and of competing successfully in the international market may not be identical or even entirely compatible. While success will only be achieved in the international market if technologically appropriate solutions can be provided at competitive prices, there is a strategic imperative for the local fulfilment of certain defence needs. In other areas local industry will have to compete with foreign suppliers.

The determination of local needs and strategic necessities and the implications for local industry must therefore be guided by South African defence policy, as contained in the White Paper on Defence and the Defence Review. Relevant aspects have already been discussed in this document. This policy has also been elaborated in the strategic planning process of the DoD, which provides important lower level guidelines.

THE WHITE PAPER ON DEFENCE

The White Paper elucidates a broad concept of security, encompassing all aspects of human security, and states unambiguously that the greatest threats to the South African people are non-military (Chapter 2: par. 1 to 5). The analysis of the strategic environment (Chapter 4) indicates that, notwithstanding the uncertainties of a turbulent world, there is no apparent or foreseen conventional threat against South Africa. Instability and inter-state conflict originating in socio-economic factors, however, poses a considerable immediate and long-term threat to the region.

While military means admittedly do not provide a solution to these threats, military deployment is nevertheless often essential to create or maintain conditions in which solutions can be sought by other non-military means. The White Paper provides that `the primary role of the SANDF shall be to defend South Africa against external military aggression' (Chapter 2: par. 11.9, reiterated in Chapter 5: par. 2). The White Paper does, however, acknowledge that `provision will have to be made for the special requirements of internal deployment and international peace support operations' (Chapter 5: par. 3) and that `the acquisition and maintenance of military equipment shall take account of the particular requirements of peace support operations' (Chapter 5: par. 26).

THE DEFENCE REVIEW AND STRATEGIC PLANNING

The Defence Review states that South Africa will employ the following strategies to ensure the protection of the state and its people against external military threats (Chapter 2: par. 4):

- political, economic and military co-operation with other states,
- the prevention, management and resolution of conflict through non-violent means, and
- the deployment of the defence force (implicitly in a directly defensive role) as a measure of last resort.

The tasks of the defence force relating to self-defence are categorised under four broad headings (Chapter 3: par. 5, expanded in Chapter 8: par. 3):

- Defence against external military threats.

- Defence against internal threats to the constitutional order.
- The promotion of regional security.

Only contingencies related to external military threats against South Africa are, however, considered to fall within the primary function of the SANDF. The force design subsequently approved in the Defence Review is based on the core-force principle and is intended to provide defence against a range of short-term contingencies, to provide early warning of conflict or crisis and to provide a nucleus for future growth (Chapter 3: par. 7). The secondary functions will be fulfilled chiefly with the capabilities vested in the core force but, as in the White Paper, it is acknowledged that these may have to be expanded accordingly (Chapter 3: par. 9.7-9.8).

In the analysis of contingencies (Chapter 3: par. 20 - 36) major contingencies like invasions and neutralising attacks are categorised as highly improbable but still requiring consideration. Defence against such high-level contingencies is, however, un-affordable within present budgetary limits, despite the considerable impact the higher level contingencies would have. The recommended growth core force design is accordingly based on lower level contingencies.

The Defence Review manifests a tension between the primary role orientation and the recognition of current realities. This is evident in its acknowledgement that capabilities required by the core force may have to be augmented to fulfil secondary functions. It also pragmatically accepts the lower level contingencies as a basis for force design in response to budgetary restrictions. It is evident that, notwithstanding the policy of primary function orientation, the realities of the environment - political and operational - are inducing the DoD to adopt an ever more pragmatic approach. This trend has important implications for force design as well as the design of force structure, support and technology requirements.

DEFENCE SCENARIOS

Global Developments in Defence

The defence debate in the developed world is currently dominated by the concept of a `Revolution in Military Affairs' (RMA) brought about by the general availability of advanced technology. Proponents of the RMA argue that developments in technology, particularly in the fields of sensors, precision guidance and command, control, communications, computing and intelligence (C4I) have enabled an ability to observe the battlefield with high resolution in real time, co-ordinate actions and deliver precision firepower as never before. This is held to herald a revolution in the organisation of military forces and in the conduct of war. In its extreme form - cyber-war - information becomes both goal and target, and bloodless combat would be waged against the informational infrastructure of the opposing state or society.

While these developments in military technology may have a profound effect on the future conduct of war between technologically advanced states, sceptics argue that the theoretical value of the RMA is diluted and perhaps even negated under certain conditions. More specifically, the vast majority of wars since the Second World War have been fought by or against non-state entities and there is a significant body of opinion that this reflects a general trend away from inter-state toward intra-state or sub-state warfare. Much of the precision and sophistication of RMA weaponry is held to be ineffective or irrelevant against unsophisticated enemies, in guerrilla or urban warfare and in difficult terrain. On the other hand, the availability of real time remotely sensed information can be a real force multiplier, even against unsophisticated enemies.

RMA technology may thus be only partially applicable in the most prevalent manifestations of war. To establish which advanced technology would be applicable in future African conflicts is thus a question of critical importance. Moreover, an over-investment in inappropriate high-technology weaponry may drain funds away from those capabilities required to fight the actual wars of the future.

Conflict in the African Scenario

15. In order to refine and contextualise the force design, the DoD has formulated scenarios based on an appreciation of global, regional and domestic trends and realities. These scenarios, while developed independently, agree with and expand on the environmental analysis of the White Paper on Defence. The scenarios also highlight certain environmental trends, leading to a number of critical assumptions for defence planning. These critical trends and assumptions are:

- The global balance of power will remain relatively stable, though subject to evolutionary change, for several decades. A sudden global re-polarisation is not foreseen.
- There will be no major aggressive projection of military power into sub-Equatorial Africa by foreign powers for the purpose of conquest or occupation.
- African conflict, rooted in non-military factors, will remain primarily intra-state, although inter-state conflict of a limited scale and intensity is by no means excluded. Inter-African interventions and support to favoured parties by neighbouring states will remain a common feature. Foreign interventions will also take place. These may include anything from peace support operations sanctioned or endorsed by the United Nations to unilateral interventions to extract foreign nationals, protect interests or aid a threatened government.
- African countries will not, even with sustained positive economic growth, be able to afford and support substantial conventional military capabilities for several decades.
- In the absence of ideological imperatives, large donations of arms to African countries by foreign powers are unlikely.

African conflict is therefore expected to manifest itself mainly as civil unrest, domestic insurgencies and civil war, sometimes supported by sympathetic states in the region. The instability or collapse of states could result in incursions of armed bands into neighbouring territories, with or without the sanction of their government, to support a favoured party, pursue rivals or simply to loot and pillage. Such conflicts may be extremely destructive and lead to large numbers of displaced people and refugees.

At the inter-state level, there will be instances of protracted inter-state tension and low-key military exchanges across borders, punctuated by flare-ups of more intense localised military activity including limited cross-border incursions. Such conflict will not, however, exceed the level of limited war. It is also the kind of conflict where some technologies central to the RMA (like cyber-war or precision guided weapons) are held to be irrelevant or ineffective.

The Dilemma of South African Defence Planning

The realities of the African environment, as reflected in the environmental analyses of the White Paper and Defence Review and in the scenario analysis, contrast starkly with global developments in military technology and the capabilities of the South African defence related industrial base. The nature of warfare in an African conflict will differ sharply from warfare between developed countries. In addition to these factors, new threat patterns include the following:

- Piracy.
- International terrorism, including the emerging threat of the use of weapons of mass destruction.
- International crime syndication.
- Organised cross-border crime.
- Threats to military computer and management information systems.
- Threats to off-shore assets, examples being embassies, ships and aircraft.

The resource and technology base of advanced post-industrial information-based societies enables warfare involving a wide range of technologies, but the emphasis is on high technology weapon systems (including the capabilities envisaged by proponents of the RMA) and the conduct of precision operations. While the capabilities of less developed societies are more limited and certain high technology capabilities are excluded, the emphasis is still toward the high technology end of the more restricted spectrum. The mode of warfare

might involve large forces with a mix of old and new equipment, perhaps even weapons of mass destruction, to conduct conventional operations.

The limited industrial and technological base of less developed societies, however, means the mode of warfare of such societies favours low intensity operations utilising unconventional, para-military and conventional forces with decentralised command networks to conduct political and military attrition operations. The technology spectrum is further narrowed and the emphasis is toward the basic end of the spectrum.

The dilemma facing the SANDF and the local defence related industry is that their capabilities are inclined toward the high technology orientation of the developed countries, while the African environment is characterised by serious developmental backlogs. Most of Africa will, even under the most favourable conditions, take several decades to develop an industrial and technological base even approaching that of a developed country. Until that base is established, advanced military capabilities will not be sustainable.

To configure the SANDF for the mode of conflict of a developed country would therefore be inappropriate to African realities. Under present budgetary restrictions it is also un-affordable. The ideal would thus be to acquire from the local defence technology base only those advanced technologies that are appropriate to and have a distinct force multiplier effect in lower level conflict, and as needed to combat new threat patterns. Defence related industries face the added complication that, in addition to supporting a hybridised defence force, they must compete in the high-technology markets of the developed countries. Again, however, the ideal would be to focus limited resources in those areas where high technology applies to all levels of conflict, including the tasks anticipated by the SANDF.

THE SANDF'S REQUIREMENTS

Factors affecting the SANDF in the Future

The following factors, which are spelt out in the White Paper on Defence, initiate the core force approach:

- Due to the imperatives of the RDP, defence spending has to be kept to an appropriate level.
- There is no foreseeable major external military threat to South Africa in the short- to medium-term.
- The possibility of lesser military contingencies cannot be ruled out; parts of the world and the Southern African region are politically unstable and the long-term future is necessarily uncertain.
- While the political dimension of conflict normally develops over a long period, the features of modern weapon systems (such as range, fire power, flexibility, mobility, destructiveness and speed of deployment) make it possible to project military force relatively quickly.
- Defence capabilities and expertise that are lost may take longer to re-establish than the period in which a military threat can emerge. Major weapon systems may take up to 15 years to develop and commission, and combat leadership needs many years of experience and training. Start-up costs for acquiring such systems and expertise are high.
- A credible conventional deterrence is a proven way of preventing aggression. It is a prudent means of preventing the hardships and loss of life associated with armed conflict.
- At the same time, the establishment of a peace-time force with a non-threatening posture will contribute to confidence-building in Southern Africa.
- The SANDF will be required to participate in regional defence arrangements; to engage in peace support operations; to co-operate with the SAPS in the maintenance of law and order and border protection in the short- and medium-term; to restore law and order in exceptional circumstances; and to support the civil authority in various secondary tasks.

The SANDF's Core Force Capability

The White Paper on Defence provides that a core defence capability includes a balanced and sustainable

nucleus with the following features:

- The ability to deal with small-scale contingencies of a short-term nature;
- The ability to deal with a range of contingencies;
- The ability to expand the size of the defence force to appropriate force levels within a realistic warning period should the threat situation deteriorate significantly;
- The maintenance and, where necessary, the adequate and appropriate upgrading or replacement of equipment and weaponry; and
- An effective intelligence capability to ensure early warning of potential conflicts and crises.

A force design with the ability to execute the above tasks in an African environment would, in addition, have to conform to the following requirements:

- Comprehensive capabilities are required at an appropriate level including land, air and maritime capabilities, addressing the functions of mobility, surveillance and firepower.
- The focus should be on balanced land, air and maritime components.
- The emphasis should be on light, mobile forces, with a limited heavy support component. Air and sea mobility is essential for stability projection.
- The technology level should be appropriate, driven by affordability and cost-effectiveness.
- The force design, structure and support capabilities must enable credible stability projection - this implies using external lines of communication and organisational support.
- The design must take due cognisance of new threat patterns, as listed earlier, and the corresponding high-level-technology available to non-state actors.

This differs from a force design, structure and support concept based on self-defence against external aggression by a medium or major power in several important aspects, especially when peace support operations are taken into account:

- The emphasis is on light, mobile forces rather than armour and heavy artillery.
- Conventional air defence requirements are limited since the air capabilities, particularly stand-off capability, of likely opponents will remain limited for some time. Efficient defence under these conditions remains essential, however.
- The control of South African airspace, aimed at effective and efficient border control, is extremely important to combat the emerging threat of organised cross-border crime.
- Air mobility and sea-lift is vital.
- The ability to maintain long external lines of logistic support is essential.
- The ability to operate away from main bases and maintain equipment far from support infrastructure is vital.
- Logistics, medical support and engineering services assume an even more prominent position.
- The ability to protect own forces and assets from attacks while deployed far away from any supporting forces and while assuring a defensive posture is essential. Any losses seriously jeopardise the credibility of a peace support operation.
- The ability to independently sense the movement and intent of warring parties in an unfamiliar setting, far away from own fixed infrastructure, is very important. From this data information must be extracted, distributed, processed and used in an efficient command and control system. In addition, it is important to record this information in such a way that it can be used to apportion blame and, if necessary, respond appropriately. Since peace support operations are multi-national in character, the requirements outlined above do not have to be met entirely or exclusively by the SANDF.

The Expectations Placed on the SANDF

The expectations of the White Paper, the Defence Review and subsequent scenario planning of the SANDF are that the defence force should be equipped and ready to carry out the following tasks:

- The SANDF must have an affordable and sustainable force structure appropriate to its peace-time role and capable of expanding timeously to meet defence contingencies which may arise in the future.
- The SANDF must maintain the necessary systems and expertise to ensure flexible and responsive defence for low-risk defence contingencies which may arise in the short-term.
- The SANDF must maintain effective intelligence and early warning capabilities to enable it to respond timeously to changes in the strategic environment.
- The SANDF must provide a conventional military deterrence, which demonstrates the capability and political will of the state to defend South Africa against aggression.
- The SANDF must maintain and develop the capabilities and skills required to contribute to regional security.
- The SANDF will comprise a relatively small regular component, backed up by a sufficiently large part-time component. This structure is cost-effective and will promote regional confidence.
- The SANDF will perform its secondary functions chiefly with its core defence capabilities. Additional force structure elements may have to be added and funded for functions such as peace support operations and deployment in co-operation with the SAPS.
- Similarly, the SANDF will rely on its core defence capabilities if employed against internal threats to the constitutional order. Additional force structure elements may be required according to the circumstances.
- Certain military industrial capabilities must be maintained to support local defence requirements.

SANDF Capabilities and Requirements

From an analysis of the requirements stated in both the White Paper and the Defence Review, and bearing in mind South Africa's potential involvement in peace-support operations, the following requirement for capabilities and equipment exists:

- Logistic support over long distances.
- 28.2 Field equipment that can be maintained and repaired far away from base.
- Precision re-supply from the air in hostile terrain.
- Advanced vehicles protected against rocket-propelled grenades, landmines, small arms and cannon fire.
- Precision weapons to defend against attack from anti-air artillery.
- Counter battery, mortar and rocket radar.
- Electronic and border surveillance systems, including audio.
- Electronic countermeasure systems against communications systems and shoulder launched surface-to-air missiles.
- Wide area, high resolution observation systems in the optical, infrared, radar and communication bands (Examples are long endurance manned aircraft or remotely piloted vehicles equipped with synthetic aperture radar, infrared and optical sensors, electronic support measures and communication and intelligence systems)
- Command and control over widely dispersed forces, using long range, independent, secure communication channels.
- Means of enabling the emplacement, sustenance and extraction of observers.
- Navigation, positioning and range-finding.
- Technologies for the self-protection of aircraft, ships, vehicles and personnel. (This may range from advanced electronic warfare and infrared protection systems to intruder alarms).
- Protection of CMI systems.

- Effective monitoring of borders: land, sea and air.
- Medical support.
- Appropriate clothing.

CATEGORISATION OF SANDF REQUIREMENTS

The DoD currently classifies SANDF requirements in three categories, namely strategically essential, cost effective local sourcing and export, and non-strategic capabilities. The first category, strategically essential, is however defined in such wide terms that the majority of systems and capabilities fall within it at present. The nature and characteristics of these key technologies and capabilities are:

- They have to be few in number, for practical and financial reasons.
- They have to be very specific and well defined and should give industry a clear idea of where resources are going to be applied.
- They have to be realistic within the context of South African economic capacity and resource constraints.
- They may not solely have a defence application but may also have significance for other non-defence applications as well.

It is therefore necessary to reduce the broad and ill-defined current categorisation to just two categories for the purposes of enabling prioritisation in terms of importance and resource constraints. These categories are:

Strategically Essential. Technological or logistical capabilities are classified ‘strategically essential’, if they potentially satisfy a unique environment-dependent need which cannot be satisfied through procurement of standard equipment. This includes technologies which can provide an operational winning edge, or which ensure self-sufficiency in areas for which high-priority operational requirements exist. These capabilities can ensure faster turnaround times for the servicing or upgrading of systems and battle damage repairs, and can lead to import substitution resulting in foreign exchange savings, local employment and export opportunities.

Non-Strategic Capabilities. Other components, sub-systems and systems are not considered strategically essential can be sourced either locally or on the international market.

a. **International Sourcing**. In the case of armaments sourced on the international market, the domestic defence industrial capability should be able to understand and support these systems, in order to enable informed specification and selection, and to maintain and upgrade them locally with support from the overseas supplier.

b. **Domestic Sourcing**. Due to an already established local capability, or where South Africa has a global competitive edge, certain niche systems are more cost-effective, over the life cycle of the system, to source locally rather than to buy from foreign suppliers.

The latter category of requirement, Non-Strategic Capabilities, is fulfilled through the usual acquisition and technology management processes. Technologies and capabilities which are regarded as being strategically essential have been identified, and for these, programmes to sustain the technologies or capabilities within South Africa will be maintained or established.

STRATEGICALLY ESSENTIAL DEFENCE TECHNOLOGIES AND CAPABILITIES

Taking into account the list of requirements as reflected in the Defence Review and current environmental realities and resource limitations, choices have had to be made and as a result five technologies and capabilities are identified. They are common to the mode of warfare of both advanced and underdeveloped countries and are also common across the four Arms of Service of the SANDF. The following are considered strategically essential:

- Logistic support, repair and maintenance of equipment and systems
- Systems integration
- Command, Control and Communication systems
- Sensors, signal processing and data processing
- Combat systems software and support.
- Simulation systems and war gaming.

Logistic Support, Repair and Maintenance of Equipment and Systems

Logistic support, repair and maintenance capabilities consist of a wide variety of skills, techniques, processes and facilities for the manufacture of parts, components and consumables, storekeeping, supply, documenting and record keeping, as well as the test, evaluation, analysis, servicing, repair, modifying and quality assurance of military systems.

The SANDF has subcontracted nearly all of its logistic support base to industries doing defence work, primarily due to the fact that the SANDF does not have, and is not likely to have, the skills necessary for these logistic services. The current industry role of maintenance, logistic support and battle damage repair will assume a greater prominence. Defence forces internationally cannot afford to retain scarce and therefore expensive technical skills in the abundant way they used to. It has become sensible, in terms of economy of scale, to locate such skills in clusters within industry and outsource major maintenance and support to such industries. Without these industry capabilities the defence force would be completely inoperable, particularly in the a time of national defence.

These technologies and capabilities are primarily situated in the industries associated with the major systems in use by the SANDF, e.g. the aeronautics industry for military aircraft, the vehicles industry for military vehicles, the electronics industry for radar, communication and other military electronic systems, the ammunition industry for weapons, etc.

Due to South Africa’s geographic position it is essential, and generally cost effective, to be self-reliant in the maintenance and support of major weapons systems, including battle damage repair. In the past, all new major system purchases, especially those procured from overseas suppliers, have included the establishment of a total logistic support base in South Africa, together with the necessary training.

As these services are required throughout the life-cycle of weapons systems, there will be ongoing contracts to the defence related industry for the supply of these services. These ongoing contracts will sustain this strategic capability.

Systems Integration

Systems integration is the ability to design, specify, procure, assemble and test the sub-systems, their interfaces and the resultant major system. It consists of specialised know-how, skills and facilities, in which systems engineering is the specialist engineering profession which is found primarily in the past and present local suppliers of major systems.

In future, it is likely that the majority of major weapons systems will be procured from abroad. However, it is essential that the capability to integrate locally developed and foreign sub-systems into these major systems and to adapt, modify and upgrade such systems to meet the unique local user requirements, is retained. To do this effectively, it is necessary to have a local systems integration capability for major weapons systems.

There is currently little systems development activity contracted by the DoD to the defence related industry, and hence little work for systems integration. There will, however, be system integration projects associated with major weapon systems being considered by government. e.g. the corvette programme will entail the integration of a possible local combat suite. The ongoing retention of these capabilities across the spectrum of all major

systems, will require some technology and capability retention.

Command, Control and Communications Systems

Command, Control and Communication (C3) Systems are considered strategic by the military. Without these any battle, conflict or operation, (e.g. peacekeeping support or emergency) will be unsuccessful. It is therefore essential to have total control over the technology, supply and operation of the software and equipment, which must also conform to the unique SANDF organisational doctrine and tactical requirements. C3 systems consist of hardened, robust, reliable and secure communications equipment, networks, and supporting infrastructures. The capability to design, develop, manufacture, and maintain such systems are found in the South African electronics and software industries.

This is a strategic area that has limited export potential or commercial application. At present some technology retention projects are in operation.

Sensors, Signal Processing and Data Processing

Intelligence gathering, electronic warfare, electronic countermeasures and precision guidance of weapons are essential military capabilities on the modern electronic battlefield. The key technologies in these capabilities are sensors, signal processing and data processing. These technologies, which generally cannot be procured through normal channels, and which each defence force requires its own unique codes, capabilities and technologies make them strategic. It is one of the areas where secrecy still gives advantages on the battlefield.

The range of sensors, signal and data processing technologies are quite extensive and consists of items such as radar, sonar, acoustic, infrared, microwave, laser, radio, fibre-optic, and electronic sensors and equipment. The ability to design, develop, manufacture, modify, upgrade and maintain such equipment and systems locally is essential. There exist some technology retention projects, as this strategic area has limited export potential or commercial applications, due to the secrecy of the technology needing to be retained.

Combat Systems Software and Support

Developments in computer and software technologies are currently far more rapid than in other defence technologies. Weapons systems have long life cycles and therefore will require upgrades as new technologies become available and user requirements change. Combat systems software and support have therefore become a strategic technology and capability..

This technology and capability resides in the electronics and software industries where it does have some export and commercial application potential, but still requires some assistance to ensure the technologies are retained.

Simulations and War Gaming

The quality of the SANDF’s training will be a major determinant of the SANDF’s future effectiveness in executing its defence function. The impossibility of duplicating actual combat situations for training purposes and the immense cost and physical danger of conducting live field exercises, make simulation and war gaming vital tools for preparing soldiers, both on a single service and a joint basis. They are invaluable for teaching combat drills and procedures and are essential for the evaluation of doctrine, operational concepts and command and control concepts.

> **Simulations**. Simulations vary from simple mechanical or electronic aids to teach basic skills and coordination to soldiers, to computer-driven systems that enable the development of complex skills such as flying an aircraft or air combat manoeuvres against an opponent in a linked

simulator.

War Gaming. War gaming may range from board and sand-box games to sophisticated computer controlled systems that enable the simulation of combat between imaginary forces of opposing command cadres. The level of desired complexity and realism are the main determinants of cost.

A local simulation and war gaming capability is considered to be of strategic importance due to the following two criteria:

- It is important to understand the technicalities and mechanics of simulation and war gaming in order to be able to develop and tailor such systems to own specifications.
- The maintenance and running of complex simulations and war games invariably requires technical support. Due to confidentiality requirements, local support is therefore essential if such tools are to be used to exercise and evaluate SANDF strategies, doctrines, operational concepts and battle plans.

A DEFENCE TECHNOLOGY BASE

Technology can be defined as any knowledge, process or technique which, when used, will increase effectiveness to achieve a specific goal. In the case of the defence technology base (DTB), the goal is to effectively support the DoD (specifically the SANDF) in the execution of its various roles. This support is mainly of a scientific and engineering nature.

The Role of the Defence Technology Base

The primary role of the DTB can be summarised as:

- Providing technical support to the DoD, enabling it to be a knowledgeable purchaser during acquisition projects.
- Providing technical support to the DoD, enabling it to be a knowledgeable user (operational test and evaluation, training, force preparation, intelligence gathering and interpretation and operations).
- Ensuring continued effectiveness of military systems, while minimising the cost of ownership by performing pre-planned maintenance, logistic support, and modifications to improve reliability.
- Developing equipment with unique capabilities or, when conditions or doctrines change or equipment becomes obsolete, by continued product improvements or upgrades.
- Providing equipment to satisfy unique requirements.
- Providing strategic independence in key strategic areas, or certain niche areas, by enabling independent South African military product development, manufacturing and commissioning, thereby reducing supply vulnerability and improving the probability that special, differentiating features remain secret.

The Importance of the Defence Technology Base

The retention of a local DTB is of direct importance to the defence of South Africa for reasons explained above. The importance of retaining the appropriate technological capabilities at the appropriate level in the national DTB can be classified as follows:

Military-strategic. From a military-strategic point of view, the defence technology base is an important key asset. The aim of the DTB is to help ensure the supply of strategic military equipment and services to the SANDF in times of national defence.

Military-operational. From a military-operational point of view, a local DTB has important operational advantages for the SANDF. These fall into three categories:

Technological advantages. Having access to a local capability, which is able to

implement unique solutions and to keep equipment updated to perform optimally under changing conditions, ensures that a technologically based winning edge over adversaries is possible.

Tailor-made equipment. Southern Africa has unique climatic, geographic, demographic and doctrinal circumstances, requiring in some instances tailor-made equipment.

Logistic support. All armaments, whether procured overseas or locally, require cost-effective logistic support throughout their operational life. A local capability is the only guarantee that this support will be available when required.

Socio-economic importance. From a socio-economic point of view, the DTB contributes significantly to the general standard of technical sophistication of the national industrial base and therefore its ability to produce high value-added goods and services.

STRATEGIES FOR RETAINING STRATEGICALLY ESSENTIAL DEFENCE TECHNOLOGIES AND CAPABILITIES

It is neither affordable nor necessary to strive for complete self-sufficiency in armaments production and all the technologies to support it. However, the SANDF requires that in certain strategic areas, limited self sufficiency must be retained and maintained and that in others, the SANDF needs to remain an informed buyer and user of equipment.

Where the retention of the strategic technologies and capabilities is required, but is not viable on its own, either in the private sector or the public sector, a number of alternatives are to be used for their retention. This is particularly important to enable the DoD to retain a balanced core technology base to match the core force concept defined in the Defence Review. Where required by technical, economic or political considerations, special organisational solutions have to be pursued to retain these strategically important technologies and capabilities.

There are a number of different strategies that can be used to retain technologies and capabilities. These are discussed below.

R & D Projects in Industry Carrying out Defence Work

The high-risk nature of defence equipment development programmes, coupled with the current world-wide decline in the production demand for such equipment, results in a very high ratio of development to production costs. Consequently, the funding of defence R&D development programmes by industry is highly unlikely. If the technologies are required, then the R & D will have to be funded by the customer.

Development times for major weapon systems range from four to eight years, followed by production and commissioning for an operational life of a further 15 to 20 years, before replacement or life extension is required. These long lead times shape the long-term relationship between the DoD and defence related industries. The DoD’s commitment to defence related industries is furthermore based on the reality that skills and technology age and become obsolete (often at a much faster rate than the wear and tear on machines), unless they are continuously and consciously renewed through specific technology development efforts.

A co-operative effort between the DoD, identifying future needs for technology (requirement pull) and industry, identifying the future capabilities and opportunities (technology push) is needed. This is provided by technology development programmes, also enabling industries doing defence work to export technologically competitive products.

Cardinal Technology Projects

The DoD will support defence related industries in running a limited number of long-term core programmes to enable it to maintain the necessary width and depth of engineering and production skills to produce products for local use and export in some carefully selected niche areas, and to provide logistical support.

Advanced Technology Demonstrators

In a small number of selected areas where strategic independence is required or where unique requirements exist, important technologies will be maintained at an advanced level in defence related industries through the design and development of advanced technology demonstrators.

This requires continuous development and upgrading of prototypes of new weapons systems with state-of-the-art technology, without necessarily going into full-scale development or production, unless there is a need for the replacement of equipment due to age or obsolescence, or for force-expansion.

Centres of Expertise

The management of long-term strategic interests such as national defence technology development programmes, may require the selection of `preferred suppliers' and `centres of expertise' to achieve the necessary long-term commitment from both the state and industry to build up and maintain certain levels of expertise at a level above a sustainable minimum.

Defence Evaluation and Research Institute (DERI)

Government will consider retaining strategic, non-profitable facilities with limited commercial application in the public sector. This includes specialised defence research and development facilities, test ranges and test laboratories. Technology development in the defence manufacturing industry needs to be driven by military-technical considerations and the retention of facilities which are not able to be privatised due to unviability, will be considered.

Technology developments which are of strategic importance to the SANDF and the defence related industries, will be retained with public funding at an appropriate defence evaluation and research institute (DERI). The following main features of such organisations can be identified through international comparisons:

- A specific budget exists in the DoD for funding the DERI. Work is formulated in terms of projects, and payments are made upon the achievement of agreed milestones to facilitate effective management.
- DERI's usually comprise at least a core of civilian technical experts who are specialists in their fields and who have made their careers as technologists or scientists in that field.
- DERI's perform a significant amount of leading edge, high risk research, in addition to subcontracting the local industry in a nationally co-ordinated programme.
- They are not considered to be part of the defence related industry, but often place contracts on it for specific R&D. They retain their independence from industry.
- They have close contact with the end users in the military, either by partial staffing with military personnel, or by structural relationships with the DoD concerned.
- They manage high-technology military contracts placed on defence related industries, and are considered to possess sufficient technical insight to assess the merit, relevance and conformance of project proposals and reports.
- They often undertake performance evaluation of equipment and procedures as part of their role. This includes participation in acceptance testing and certification of equipment.

Government will consider establishing a South African DERI with the following roles:

- Technical support to the SANDF.

- Operational support for the SANDF.
- Acquisition support to the DoD.
- Test and evaluation.
- Focused research and development.
- South African military product development and maintenance.
- Technical support for other state institutions, especially the SA Police Service.
- Support to the RDP.

Acquisition Policies

Acquisition and procurement policies are set out in Chapter 5, under Acquisition and Technology Management. Acquisition policies should take into account the strategic technologies and capabilities required by the SANDF when awarding contracts.

Outsourcing

The SANDF has already implemented a policy of outsourcing, particularly in the facilitation of logistic support. This policy will be extended in some of the remaining areas of activity to support the retention of strategic capabilities and technologies. DAPD will be responsible for all outsourcing of the DoD requirements.

Diversification

By giving support to diversification, technologies and capabilities which are strategically essential may be retained at a lesser cost.

Defence Industrial Participation Schemes

Defence industrial participation (DIP) programmes are structured to provide direct support for a sustainable indigenous defence related industries as required by the SANDF. Under these programmes all defence imports above $10m value are required to have at least a 50% local industrial participation in the defence related industries. This is in addition to the participation requirements stipulated in the National Industrial Participation Policy (NIP) administered by Department of Trade and Industry .

Defence industrial participation programmes will be particularly orientated to supporting those technologies and capabilities which have been identified as being strategically essential to the SANDF.

Export Marketing Facilitation

Some of the strategically essential technologies and capabilities should be supported by government assistance in facilitating the export of those skills, technologies, products or. This will be in the form of export marketing assistance, which in turn will enable the retention of the skills, technologies and capabilities.

STRATEGIES FOR PRIORITIES AND CHOICES

While the strategically essential technologies and capabilities that are relevant to the situation today have been identified above, in time these may change. The SANDF will review these on an annual basis and this review

will form part of the annual acquisition report to Parliament. It is important to have regular reviews, particularly as new forms of conflict arise and new technologies are developed. The DoD must indicate to industry what its strategic choices are and where it aims to invest strategically.

With the strategic technologies and capabilities having been identified, it is a matter of choice as to how they should be retained. The decisions should be made by the DoD in co-operation with other relevant government departments, such as the Department of Trade and Industry and Department of Arts, Culture, Science and Technology, as other departments may be able to optimise the resources needed.

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CHAPTER FIVE

MARKETING AND EXPORT FACILITATION

INTRODUCTION

The decline in capital spending by the DoD and the consequent decline in the purchase of defence products, services and R&D spending have made it uneconomic to maintain the strategic technologies and capabilities required by the SANDF within the local industrial base. Internationally, companies export in order to achieve efficient economies of scale and they use exports to generate additional funds for R&D. Exports also assist companies to become internationally competitive. The export base can also be expanded by entering into joint ventures with international partners.

The DoD has accepted that it will have insufficient funding to maintain the required strategic technologies and capabilities within local industries. In order to survive, the local industry will have to become internationally competitive. To sustain or develop the required technologies and capabilities, the local defence related industries will have to increasingly rely on exports and joint for funding.

The White Paper on Defence recognises this principle, and states explicitly that the defence related industries must have access to international markets in order to facilitate cost-effective performance and to reduce the unit costs of producing items for the SANDF (Chapter 8: par. 4). Government will support the export initiatives of the defence related industries by permitting it to contract and honour obligations which have been duly approved. (Chapter 8: par. 11).

REQUIREMENT FOR GOVERNMENT ASSISTANCE AND SUPPORT

Due to the nature of defence business and related control measures, armament user systems, at the level of product subsystem and above (see Table 2.4 in chapter 2), can only be sold to governments. These governments will only buy from those countries which they are confident will support the systems over its full life-cycle. The life-cycle of a system could be as long as 50 years and many purchasing countries also require government guaranties. Departments of State dealing in foreign affairs therefore play a significant role in deciding where to buy and where to sell. In many instances, arms purchases, sales, logistic support and services (or the withholding thereof) becomes an integral part of foreign policy.

Armaments are high value and therefore expensive goods. Sales often require specialised finance arrangements, soft loans or even free or subsidised supply out of existing defence stocks. Financing and contract finalisation may involve complex government to government initiatives and agreements.

Industrial participation or counter trade/offset commitments are the norm and governments purchasing

armaments or related equipment require detailed industrial participation plans. International joint ventures, investment in local industry, technology transfer, immaterial property rights and similar business activities require extensive involvement by both the purchasing and selling countries.

Armaments are exclusively designed and manufactured to specific user requirements. The original user requirement is usually defined by the domestic defence force. Other prospective purchasing defence forces need to interact with the domestic defence force to determine the philosophy behind the design, the performance and the doctrines related to the use of the equipment. The buyer also requires confirmation of user satisfaction, quality assurance, safety clearance certification and similar information from the domestic defence force and not only from the supplier or manufacturer. This entails close co-operation between the manufacturer or service supplier, the domestic defence force and the foreign defence force, foreign companies and foreign service suppliers.

Governments therefore actively assist with the international marketing of armaments and actively support specific marketing initiatives by their local defence related industries.

Participation in international armaments and related equipment shows and exhibitions display the services and products of a supplier company and the domestic defence industrial capabilities to the international market. The prospective clients at these events include both military personnel and related industry. Domestic user participation, co-ordination and normal government export support measures require government involvement.

Foreign marketing and sales of armaments and related equipment, especially in the case of sub-sub systems, components and materials (see Table 2.4 in chapter 2) can also take place directly between companies. The South African Department of Trade and Industry (DTI) has generic industrial measures in place to support local industry exports in these types of initiatives and ventures. These technologies and products, if classified as armaments in regulations, are also still subject to various arms control mechanisms and procedures.

STAKEHOLDERS

The following stakeholders should be involved in the successful marketing and export of defence systems, products, technologies and related equipment, especially when marketing is aimed at a specific government:

- The Head of State and other high profile politicians.
- The Department of Defence (DoD), including the acquisition agency (Armscor).
- The Department of Foreign Affairs (DFA).
- The Department of Trade and Industry (DTI).
- Organised industry.
- Local companies.

PRINCIPLES APPLICABLE TO MARKETING FACILITATION AND ASSISTANCE BY GOVERNMENT

Rigorous, focussed, co-ordinated and visible government involvement is necessary for the successful marketing of South African armaments and related equipment and services. Government will assist the defence related industries by facilitating those initiatives that support strategic defence technologies and capabilities. Government will also specifically support those industry initiatives which are supportive of existing or identified political initiatives and broader industrial policy and initiatives.

The support required will vary from tacit support by government officials and politicians to high levels of involvement, depending on the particular marketing initiative. Defence related industries require:

- Efficient and rapid decisions with regard to exports.
- Arms export policy and procedures that are transparent with respect to criteria and decisions, are consistent, predictable and transparent, are sustainable in terms of domestic and foreign policies, and

protect government, company, client and commercial confidentiality.

14. Government must will ensure that its involvement in marketing initiatives is focussed, and in support of political, economic and military objectives.

15. Specific principles applicable to DoD marketing assistance and facilitation are:

- Requests for DoD personnel to assist in demonstrations, training, shows and exhibition, must not indicate personnel by name but rather the type of person, experience, qualifications and attributes.
- Companies utilizing DoD personnel as discussed above, will be required to pay direct sustenance and travel costs which will be administered by Armscor.

16. DoD support to defence related industries will be based on a value system determining priorities and the availability of resources. This value system will take, inter alia, the following into account:

- The track record of the requesting company, its accreditation, and other relevant information.
- The quality of products, technologies or services offered.
- The potential success of the initiative.
- The extent to which the initiative supports the DoD's own requirements.
- The level of value added in South Africa.
- The magnitude of the project.
- The strategic value of the company, technology or product.
- Flagship products.
- The economic value of the initiative.
- The political value of the initiative.

FACILITATION AND ASSISTANCE MEASURES

The following facilitation and export measures will be considered by government:

- Focussing, co-ordinating, integrating and facilitating industry and government defence related market information and research, including strategies and plans to initiate and monitor defence related marketing initiatives.
- Funding financial support measures which may range from normal DTI export support to DoD and Armscor financial support for specific marketing initiatives, such as renting of floor space at a South African pavilion at international defence related shows and exhibitions.
- Providing export credit insurance, as well as insurance against permit status reversal/overturn or non-performance by local suppliers. This is commonly termed sovereign risk.
- Facilitating, supporting and co-ordinating industry participation in international and national defence related shows and exhibitions.
- Providing facilities, equipment and personnel for the demonstration of existing SANDF equipment to prospective buyers, in accordance with approved marketing support plans.
- Facilitating local industry exposure to prospective users during visits by foreign military delegations, as well as visits by foreign military delegations to local defence related shows, exhibitions, demonstrations and exercises.
- Involving the domestic defence related industry in visits by incoming and outgoing political and industrial delegations, specifically where areas of mutual industrial or political benefit are identified and where industry may become involved in military co-operation.
- Identifying and facilitating defence industrial involvement and interests in government to government agreements, especially in respect of MoD Memoranda of Understanding and Memoranda of Agreement.

ROLES OF THE VARIOUS STAKEHOLDERS

Fundamental to sound marketing support is the function of managing marketing support. This support function is executed by various parties within the MoD/DoD with the involvement of government departments and industry, recognising areas of responsibility and expertise. Although responsibilities are delineated, in practice the parties will operate holistically in order to optimise support.

The primary roles of the parties involved are defined as follows :

Industry

- The marketing, sale and after-sales support of products.
- Define marketing support requirements and major marketing programmes.

Departmental Acquisition and Procurement Division (DAPD) including Armscor.

- Inter-governmental and industry marketing support co-ordination.
- Managing marketing facilitation and support to the defence related industry.
- Providing support and facilitation in respect of the marketing master plan and other authorised marketing plans.
- Providing military equipment, facilities and personnel to participate in defence related shows, exhibitions and demonstrations.
- Facilitating local industry exposure to prospective users, inviting foreign military dignitaries for courtesy visits and to local defence related shows, exhibitions, demonstrations and exercises.
- High level personal support by the Minister of Defence and senior staff for marketing initiatives.
- Involving local defence related industry in incoming and outgoing military delegations, specifically where areas of mutual industrial or military co-operation are identified.
- Identifying marketing opportunities for the defence related industries.
- Identifying and facilitating industry involvement in government to government agreements, especially in respect of Ministry of Defence Memoranda of Understanding and Memoranda of Agreement.
- Recruiting support to execute marketing initiatives.

The DoD should delegate the following marketing facilitation functions to the Marketing Support Board (MSB):

- Supplying support and infrastructure to co-ordinate and manage DoD assistance to marketing initiatives.
- Administering industry’s requests for government support.
- Facilitating DoD corporate division’s support in accordance with MSB decisions.
- Co-ordinating the gathering, interpretation and dissemination of defence related marketing information and intelligence.
- Co-ordinating and facilitating promotional initiatives, especially when large numbers of companies are involved.
- Facilitating the handling of inward and outward military delegations that can lead to possible marketing initiatives.
- Administering, in conjunction with organised defence related industries, the handling of inward defence related industrial delegations by authorising visits to industries involved in sensitive work and arranging interviews with key DoD personnel.

- Briefing, in conjunction with the DoD and organised industry, of South African foreign missions as well as inward and outward military and industrial delegations on the capabilities of the local defence related industries.
- Managing processes that compile, implement and monitor marketing strategies and plans.
- Marketing and selling surplus defence equipment in co-operation with industry.

Department of Trade and Industry.

- The provision of specific marketing information.
- Providing routine, generic export assistance and support as available to the broader industrial base.
- Providing assistance to South African trade counsellors stationed in foreign countries.

Department of Foreign Affairs.

- Providing political support and advice on specific countries.
- Assisting the defence related industries via diplomatic channels.
- Providing marketing information.

CO-ORDINATION OF EXPORT MARKETING FACILITATION AND SUPPORT

Where coordinated government support is required in respect of marketing initiatives supporting the DoD's strategic requirements, DAPD and Armscor should manage and co-ordinate industry and government initiatives. They should concentrate on supporting those industry initiatives that support their requirements to retain and develop strategic technologies and capabilities. Other initiatives that support national industrial policy and the broader industrial base, should be noted by the DoD and co-ordinated with, or passed on, to DTI.

The DoD will facilitate the planning and implementation of government support to defence related industries related marketing initiatives by appointing and managing a Market Support Board (MSB). The aim of this board will be to:

- Initiate export marketing facilitation and support policies, processes and procedures.
- Translate the DoD's strategic technology and capability requirements into marketing and exports initiatives. Cognisance must be taken of DTI's plans and initiatives. These requirements must be integrated into defence related industry's initiatives, capabilities and expectations, as well as arms control policies.
- Identify strengths, weaknesses, opportunities and threats relating to these initiatives.
- Initiate the preparation and approval of a government/industry marketing master plan for those initiatives that require government support or co-ordination. This plan must clearly spell out the roles and actions of the various stakeholders.
- Monitor the implementation of the plans and initiatives.

Composition of the Marketing Support Board (MSB)

The MSB will have representatives of all the major stakeholders. Its composition is indicated in Table 5.2.

LINKAGE TO ARMS CONTROL MECHANISMS

The established South African arms control bodies regulate and control the marketing and sales of armaments in accordance with local and international regulations and norms. These arms control policies and mechanisms

are described in more detail in the next chapter.

Table 5.2: Structure and Composition of the MSB

STRUCTURE & COMPOSITION OF THE MARKETING SUPPORT BOARD
Chairperson *(Co-chaired by Chief of Acquisition and Armscor General Manager)*
Integrated Defence Headquarters
Director for Conventional Arms Control
Armscor
Department of Foreign Affairs
Department of Trade & Industry
Organised Defence Related Industry ***(South African Aerospace, Maritime and Defence Industries Association)***

top

CHAPTER SIX

REGULATION OF ARMAMENTS PRODUCTION AND TRANSFER

AREAS OF REGULATION AND CONTROL

Government control of defence related industries is effected at the national level through legislation, national policy, rules and regulations and via the legislature in terms of its legislative, oversight and budgetary functions. Regulation and control functions can be grouped under the following six headings:

- International arms control regimes and mechanisms.
- National arms control.
- Transparency.

Rationale for Regulation

As a responsible member of the international community, South Africa is committed to maintaining integrity in the manufacture, production, possessing and trade of armaments. Comprehensive and responsible regulation of many of defence related industry products is necessary. The following considerations underscore the requirement for regulation:

- The nature of the products produced and the potential dangers posed by the uncontrolled development, production, manufacture and trade of armaments.
- Government's commitment to non-proliferation, disarmament, restraint and effective arms control.
- Cognisance of the fact that government can directly influence the viability of the domestic defence related industry.

INTERNATIONAL ARMS CONTROL REGIMES AND MECHANISMS

Defence related industries are subject to limitations and controls stemming from the government's policies on non-proliferation, disarmament and arms control. In terms of these policies, South Africa is a member, aspires to membership or supports various international bodies and conventions which promote various types of controls.

South Africa exercises a dual process of control for purposes of non-proliferation of weapons of mass destruction and of other arms and related dual-use capabilities that could be used in the development and production of weapons of mass destruction and/or conventional arms. Various international agreements and regimes aim to control the transfer and use of certain types of weapons and related technologies and to build confidence and international transparency in the trade and transfer of such weapons and technologies.

Non-Proliferation and Disarmament of Conventional Armaments

UN Register for Conventional Arms. This Register is a confidence-building mechanism in terms of which member states are required to reveal imports and exports of some seven categories of major weapons systems. The Register is voluntary in character and recognizes the States sovereign right to provide data at various levels of transparency. South Africa participates in the Register by reporting on an annual basis.

Convention on Prohibitions or Restrictions on the Use of Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects (CCW). (Also known as the Certain Conventional Weapons Convention or the Inhumane Weapons Convention). This Convention has four protocols in terms of which the use of certain conventional weapons is regulated, such as non-detectable fragments, land mines, booby traps and other devices, incendiary weapons and blinding laser weapons. South Africa became a State Party to the CCW on 13 March 1996 and handed in its Instrument of Ratification to be bound by the revised Protocol II and new Protocol IV on 26 June 1998.

Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction. On 26 June 1998 South Africa deposited its Instrument of Ratification of this Convention at the Office of the Secretary General of the United Nations. The Convention will enter into force after 40 ratifications. In terms of the Convention, State Parties will be obligated not only to ban the use of anti-personnel mines but also to ensure their destruction. With the final phase of the destruction of its stockpiled anti-personnel mines in October 1997, South Africa fulfilled the destruction obligation in terms of this Convention.

Non-Proliferation of Delivery Systems of Weapons of Mass Destruction

Missile Technology Control Regime (MTCR). Member countries of this Regime control missile related technologies and equipment that could be used in the development and manufacture of unmanned delivery systems (ballistic or cruise missiles) for nuclear, chemical and biological weapons. South Africa became a member on 13 September 1995. MTCR controls are implemented by the South African Council for the Non-Proliferation of Weapons of Mass Destruction.

Chemical and Biological Non-Proliferation and Disarmament

Chemical Weapons Convention (CWC). South Africa ratified the Convention on 13 September 1995. The Convention prohibits the development, production, acquisition, retention, stockpiling, transfer and use of chemical weapons. It further applies a strict international control mechanism on scheduled toxins, chemicals and chemical precursors. It also regulates the production, processing and consumption of chemicals that possess properties of chemical warfare agents or can be converted into chemical warfare agents. Most of these are dual-use, in that they have legitimate commercial uses. The CWC requires States Parties to make regular declarations on specified military and industrial activities in the chemical field, including the declaration of riot control agents. Declarations are verified through on-site inspections by inspection teams operating from the headquarters of the Organisation for the Prohibition of Chemical Weapons (OPCW) in The Hague, which

administers the CWC. The South African Council for the Non-Proliferation of Weapons of Mass Destruction (NPC) is the national authority for the implementation of the Convention. The Non-proliferation of Weapons of Mass Destruction Act (Act No. 87 of 1993) is the enabling legislation. The South African Ambassador to the Kingdom of the Netherlands is South Africa's Permanent Representative to the OPCW.

Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BTWC). South Africa has been a State Party to this Convention since 1975. Although the Convention prohibits biological weapons, it does not provide a mechanism to verify States Parties' compliance. The so-called BTWC Ad Hoc Group has been mandated to negotiate a verifiable compliance protocol to the Convention which is expected to be completed by the year 2000. South Africa, on a voluntary basis, participates annually in the exchange of information and data on biological capabilities and facilities in conformity with the standardized procedure as agreed by the United Nations General Assembly. The South African Council for the Non-Proliferation of Weapons of Mass Destruction regulates the implementation of the Treaty in terms of the Weapons of Mass Destruction Act.

Australia Group. The Australia Group is an informal group of countries which endeavours to control all items which could be used in the development and production of chemical and biological weapons. South Africa is not a member of this group, but the South African Council for the Non-Proliferation of Weapons of Mass Destruction decided to implement Australia Group-type controls under the Non-proliferation of Weapons of Mass Destruction Act, given the need to control the transfer of chemical and biological agents and toxins which are as yet not covered by the chemical and biological conventions.

Nuclear Non-Proliferation and Disarmament

Treaty on the Non-Proliferation of Nuclear Weapons (NPT). The NPT was concluded in 1968 and entered into force in 1970. The Treaty established an international framework for preventing the spread of nuclear weapons. Its membership at the beginning of 1997 stood at 187. South Africa became a State Party to the NPT in July 1991. The broad objectives of the Treaty are to:

- prevent the proliferation of nuclear weapons to states other than the five recognised as Nuclear Weapon States in 1968 - namely the United States, the Soviet Union (Russia has since succeeded to these obligations), the United Kingdom, France and China. All other States Parties are required to conclude safeguards agreements with the International Atomic Energy Agency to verify the peaceful nature of their nuclear programs;
- facilitate peaceful nuclear cooperation between Treaty members; and
- work towards nuclear disarmament.

The International Atomic Energy Agency (IAEA). The IAEA as an autonomous intergovernmental organisation was founded by the United Nations in 1957, with the mandate "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world". South Africa is a founder member of the IAEA and, as the most advanced country in the nuclear field in Africa, was a "designated" member of the Agency's Board of Governors (the Agency's principal policy-making body) until 1977. At the June meeting of the Board in 1995, South Africa was again designated to resume a seat on the Board as the designated member for the African region. In terms of the Nuclear Energy Act, (1993), the Atomic Energy Corporation is responsible for implementing the Safeguards Agreement with the IAEA, as required by the Treaty on the Non-Proliferation of Nuclear Weapons, on a national level.

African Nuclear Weapon Free Zone Treaty (ANWFZ). South Africa played an active role in the negotiation of this Treaty, which is also known as the "Pelindaba Treaty" as it was adopted at the Pelindaba headquarters of the Atomic Energy Corporation in South Africa. The headquarters of the African Commission on Nuclear Energy (AFCONE) envisaged by the Treaty is to be situated in South Africa. The Treaty will enter into force upon the date of deposit of the twenty-eighth Instrument of Ratification. South Africa deposited its Instrument of Ratification with the Secretary General of the Organisation for African Unity on 27 March 1998.

Comprehensive Nuclear Test Ban Treaty (CTBT). South Africa actively participated in the negotiations with

regard to the conclusion of a CTBT. South Africa signed the Treaty on 24 September 1996. The Treaty establishes a sophisticated network of monitoring stations to verify compliance. It will enter into force after ratification of 44 designated states. The treaty pays for monitoring stations on South African territory at Boshoff, Marion Island and Antarctica.

Nuclear and Dual Use-use Nuclear Export Controls

Zangger Committee. The Zangger Committee, of which South Africa became a member on 21 October 1993, defines and monitors trade in goods and equipment specifically designed for nuclear use. The Nuclear Energy Act assigns the control over Zangger and Nuclear Supplier Group (Part One Items) to the Minister of Mineral and Energy Affairs, which he exercises in consultation with the Atomic Energy Corporation. The Minister may delegate some of his powers to the Atomic Energy Corporation.

Nuclear Suppliers Group (NSG). South Africa became a subscribing member on 5 April 1995. Members of the Group endeavour to control nuclear related dual-use equipment, material and technology. The Nuclear Suppliers Group controls both nuclear material, equipment and technology (Part One) and nuclear related dual-use items (Part Two). Nuclear Supplier Group controls are implemented by the Atomic Energy Corporation (for Part One direct-use nuclear materials and equipment) and the South African Council for the Non-Proliferation of Weapons of Mass Destruction (for Part Two dual-use capabilities).

Other Non-Proliferation and Military Dual-Use Controls

Wassenaar Arrangement. This newly established export control group replaced the former COCOM (NATO alliance export control group). The Wassenaar Arrangement has been established in order to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and military dual-use goods and technologies. The current participating states, through their national policies, seek to ensure that transfers of these items do not contribute to the development or enhancement of military capabilities which undermine these goals, and are not diverted to support such capabilities. South Africa is currently not a member of the Wassenaar Arrangement.

NATIONAL ARMS CONTROL LEGISLATION

Government control of armaments and related equipment is effected at national level in six separate areas. Each area has its own set of enabling legislation and resulting structures. The six areas of government control at national level are:

- Conventional armaments.
- Weapons of Mass Destruction and Dual-use items.
- Firearms, Ammunition and Teargas.
- Explosives.
- Nuclear Related Technology.

Duplicate and overlapping responsibilities appear in all of the above Acts. Section 26 of the Import and Export Control Act, 1963 (Act 45 of 1963) further contributes to possible manipulation and interpretation of control measures. Customs and Excise legislation (Act 91 of 1964) bears witness to major shortcomings in respect of control measures regarding armaments as controlled in the Armaments Development and Production Act, 1968.

Table 6.1: National Arms Control Legislation, Control Structures and Responsibility

LEGISLATION	CONTROL	STRUCTURE	RESPONSIBLE DEPARTMENT
Conventional Arms Control Bill	Conventional Arms	NCACC DCAC	Department of Defence (DoD)
Armaments Development and Production Act (Act 57 of 1968)	Conventional Arms	NCACC DCAC	Department of Defence (DoD)
Non-Proliferation of Weapons of Mass Destruction (Act 87 of 1993)	Weapons of Mass Destruction and Dual-use Items	Non-Proliferation Council (NPC)	Department of Trade and Industry (DTI)
Explosives Act (Act 26 of 1956) Firearms and Ammunition Act (Act 75 of 1969) Teargas Act (Act 16 of 1964)	Explosives (Commercial and Military Applications) Commercial Arms and Ammunition	South African Police Service (SAPS) (Inspectorate of Explosives) South African Police Service (SAPS) (Central Firearms Register)	Ministry of Safety and Security Ministry of Safety and Security
Nuclear Energy Act (1993)	Nuclear Materials and Related Technology	Atomic Energy Corporation (AEC)	Department of Mineral and Energy Affairs

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Note
It should be noted that a certain amount of duplication and overlapping of responsibilities appear in the above Acts.

CONVENTIONAL ARMAMENTS

Governing Legislation

Armaments Development and Production Act (Act 57 of 1968). This provides, inter alia, for the existence of Armscor, its mandate, role and functions. The Act also provides for control of the import and export of conventional arms (The authority for approval in this regard rests with the Minister of Defence who is advised by the National Conventional Arms Control Committee).

Control Structure : The National Conventional Arms Control Committee

Purpose. The National Conventional Arms Control Committee (NCACC) evaluates, against national considerations, applications for the research, development, manufacturing, marketing, contracting, export, import and transit of armaments. The purpose of the National Conventional Arms Control Committee is to exercise political control over arms trade and transfers. The import and export of conventional weapons into South Africa and the transit of such arms through South Africa to neighbouring or foreign states shall be subject to control.

Defence Related Industries Policy. The National Conventional Arms Control Committee was mandated by Cabinet to formulate this White Paper for the defence related industries. However, no single government organisation has overarching responsibility for policy for these industries. This situation has led to fragmented formulation of policy on this issue by government, leading to uncertainty in both government and industry.

NCACC Authority & Control. The National Conventional Arms Control Committee is vested with the political authority and control over the export, marketing, import, conveyance in transit, development and manufacture of armaments, as well as the authorisation of a local entity to enter into contractual negotiations concerning conventional arms with another entity outside South Africa. The National Conventional Arms Control Committee controls the trade and transfer processes to ensure that arms trade and transfer policies are not unduly influenced by commercial interests and pressures, and that the guidelines, principles and criteria are observed. Members of the National Conventional Arms Control Committee consist of Ministers and Deputy Ministers appointed by the President.

The National Conventional Arms Control Committee is empowered to implement Government policies on arms transfers and to protect and promote national economic and security interests related to trade in conventional arms. The National Conventional Arms Control Committee is required to report on a regular basis concerning the control and regulation of conventional arms and on the rendering of services to the Cabinet and Parliament.

The functions of the National Conventional Arms Control Committee include the implementation of management and control processes to register companies that manufacture and develop armaments; to prescribe rules and criteria to effect conventional arms control and the rendering of services related to conventional arms; to regulate the transfer of armaments through the authorisation of permits and to conduct investigations into any trade relating to conventional arms or services.

Government will support the export initiatives of armament manufacturers by permitting industry to contract and honour obligations which have been duly approved in terms of the conventional arms control system. Government however reserves the right to prohibit or withdraw such support should it be in conflict with, or irreconcilable with international or national interest at any given time.

The National Conventional Arms Control Committee secretariat is referred to as the Directorate of Conventional Arms Control (DCAC) and is located in the Defence Secretariat. The Directorate of Conventional Arms Control is responsible for implementing the processes and procedures decided on by the National Conventional Arms Control Committee. Permit processing is conducted by the Directorate of Conventional Arms Control. The process consists of departmental scrutiny by several Government departments; recommendation by a committee of Directors-General and a final decision by the National Conventional Arms Control Committee.

Conventional Arms Trade Control Process

Applications for arms export authorisation require a full process of assessment and scrutiny, based on the following four levels:

> **Directorate of Conventional Arms Control**. At an initial level, a Processing Unit in the Ministry of Defence administers and processes applications for prescribed conventional arms trade. This is attended to by the DCAC.
>
> **Departmental Review**. At the second level, designated government departments receive certain applications individually for review and assessment in accordance with prescribed criteria.
>
> **Scrutiny Committee (SC)**. At the third level a Scrutiny Committee, consisting of the Secretary for Defence and the Directors General of the Department of Foreign Affairs, South African Secret Service and Trade and Industry, scrutinises inputs which have been collated by the Processing Unit and submits a recommendation to the National Conventional Arms Control Committee (NCACC).
>
> **National Conventional Arms Control Committee (NCACC)**. The fourth and last level of political oversight is conducted through the National Conventional Arms Control Committee, consisting of several ministers and deputy ministers, with a chairperson with no line function responsibility for the industry or exports. The Minister of Defence is responsible for the issuing of permits as prescribed by section 4[c] of the Armaments development and Production Act, 1968 (Act No 57 of 1968 as amended).

Penalties can be incurred by companies or individuals who disregard or hinder processes related to the control over conventional arms. Individuals and companies have the right to obtain an explanation for decisions taken by the National Conventional Arms Control Committee and to appeal against such decisions.

Control Measures

Principles. Conventional arms control measures are based on the principles of the United Nations Charter, International Law, recognised international arms control systems, including economic, ethical, political, military and security considerations. Such controls will be managed by the National Conventional Arms Control Committee in a manner that ensures a responsible approach to arms transfers. Government affirms:

- that in accordance with the principles of the Charter of the United Nations, it holds the view that the reduction of world military expenditures could have a significant positive impact for social and economic development of all peoples;
- that all sovereign countries have the inherent right of self-defence in terms of the Charter of the United Nations;
- the need to ensure that transferred conventional arms are not used in violation of the purposes of the Charter of the United Nations;
- that excessive and destabilizing conventional arms build-up pose threats to national, regional and international peace and security. Sales to countries in war-prone regions should be continually evaluated and reviewed to limit the possible escalation of regional conflict;
- the need for effective national mechanisms for controlling the transfer of conventional arms and related technologies; and
- its support and commitment to provide data and information as required by the United Nations resolution establishing the Register of Conventional Arms, taking into account national interests.

Effective Arms Control. The National Conventional Arms Control Committee will ensure that South Africa, as a responsible member of the international community, exercises due restraint in the transfer and trade of arms. In order to further the general aim of an international co-operative and common approach to security, Government will promote an effective arms control system, exercise due constraint in the transfer of conventional arms and related technologies by taking the following into account:

- Respect for human rights and fundamental freedoms in the recipient country.
- An evaluation based on the United Nations Universal Declaration of Human Rights and the African Charter on Human and People's Rights. Due consideration will be given especially to cases where the political, social, cultural, religious and legal rights are seriously violated by the authorities of that country.
- The internal and regional security situation in the recipient country, in the light of existing tensions or armed conflicts.
- The record of compliance of the specific country with regard to international arms control agreements and treaties.
- The nature and cost of the arms to be transferred in relation to the circumstances of the recipient country, including its legitimate security and defence need, and the objective of the least diversion of human and economic resources for armaments.
- The degree to which arms sales are supportive of South Africa's national and foreign interest.

Transfers and Trade. Transfers and trade will be avoided where it would be likely to:

- be used for the violation or suppression of human rights and fundamental freedoms.
- contravene South Africa's commitments, in particular its obligations under arms embargoes adopted by the United Nations Security Council and other arms control agreements or responsibilities in terms of internationally accepted custom.
- endanger peace by introducing military capabilities into a region, or otherwise contribute to regional

instability and negatively influence the balance of power.

- be diverted within the recipient country or be re-exported for purposes contrary to South Africa's policies.
- have a negative impact on South Africa's diplomatic and trade relations with other countries.
- support or encourage terrorism.
- be used for purposes other than legitimate defence and security needs of the recipient country.
- contribute to the escalation of regional conflicts.

Arms Trade Permits

Various types of permits, as prescribed by section 4[c] of Act 57 of 1968, have been instituted to ensure a legitimate mechanism that is essential for a responsible control system. The following permits are required:

Development and Manufacturing Permit. Permits must be issued prior to the development and manufacturing of armaments by the Minister of Defence or by a person authorised by him/her.

Marketing permit. No armaments shall be marketed within or outside the Republic; except under the authority of and in accordance with the conditions stated in a permit issued by the Minister of Defence or by a person (presently the Secretary for Defence) authorised by him/her.

Contracting authorisation. Contracting means the process of entering into a firm commitment by a local entity to supply armaments to another entity outside South Africa. A marketing permit does not constitute an authority to the marketing permit holder to enter into a contractual commitment with another party for the export of armaments, unless such a contract or the acceptance of an order is approved in advance. Contracting authorisation is only applicable when negotiating with foreign entities. In order to enter into contractual negotiations with the purpose of concluding a contract, companies have to apply for contractual authorisation. This contracting authorisation is effected in due consultation with the National Conventional Arms Control Committee, in terms of the prescribed four level assessment and approval process.

Export permit. No armaments shall be exported from the Republic except under the authority of and in accordance with the conditions stated in a permit issued by the Minister of Defence or by a person (presently the Secretary for Defence) authorised by him/her.

Import Permit. No armament shall be imported into the Republic, except under the authority of and in accordance with the conditions stated in a permit issued by the Minister or a person (presently the Secretary for Defence) authorised by him/her.

Transit Permit. No weapons in transit to other countries may be shipped across South African territory without the authority of and in accordance with the conditions stated in a permit issued by the Minister of Defence.

Inspectorate

Role. Cabinet has approved the principle of an independent inspectorate for defence related industries. Such an inspectorate will ensure that all levels of the National Conventional Arms Control Committee process are subject to independent scrutiny and oversight and are conducted strictly in accordance with the principles, policies and guidelines of the National Conventional Arms Control Committee. The inspectorate will make periodic reports to the appropriate parties and parliamentary oversight bodies.

Reporting and Information Exchange. The National Conventional Arms Control Committee submits detailed quarterly reports on all arms transfers to the Cabinet. In accordance with the policy guidelines provided by Cabinet, annual reports on armament export statistics are also provided to Parliament and the general public in which the country, category of arms and total value of arms exported in that category during the past year are

reflected. The attainment of full arms transfer disclosure is balanced against the need in some instances to be discrete. Government will consider engagement in the following assistance and information exchange:

- assistance in the establishment of effective national mechanisms in accordance with international practices for controlling and regulating the transfer of conventional arms and related technology; and
- information in respect of national legislation and practices in the field of transfers of conventional arms and related technology and on mechanisms to control these transfers.

Product Classification. Conventional arms, products and technologies for which a permit application has been received will be dealt with in accordance with the following product categorisation system.

Category A. *Sensitive, Major Significant Equipment (SMSE)*. SMSE comprises conventional implements of war that could cause heavy personnel casualties and/or damage and destruction to material, structures, objects and facilities. Examples are artillery, bombs, grenades and Armoured Fighting Vehicles.

Category B. *Sensitive Significant Equipment (SSE)*. SSE comprises all types of hand held or hand carried assault weapons of a calibre smaller than 12,7mm. All assault rifles, machine guns, pistols and related small arms and ammunition are included in this category.

Category C. *Non-sensitive Equipment (NSE)*. NSE comprises all support equipment usually employed in the direct support of combat operations that have no inherent capability to kill or destruct, although, if employed in conjunction to SMSE, they could have a multiplier effect. Examples are radars, meteorological stations, radio equipment, support vehicles and aircraft and recovery equipment.

Category D. *Non-lethal Equipment (NLE)*. NLE is limited to purposely designated de-mining and mine clearing and mine detecting equipment, all non-lethal pyrotechnical and riot control products and related equipment. Examples are mine detectors, signal flares, baton rounds and teargas.

Category E. *Not for Sale (NFS)*. NFS items comprise all those defence or related products that are not allowed to be sold, such as anti-personnel landmines.

NON-PROLIFERATION OF WEAPONS OF MASS DESTRUCTION AND DUAL USE ITEMS

Governing Legislation

The Non-proliferation of Weapons of Mass Destruction (Act 87 of 1993). This act covers the transfer of technology, materials, components and dual-use capabilities related to weapons of mass destruction. It also provides for the establishment of the South African Council for the Non-Proliferation of Weapons of Mass Destruction (NPC) which is controlled by the Department of Trade and Industry.

Control Structure : The South African Council for the Non-Proliferation of Weapons of Mass Destruction (NPC)

The South African Council for the Non-Proliferation of Weapons of Mass Destruction (NPC) acts as South Africa’s national authority for the control over all dual-use capabilities.

Dual-use capabilities are defined as those capabilities relating to technology, expertise, services, materiel, equipment and facilities which can contribute to the proliferation of weapons of mass destruction, but which could also be used for other purposes, including conventional military or commercial use. Dual-use items and technologies are controlled in terms of the Missile Technology Control Regime and Part 2 of the Nuclear Supplier’s Group of which South Africa is a member.

The Minister of Trade and Industry is responsible for the South African Council for the Non-Proliferation of

Weapons of Mass Destruction, and its members are appointed by the Minister.

Objectives of the South African Council for the Non-Proliferation of Weapons of Mass Destruction.

- To protect the interests, carry out responsibilities and fulfil the obligations of South Africa in accordance with national non-proliferation policy and the provisions of the Act.
- To meet the State's undertakings regarding international non-proliferation treaties, conventions and regimes to which South Africa is party.
- To advise the Minister on any matter which it deems necessary and which falls in the purview of the Act.

The South African Council for the Non-Proliferation of Weapons of Mass Destruction is tasked to exercise control over the transfer of technology, materiel and equipment which could be used in the production of weapons of mass destruction. This specifically relates to:

Nuclear Weapons Related Materiel and Technology. The Nuclear Suppliers Group Part One, dual use nuclear capabilities, is controlled in terms of the Non-Proliferation Act.

Missile Related Technology and Equipment. South African defence technology and items which could be used in the development of ballistic and cruise missiles (delivery systems) are controlled by the South African Council for the Non-Proliferation of Weapons of Mass Destruction. This relates directly to the Missile Technology Control Regime.

Chemical and Biological Weapons Related Controls. The legally enforces the Chemical Weapons Convention. Although the Biological and Toxin Weapons Convention requires States Parties to implement measures to prevent transfers of biological agents and toxins, the Treaty does not prescribe specific control measures or a list of controlled items.

Control Process of the South African Council for the Non-Proliferation of Weapons of Mass Destruction

Regulations. The regulations in terms of Section 13 of this Act were published on 14 October 1994 as Regulation No R1789 (MTCR) and No R1790 (NSG).

Dual-Permits. In some cases, companies might be required to apply for two separate permits (one NPC and one NCACC) for certain dual-use items, in terms of the prescriptions of the Armaments Development and Production Act, 1968 (Act 57 of 1968) and the Non-Proliferation of Weapons of Mass Destruction Act, 1993 (Act 87 of 1993). It should be noted, however, that the criteria applied in assessing applications under these two acts are not the same.

Transfers. Each transfer is evaluated to determine the proliferation risk of the particular transfer, taking into account the items involved, the end-use and the end-user.

End-use and End-user Certificates. It should also be noted that certain unique clauses may be required by the South African Council for the Non-Proliferation of Weapons of Mass Destruction control system and that the end-use statement for conventional arms is not necessarily acceptable. In the case of the South African Council for the Non-Proliferation of Weapons of Mass Destruction control system, an end-use or end-user certificate is not always required.

Final Export Control. The South African Council for the Non-Proliferation of Weapons of Mass Destruction only controls the final export of a transfer, but applicants may apply at a very early stage to allow the application to coincide with the marketing and contracting application process at the National Conventional Arms Control Committee.

Inter-sessional Procedures. A procedure exists for temporary exports and other non-sensitive, non-proliferation exports between sittings of the South African Council for the Non-Proliferation of Weapons of Mass Destruction. These are approved by the Chairperson of the South African Council for the

Non-Proliferation of Weapons of Mass Destruction and ratified by the Council at its next plenary.

Non-Proliferation Secretariat. The NPS serves the South African Council for the Non-Proliferation of Weapons of Mass Destruction. It is responsible for administering all aspects of the Non-Proliferation Act and its Regulations.

Inspectors

Domestic Inspections. The Act empowers the Chairperson of the South African Council for the Non-Proliferation of Weapons of Mass Destruction to appoint inspectors to ensure that the provisions of the Act are complied with. The inspectors may enter and inspect any premises where controlled goods are kept under a permit. Non-compliance with the provisions of the Act is punishable.

International Inspections. The international chemical, biological and nuclear conventions signed by South Africa make provision for international inspections of facilities. Notice of international inspections is given to the Department of Foreign Affairs by the international treaty organisation concerned.

Interaction with Conventional Arms Control

Interaction Within the Conventional Arms Control System. All applications for permits within the Conventional Arms Control system that have proliferation or dual-use risks, are referred to the NPS. At an early stage, the NPS expresses an opinion on the necessity for a Non-Proliferation Permit. However, it should be noted that it is impossible to determine at this stage if the system under consideration is controlled or may contain certain controlled goods. This responsibility remains with the applicant. The NPS will use this information, in some cases, to approach the applicant and discuss the scope and content or it might question if any suspicion exists whether the system is controlled or might contain controlled goods.

Interaction Within the Non-Proliferation System. The Non-Proliferation System is based on three levels of review. The NPS receives the application and completes a preliminary investigation. The applications are then referred to members of a Control Committee appointed by the South African Council for the Non-Proliferation of Weapons of Mass Destruction. The Departments of Foreign Affairs, Trade and Industry, Mineral and Energy Affairs, the National Intelligence Agency, the South African Secret Service, Military Intelligence, South African Police Service, Customs and Excise and the Directorate for Conventional Arms Control (DCAC) have representation on the Control Committee. The Control Committee considers the preliminary investigation by the NPS and all inputs by its members.

From this, an assessment is made on the proliferation risk associated with a particular application. Based on a consensus decision, a recommendation is made to the South African Council for the Non-Proliferation of Weapons of Mass Destruction. All decisions on applications for permits are communicated back to the Control Committee at its next meeting and then to the Directorate for Conventional Arms Control.

FIREARMS, AMMUNITION AND TEARGAS

Governing Legislation

Firearms and Ammunition Act (Act 75 of 1969). This act controls the manufacture, dealership, possession, repair, import and export of commercial arms and ammunition.

Teargas Act (Act 16 of 1964). This act controls the import and possession of teargas. It does not control the export of teargas.

Control Structures : South African Police Service (Central Firearms Register)

Firearms and ammunition. The South African Police Service (Central Firearms Register) controls the manufacture, possession, dealership, repair, import and export of firearms and ammunition.

Teargas. The South African Police Service (Central Firearms Register) controls the import and possession of teargas. They do not control the export of teargas.

Control Processes

Permits.

Permits Relating to Firearms and Ammunition. The following permits relate to firearms and ammunition.

- Import Permits (individuals and dealers).
- Export Permits (individual and dealers).
- Ammunition Collectors Permit.

Interface with the National Conventional Arms Control Committee. The NCACC has no jurisdiction over domestic transfers of commercial weapons, though an understanding exists between the Minster of Safety and Security and the Chairperson of the NCACC that no commercial weapons will be given an export permit without being reviewed by the NCACC.

Teargas. The following permits relate to teargas:

- Import of Teargas.
- Possession of Teargas

Licences. Licences are required for the manufacture, dealing and repair of firearms and ammunition. These are specifically:

- Manufacturing licence (a factory licence is also required from the Department of Labour).
- Dealers license.
- Gunsmith licence.
- Individual fire arm licences.

Inspections

Import and Export. SAPS inspections are done by border control police, who inspect all imports and exports of firearms and ammunition. This is done in conjunction with Customs and Excise.

Manufacture. Inspections relating to the manufacture of firearms and ammunition are conducted jointly with local police, the Central Firearms Register and the Department of Labour (factory licence). Applicants must demonstrate adequate training, experience and competence before being granted a manufacturing licence.

EXPLOSIVES (COMMERCIAL AND MILITARY APPLICATIONS)

Governing Legislation

Explosives Act (Act 26 of 1956). This act controls the manufacture, storage, transport, import and export of explosives.

Control Structure : South African Police Service (Inspectorate of Explosives)

Manufacture. The manufacture of explosives within licenced factories is currently delegated to and controlled by the Department of Labour.

Explosives Controls. The dealership, import, export and transport of explosives is controlled by the South African Police Service (Inspectorate of Explosives). Some explosives and propellant constituents are also controlled under the Non-proliferation of Weapons of Mass Destruction Act.

Mining Industry. The use of explosives on mines (diamond/gold etc) is controlled by the Department of Mineral and energy Affairs, specifically the Government Mining Engineer.

Control Processes

Permits. Permits are required for the following:

- Import of explosives.
- Export of explosives.
- Transport of explosives.
- Blasting Permits.
- Permits relating to Special Permissions (e.g. testing of explosives, transport of samples) and applications for exemptions to the Act.

68. **Licences**. The following categories of licences have to be obtained:

- Magazine licence.
- Dealer’s licence.
- Mixing/manufacture licence (Manufacture outside a licenced factory, such as mixing of explosives on site).
- Vehicle licence (Licences for vehicles specially designed to convey and transport explosives).

Inspections

Manufacture. An inspection is conducted by the Department of Labour prior to the granting of a Factory Licence.

Explosive Related Inspections. Inspections relating to permits and licences for explosives are conducted by the South African Police Service Inspector of Explosives at national and regional level.

NUCLEAR AND RELATED MATERIEL AND TECHNOLOGY

Governing Legislation

The Nuclear Energy Act (1993). This act regulates the peaceful use of nuclear materials and related activities.

Control Structure : Atomic Energy Corporation (AEC)

The Act establishes the Atomic Energy Corporation, defines it as the National Nuclear Authority and makes the

Atomic Energy Corporation responsible for the implementation of International Atomic Energy Agency (IAEA) Safeguards. In terms of the Act the Minister authorises the production, import and export of nuclear materials and related equipment.

Control Process

Nuclear Non-proliferation. Nuclear non-proliferation is implemented in South Africa through the implementation of the International Atomic Energy Agency Safeguards Agreement by the Atomic Energy Corporation and the authorisation by the Minister of the import and export of nuclear materials and equipment relating to the Zangger and Nuclear Suppliers Group Part One lists.

Nuclear Related Dual-use Materials and Equipment. Dual-use items are regulated under the Nuclear Suppliers Group Part Two by the South African Council for the Non-Proliferation of Weapons of Mass Destruction in terms of the Non-proliferation of Weapons of Mass Destruction Act.

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POLICY ISSUES

Fragmentary Legislation. The currently fragmented legislation governing the development, manufacture, marketing, transit, import and export of armaments and dual-use or related material and goods, needs to be synthesised and consolidated to provide a clear and coherent legislative framework for the defence related industries.

Fragmentary Control Structures. The diverse departmental responsibilities for regulation of arms trade need to be synthesised and consolidated to streamline regulation, afford greater accountability and provide easier definition of responsibility.

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INTEGRATED NATIONAL ARMS CONTROL STRUCTURE

77. Arising from the two policy issues identified above, the NCACC has taken the decision to integrate national arms control structures, thus harmonising current arms control legislation, structures and processes into one process. The following arms transfer processes will integrated into the structure in a co-ordinated and harmonised manner:

- Legislation.
- Policy/Guidelines.
- Bureaucratic processes/procedures.
- Permits.
- Database, reporting and information exchange.
- Infrastructure.
- Personnel.
- Ministerial oversight and accountability.
- Monitoring and compliance.

This integrated structure will be competent to issue permits, ensure compliance and undertake monitoring actions concerning armaments. The following permit authorisation should resort with the structure:

- Import permits.
- Export permits.
- Transit permits.

- Manufacturing permits.
- Advance marketing permits.
- Marketing permits.
- Contracting permits.

LEVEL 1: NATIONAL CONVENTIONAL ARMS CONTROL COMMITTEE (NCACC)

Ministerial oversight and accountability will take place via the NCACC as established to oversee arms transfers. The membership of the NCACC will consist of a chairperson appointed by the President from a non-line function department and Cabinet Ministers and Deputy Ministers similarly appointed by the President.

The NCACC will meet as required by the Chairperson. A secretariat for the NCACC will be provided from the processing unit.

Functions. The NCACC is responsible for the following functions:

- Political oversight and responsibility for all arms control matters.
- Political Guidance and Direction to the other levels of the structure, aimed at assisting bureaucrats with lower-level decision making.
- Approval of Extraordinary Transfer Permits in those special or non-routine cases or where exceptional circumstances dictate.
- Review all permits approved by the second level structure.
- Approval of the Annual Report to Parliament.

82. **Inter-sessional powers**. The Chairperson should be vested with intercessional powers to deal with urgent applications.

LEVEL 2: ARMS CONTROL COUNCIL

Membership. An Arms Control Council will be established to review and approve permits as approved by the NCACC. The Members of the Council should be appointed by the Chairperson in consultation with the President. The membership should consist of the following:

- A Chairperson who is appointed in his/her private capacity as an independent party.
- An Inspector-General who is responsible for the Councils inspectorate functions, and is appointed as an ex-officio/non-voting member.
- The Director General, or a delegated Deputy Director General, from the following departments:
    - Department of Defence.
    - Department of Trade and Industry.
    - Department of Foreign Affairs.
    - Department of Finance.
    - Department of Safety and Security.
    - South African Secret Service.

- Experts may be included from the following fields, and who cannot delegate their responsibilities:
    - Chemical Expert.
    - Biological Expert.

- Dual-use Expert.
- Small arms and ammunition Expert.
- Explosives, Pyrotechnics or Teargas Expert.

The Council should meet once per month with the secretariat provided from the third level structure. The Chairperson should be vested with intercessional powers to review urgent permits.

Functions. The Council should have the following powers:

- Approval of permits as authorised by the NCACC.
- Making recommendations to the NCACC on extraordinary cases.
- Presenting a monthly report to the NCACC on all permits approved, as well as country trends and regional profiles.
- Recommending policy, legislation, processes and procedures to the NCACC.
- Responsibility and oversight of the Processing Unit.
- Presentation of an Annual Report to Parliament, once approved by the NCACC.

LEVEL 3: DEPARTMENTAL REVIEW

A Departmental Review Committee, comprising of nodal points from the intelligence structures and the Departments of Defence, Foreign Affairs and Trade and Industry, will review all applications in order to assist the Council in its decision making. This close inter-departmental co-operation will occur through the establishment of an Interdepartmental Review Committee.

LEVEL 4: ARMS CONTROL DIRECTORATES AND PROCESSING UNITS

Structure. The processing unit level of the national arms control structure should be situated within the Defence Secretariat, reporting directly to the Chairperson of the NCACC. The processing unit should be comprised of the following sub-structures able to process and evaluate applications for import, export, transit and manufacturing permits:

- A sub-structure capable of doing research, formulating policy and proposing legislation.
- A sub-structure capable of ensuring compliance within industry to arms control agreements, legislation and regulations and can undertake monitoring actions.
- A sub-structure capable of evaluating and processing applications that concern Weapons of Mass Destruction and Dual-use (Part Two).
- A sub-structure that is capable of processing applications that concern Conventional Armaments.
- A sub-structure that is capable of co-ordinating the submission of applications to the NCACC relating to the import, export and transit of commercial weapons and ammunition, but not including the Central Firearms Register.
- A sub-structure that is capable of evaluating and processing applications that concern teargas, explosives and pyrotechnics.

The processing unit should have a centralised and integrated information system with a centralised and integrated database. Processing units should be competent to fulfill the following functions in order to process and evaluate applications:

- Providing the Secretariat for the NCACC and Arms Control Council.
- Processing all permit applications and providing a centralised nodal registration point.
- The referral of all applications to the Arms Control Council and if so required, to the NCACC, and the

issuing of permits for approved applications.

- Undertaking research on all arms control issues.
- Preparation of policy inputs to role playing departments of arms control and compliance.
- Assisting the Department of Foreign Affairs with preparing South African reports to International Treaties and Regimes as required, in line with South Africa's international obligations and undertaking information exchange with the arms control structures of other countries..
- Preparing and presenting monthly reports to the NCACC and the annual report to Parliament on behalf of the Arms Control Council.
- Liaison with the Inspectorate and the monitoring of end-use, end-user and end usee certificates, as well as arranging visits on behalf of International Inspectors.

INSPECTORATE

An independent inspector with the competence to investigate all arms control matters should be appointed by the NCACC. The Inspector will be accountable to the NCACC and be an ex-officio member of the Council. The functions of the Inspector will include:

- Monitoring the activities of the Arms Control processing and evaluation units.
- Monitoring the activities of South African defence related industry companies.
- Responsibility for ensuring compliance with South African law and international obligations.
- Liaison with the Auditor-General.

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CHAPTER SEVEN

THE RESTRUCTURING AND TRANSFORMATION OF DEFENCE-RELATED INDUSTRY

INTRODUCTION

In September 1995 Cabinet released a discussion document on the restructuring of state assets. The document lists a set of objectives for the restructuring of state assets and spells out a four-step implementation process. The objectives include the following:

- To promote economic growth.
- To create wider ownership in the economy.
- To mobilise private-sector capital.
- To reduce debt.
- To enhance the competitiveness of state enterprises.
- To promote fair competition.
- To finance growth.
- To meet the requirements for competitiveness.
- To fund the Reconstruction and Development Program.

The discussion document also divides state assets into three categories;

- Assets with a clear public policy or function to provide services (e.g. Eskom).
- Assets with a public policy or strategic dimension (e.g. Denel).
- Assets with no public policy or strategic dimension (e.g. Sun Air).

Assets in the first category will only be restructured once sectoral policy has been substantially developed. Assets in the last two categories will be treated as ideal targets for restructuring (including privatisation) and their restructuring will start along with the development of sectoral policy.

During February 1996 government and labour concluded the National Framework Agreement at the National Economic and Development Labour Council (NEDLAC), which contains agreed principles and procedures to guide the restructuring of state assets.

A key component of the government's macroeconomic strategy, Growth, Employment and Redistribution (GEAR), which was presented in June 1996, is to accelerate the restructuring of state assets in order to optimise investment resources.

RESTRUCTURING THE PUBLIC SECTOR DEFENCE RELATED INDUSTRIES

Within the public sector defence related industries there are four categories of state assets that could be considered for restructuring (including privatisation):

- Denel (including its divisions and subsidiaries).
- Armscor subsidiary companies and facilities (IMT, Gerotek, Alkantpan, MCTI, Protechnik Laboratories, Genan, Ergotek, Hazmat Protective Systems).
- SANDF industrial facilities (e.g. Naval Dockyard, Simon's Town).
- Government research facilities (e.g. Aerotek).

Guiding Principles for the Restructuring of the Public Sector Defence Related Industries

The restructuring of the public sector defence related industries should be determined within the context of government's overall policy framework for the restructuring of state assets including the National Framework Agreement

Restructuring should be consistent with the principles and features of other national policy initiatives, including GEAR and the Reconstruction and Development Programme (RDP).

The restructuring of the public sector defence related industry should be integrated with national policy processes in other government departments (e.g. trade and industry, labour, and science and technology).

Decisions about restructuring should be seen within the context of government policy towards defence related industries

The Ministry of Public Enterprises, in conjunction with the DoD and the DTI, should be responsible for formulating and implementing policy on restructuring.

The aims and objectives of the restructuring should be clearly articulated, and should be developed in consultation with all relevant stakeholders, including the defence related industries (e.g. AMD), labour and civil society.

Government needs to articulate a clear vision for the future of defence related industries, particularly the extent to which it is prepared and willing to support these industries

Government needs to be clear at the outset about the aims of restructuring. These could include

- To maximise revenue for the state.
- To obtain the maximum benefit for the economy.
- To improve efficiency and economy in business processes.
- To exploit the industry's strengths and enhance its competitiveness.
- To redistribute wealth and support black economic empowerment strategies.
- To ensure the retention of strategically essential capabilities and technologies.

RESTRUCTURING DENEL PTY (LTD)

There are a number of options for the restructuring of Denel Pty (Ltd)

Option A: Complete Privatisation. The state sells 100% of the share capital in Denel or in its constituent divisions and clusters (e.g. Aerospace, Heavy Ordnance, Light Ordnance, and Informatics). This restructuring option is currently being pursued with respect to some other state-owned enterprises (e.g. Aventura, Sun Air).

Option B: Partial Privatisation. The state sells less than 100% of the share capital in Denel or in its constituent divisions and clusters. This restructuring option is currently being pursued with respect to other state-owned enterprises (e.g. Telkom, Airports Company).

Recommendations for Restructuring Denel Pty (Ltd)

Government’s preferred restructuring option is to break up Denel as a single corporate entity and sell off less than 100% of the shares in each cluster (e.g. aerospace, heavy ordnance, light ordnance) or divisions as separate entities.

Those clusters or divisions that are easy to privatise, or those defence-dependent divisions, which are attractive to local and foreign investors, will be restructured first. The revenue from these sales will be used to restructure the remaining divisions in order to prepare them for the market. Given the high degree of inter-linkage that exists between most of Denel's divisions, selling off clusters or divisions as single corporate entities, might make it difficult for many divisions to survive, which in turn might reduce their attractiveness to prospective investors. This approach to utilise the funds realised, might however be problematic in that the Treasury may be unwilling to allow the proceeds from the restructuring of some divisions to be used to finance the restructuring of other less 'attractive' divisions.

The restructuring of Denel may involve a number of different, or complementary strategies such as a public share offer, various different types of employee ownership schemes, a sale to a single local or foreign investor or strategic equity partners, management share options or preferential share options for disadvantaged groups (as in the case of Telkom and Airports Company).

In order to achieve economies of scale, obtain new technologies and gain entry to international markets, Government will encourage rationalisation within the public and private sectors of the local industry coupling this to joint ventures with overseas partners and new local empowerment equity partners. Foreign government industrial participation obligations arising from major defence equipment replacement programmes offers an ideal opportunity to achieve the above.

Government will design a clear policy framework that specifies obligations and duties for Denel’s potential new strategic equity partners so that the broader socio-economic objectives of restructuring (e.g. redistribution) can be realised.

If government decides to implement share ownership schemes, or preferential share offers for disadvantaged groups, government will have to develop the framework to prevent the immediate sale of these shares, especially to foreign investors. Government should consider the issue of management share options with respect to the restructuring of the various Denel divisions as separate corporate entities.

To ensure the retention of strategically essential technologies and capabilities, government will consider issues such as ownership of immaterial property rights, and foreign ownership of domestic defence firms. In this case, in terms of a public share offer, or the sale to a single investor, government may wish to limit the amount of equity that foreign individuals or investors are allowed to own in each defence-dependence cluster or division that is privatised.

It is less strategically important for government to limit the amount of equity that foreign investors are allowed to own in Denel's clusters or divisions that have no defence business.

A key issue concerns the ownership of immaterial property rights. Currently the DoD owns the immaterial property rights, while Armscor has custody of the property rights on behalf of the DoD. This issue will have to be carefully considered and addressed before any restructuring of Denel (or other parts of the public sector defence related industry) can take place.

RESTRUCTURING ARMSCOR SUBSIDIARY COMPANIES AND GOVERNMENT RESEARCH INSTITUTES

There are parts of the public sector defence related industries (Armscor subsidiary companies and Government Research Institutes) that are extremely difficult to restructure (or privatise) because they are not commercially viable, or because they are deemed to be of strategic importance.

For these organisations there are a number of restructuring options which Government may consider.

- Government may decide to maintain the status quo in terms of the size, structure and ownership of Armscor and subsidiary companies (Government Owned / Government Operated).
- The state could retain 100% ownership, but a private sector firm could manage and operate the company or institution on behalf of the state for a user fee paid by the state (Government Owned / Company Operated).
- The state could retain at least 50% of the equity and sell the balance to a private local or foreign investor or strategic equity partner (Joint Venture / Strategic Equity Partner).
- The company or institution could be sold to a private investor, and then the state would guarantee to buy back services and/or products from the company or institution (Complete Privatisation).

Decisions regarding the above will depend to a large extent on Government's overall policy towards the defence related industry.

Restructuring SANDF Industrial Facilities

Government could consider restructuring some or all of the SANDF's industrial facilities. There are a number of options for restructuring SANDF industrial assets.

- The state could retain 100% ownership, but a private sector firm could manage and operate the facility on behalf of the state for a user fee paid by the state.
- The state could retain at least 50% of the equity in the facility and sell the balance to a private local or foreign investor or strategic equity partner.
- The facility could be completely sold to a private investor, and then the state would guarantee to buy back services from the facility.

Each facility should be restructured on a case-by-case basis. The state may however want to prohibit (or limit) foreign ownership of certain strategic industrial facilities.

RESTRUCTURING OF THE PRIVATE SECTOR DEFENCE RELATED INDUSTRY

As discussed above, a large component of the South African defence industrial base is located in the public sector, particularly in Denel, Armscor's subsidiary companies, government research institutions and SANDF industrial facilities.

A restructuring of the public sector defence related industries, including complete or partial privatisation, will have a profound effect on the nature, composition, ownership, structure and profitability of the domestic defence market.

Government will therefore have to consider how the restructuring of public sector defence related industries will impact on private sector defence related industries.

Government should not dictate the nature, pace or process of restructuring of the private sector defence related industries which may occur as a result of the restructuring of the public sector industry.

However, if the private sector defence related industries wish to alienate immaterial property rights or technology which are owned, or part owned, by the SANDF, then they will have to obtain written permission from the Ministry of Defence (see section on Immaterial Property Rights and Ownership of Technology).

THE BROAD-BASED RESTRUCTURING AND TRANSFORMATION OF DOMESTIC DEFENCE RELATED INDUSTRIES

Government (particularly the SANDF) is the single largest, and sometimes the only client of the domestic defence related industries. Therefore it has a number of measures at its disposal to assist and influence the broad based restructuring and transformation of the domestic defence related industry.

In this context broad based restructuring and transformation refers to fundamental changes in the structure, composition, ownership, profitability and outputs of domestic defence related industries.

Measures that can assist with this include national policies on procurement, industrial participation and labour and employment issues; and departmental policies related to acquisition, immaterial property rights, international joint ventures, government to government agreements, and diversification and conversion.

These various measures should be used to assist and influence the broad-based restructuring and transformation of defence related industries in order to reflect South Africa's demographic, political, economic, social and historical realities.

National Procurement Policy and MoD Policy on Affirmative Procurement

In April 1997 the Ministry of Finance and the Ministry of Public Works issued a Green Paper on Public Sector Procurement Reform in South Africa (see Chapter 2). This Green Paper, if adopted, will have profound implications for procurement policy in the DoD.

In October 1996 the Ministry of Defence released a policy document on affirmative procurement (see Chapter 2). This MOD policy document states that the MoD will give preference to those companies that have progressive internal empowerment policies and practices (e.g. affirmative action and equal opportunity). The MoD will similarly give preference to those defence contractors, which support capacity-building measures in disadvantaged communities.

This affirmative procurement exercise will be guided, monitored and controlled by the Secretary for Defence. In the case of defence related industry organisations that are responsible to the Minister of Public Enterprises, those organisations will be subject to any departmental policy formulated, in consultation with the Secretary for Defence, by that Minister.

Government is committed to seeing the principles of affirmative action being applied to defence related industries and in a broader context, to economic empowerment of previously disadvantaged groups. This includes redressing the imbalances created by previous practices arising from all forms of discrimination with

respect to race, gender and disability.

Defence related industries should be committed to redressing previously created imbalances in the working population of South Africa. The industries should support government initiatives to encourage previously disadvantaged persons as entrepreneurs, owners and managers of productive assets and wealth.

National Industrial Participation and Defence Industrial Participation

In 1997 Cabinet approved national industrial participation (IP) policy. The DoD in conjunction with the DTI (see Chapter 2) has also approved policy on defence industrial participation (DIP). The DoD's industrial participation policy is consistent with, and integrated into, national industrial participation policy.

The objectives of DoD industrial participation are to advance national industrial and economic objectives through the leverage of economic benefits and to provide support for the development of South African industry at large.

Defence Industrial Participation (DIP) programmes are structured to provide direct support for sustainable indigenous defence related industries in order to maintain strategically essential technologies and capabilities as identified and prioritised by the SANDF (see Chapter 4).

The DoD, in conjunction with the Department of Trade and Industry, will negotiate, manage and control all inward and outward defence industrial participation programs.

Labour Relations

The Labour Relations Act No 66 of 1995 (as amended) seeks to resolve conflict in the workplace via mechanisms for negotiation, mediation and reconciliation. The Act is applicable to all employees and employers in the Republic, including the Public Service, with the exception of members of the SANDF, the National Intelligence Agency and the South African Secret Service. As such, it governs labour practices in the entire defence related industry, inclusive of civilians in SANDF installations, but excludes uniformed members of the SANDF. The rights of Civilians in SANDF installations may, however, be limited through the classification of their posts as essential service posts.

Bargaining Councils. The Act provides for the establishment of a bargaining council for a sector or area, where one or more trade unions and one or more registered employers' organisation adopt a motion to establish such a bargaining council. The State may also be a party to such a bargaining council if it is an employer in the sector and area in which the bargaining council is established. The powers and responsibilities of the bargaining councils are described in Section 28 of the Act.

Workplace Forums. The Act provides for the establishment of a workplace forum in any workplace in which the employer employs 100 or more workers. A workplace forum seeks to promote the interest of all employees and enhance efficiency, and is entitled to be consulted on activities within the workplace and participate in joint decision making. This is described in greater detail in Sections 84 and 86 of the Act. A workplace forum is entitled to be consulted on:

- Restructuring of the workplace, including new technology and methods.
- Changes in the organisation of work.
- Partial or total plant closures.
- Mergers and transfers of ownership insofar as they have an impact on the employees.
- Dismissal of employees for reasons based on operational requirements.
- Product development plans.
- Export promotion.

Dispute Resolution. The act envisages that disputes are resolved via mechanisms of conciliation, mediation and arbitration before industrial action is embarked upon (e.g. a strike by employees or lockout by employers). Members of essential services are compelled to enter compulsory arbitration in the case of unresolved disputes.

Basic Conditions of Employment Bill

The government has prepared the Basic Conditions of Employment Bill, which was discussed within the NEDLAC forum and in April 1997, was presented to Cabinet. It is envisaged that the bill will repeal the Basic Conditions of Employment Act of 1983 and the two subsequent amendments in 1992 and 1993. The bill applies to all employers and employees, yet excludes (uniformed) members of the SANDF, the National Intelligence Agency, South African Secret Service and unpaid charitable workers. When enacted, the provisions of the Bill will be applicable to all companies in the defence related industry.

Occupational Safety

The Occupational Health and Safety Act no 85 of 1993 is applicable in all aspects to the defence related industries.

Industrial Action

As only uniformed members of the SANDF are excluded from the act, the Act applies to both public and private sector workers in the defence related industries. The right to embark on industrial action is not limited in a State of Emergency or of National Defence. Basic fundamental human rights may however if it is necessary and justifiable in an open democratic society. This right may also be limited in cases were the post which the employee holds is classified as an essential service.

States of National Defence and Emergency

Industrial Action during times of National Defence or State of Emergency may be contrary to the national interest at that time. It is recommended that, in times of National Defence or State of Emergency, the defence related industries be declared an essential service and that the right to strike be limited under Section 36 (1) of the Constitution (Limitation of Rights) and that employers and employees be required to enter into compulsory arbitration to resolve unresolved disputes, as provided for in the Labour Relations Act of 1995.

During times of National Defence or State of Emergency the Minister of Defence should promulgate a list of companies which are involved in the production of armaments and which should be excluded from the provisions of Section 36(1) of the Constitution.

Operational and Extra-Territorial Deployment of Civilian Contractors

In the changing defence environment, and in the context of budgetary constraints, civilian technicians and specialists are increasingly being used to maintain defence equipment on an outsourced basis. This means that first, second and third line levels of maintenance are being carried out by civilian contractors. Should the SANDF be deployed extra-territorially, as has already been the case in humanitarian and disaster relief operations, civilian defence contractors have to be deployed with the force to conduct maintenance.

Defence Act

The Defence Act, when amended due to the Defence Review and changing defence policy, should cater for the administration and discipline of civilian contractors, when deployed extra-territorially with the SANDF.

Consideration should be given to the new Defence Act being made applicable to the administration and discipline of civilian contractors when deployed extra-territorially with the SANDF.

Similarly, in the case of peace support operations, all Status of Force Agreements, agreements between the UN and troop contributing nations and any other bi-lateral or multi-lateral agreements that are reached, should provide for, cover and include civilian contractors deployed to the area of operations with SANDF forces.

Insurance and Medical

Many of the medical and life insurance policies that are held by civilian contractors add penalties (or may even be negated) should the insured person be involved in dangerous activities such as parachuting. Extra-territorial deployment of civilian contractors to an area of operations with SANDF forces may similarly prejudice these contractors, making medical and life insurance policies either unobtainable or inappropriately expensive.

Consideration could be given to obligating defence related firms to negotiate adequate coverage for civilian contractors with the providers of medical and life insurance. Consideration should also be given to obligating defence related firms to make up the cost difference on behalf of individual civilian contractors deployed extra-territorially with SANDF forces.

Consideration could be given to the state bearing the cost of providing additional medical and life insurance policies for civilian contractors deployed extra-territorially alongside SANDF forces, should government choose to commit itself to an operation outside the borders of South Africa.

International Joint Ventures

South Africa’s defence related industry is very small by global standards and constitutes less than one per cent of the world defence market. In order to compete internationally, many South African defence firms and companies have entered into joint ventures and strategic alliances with foreign defence companies.

A "Joint Venture" is defined as a contractual arrangement, which involves the purchase or exchange of equity shares and/or the transfer or alienation of technology and immaterial property rights between two firms.

In the context of the globalisation of defence production government will encourage and support joint ventures between local and foreign defence firms. Government will have responsibility for approving all joint ventures between local and foreign defence firms, which involve the transfer or alienation of strategically essential technologies and capabilities, as identified in Chapter 4.

Approval for such international joint ventures must be sought in writing from the Minister of Defence. The Minister of Defence may consult with other government departments before giving approval for such international joint ventures. Approval for such international joint ventures will be consistent with South African law and South Africa’s international legal obligations.

Government will not contribute to the uncontrolled proliferation of armaments and armaments technology through the approval of international joint ventures and strategic alliances between local and foreign defence firms.

Government to Government Agreements

Government to government memoranda of understanding, treaties and defence agreements are essential in forming international joint ventures. They give confidence to the companies involved and demonstrate government’s political support for international joint ventures. Four types of agreements can be entered into:

Defence and military co-operation agreements. Co-operation is agreed to on military and general military issues, such as training and combined exercises.

Defence industrial co-operation agreements. Co-operation is agreed on defence industrial issues, such as research and development or co-operation on a particular project.

Government will enter into agreements with other governments to enable their respective defence related industries to co-operate. Responsibility for identifying defence industrial requirements and establishing guidelines that are pertinent to defence industrial co-operation will reside with the DoD

Close co-ordination will take place with the DFA and DTI, and defence foreign policy objectives should be synchronised with national interests. Close co-ordination will also take place with the defence related industry (e.g. AMD) prior to entering into any agreement on defence industrial co-operation.

Immaterial Property Rights and Ownership of Technology

There has been a significant reduction in R&D funding from the DoD in recent years. In many cases, defence manufacturers have continued to develop the original technology after the DoD withdrew its funding, and have consequently added value to that technology through the application of their own funds.

Currently, government retains ownership of the immaterial rights of the technologies funded by public monies, but no royalty payments have been required to date. Currently, the business plans of South African companies do not usually cater for royalty payments in the defence area, and if payment of royalties is required, it may no longer be profitable for the company to produce that item.

The government cannot demand royalty payments retrospectively, but may require royalty payments from defence firms in future.

Policy Options.

Ownership.

- The state will retain the immaterial rights to state-funded technology and will make such technology available to any of its contractors in either the public or private sector, or sell it to foreign institutions at its discretion.
- The Department of Defence will consider developing policies whereby the immaterial property rights of state-funded technology can devolve to, or be acquired by, private and public defence firms.
- The sale of South African defence firms to foreign purchasers will require the prior written approval of the Minister of Defence where such sales will result in the transfer or alienation of strategically essential state-owned technologies and capabilities.

Royalties.

- The state may invoke its rights to a certain percentage of the value of the contracts for the export of products or technology where the state paid for the technology or product development. This decision to invoke a royalty claim rests with the Secretary for Defence and the members of the AASB. In cases where companies contributed own funds to R&D projects, the intellectual property rights should be shared between the company and the state in a pro rata ratio of their respective contributions. In the case of multi-purpose technology, the company may be required to pay royalties to the state if the technology is used in commercial applications.
- Where products are being positioned for the defence export market, it is essential to ensure beforehand whether any state-owned immaterial property rights are involved. If so, then the state should examine the implications for national security, national competitiveness and any royalties owning to the state before approving such exports.

Conversion and Diversification

In a declining international defence market, defence industries in many developed and developing countries have pursued a number of adjustment strategies, including conversion and diversification.

Conversion implies that the defence firm eventually stops producing goods and services for the local or foreign defence market. It involves the development of new or alternative civilian products using existing defence resources.

Diversification, on the other hand, is an adjustment strategy whereby a defence firm attempts to reduce its dependence on defence business by divesting itself of some defence interests, or by acquiring all or part of the assets or products of civilian companies. This strategy may include mergers, joint ventures and co-production agreements between defence and civilian firms.

Diversification and conversion are regarded as the most effective strategies for ensuring that the resources (capital, labour) previously tied up in the defence related industry are successfully transferred to the civilian sector and/or utilised for civilian purposes.

Diversification and conversion are also important in order to ensure that resources previously tied up in the defence related industry are not wasted or lost, but preserved or retained for the benefits of the country's industrial sector. There are a number of macro and micro level barriers to successful diversification and conversion efforts.

> At a **macro level**, political and environmental conditions, such as a lack of political will on the part of government, or the presence of a severe domestic recession may impact negatively on diversification and conversion efforts.
>
> At a **micro level**, cultural, technological and industrial factors such as the nature of defence firms, and the nature of the defence market may also act as significant barriers to successful diversification and conversion efforts.

The government will consider taking steps to create a policy and economic environment, which is conducive to encouraging diversification and conversion efforts amongst local defence firms.

Government will not, however, interfere or intervene in an individual defence firm's conversion and/or diversification efforts.

Government measures (including policy initiatives) to support diversification and conversion may be used to assist in the broad based restructuring and transformation of the domestic defence related industry.

LEGISLATIVE ENACTMENTS AND AMENDMENTS

Armaments Development and Production Act, No. 57 of 1968

It may no longer be necessary for this Act to provide for the transfer of assets, liabilities, functions, employees etc from the Armaments Board and other bodies to Armscor [Sections 2A, 2B, 2C, 3 (2) (a),4 Abis, 4 Ater and 6 (5)].

The powers of Armscor regarding search, seizure and arrest of persons on its premises may have to be revised in the light of the new Constitution [Section 4B].

The powers of the Minister of Defence in relation to the export, import and conveyance in transit of armaments should be deleted since these matters will be addressed in new arms control legislation [Sections 4C, 4D, 4E and 4F].

If the Minister's power to authorise the manufacture and development of armaments is transferred to the

National Conventional Arms Control Committee, then the sections of the Act referred to in the previous paragraph could be deleted entirely.

The Armscor Act should redefine the role of Armscor as the DoD acquisition agency tasked by the Departmental Acquisition and Procurement Division (DAPD) to do contract management on behalf of the DoD. The Act should further define the relationship between Armscor and the Defence Secretariat and the DAPD as spelt out in the Defence Review.

Reference to the 'Senate' and the 'House of Assembly' should be amended, and references to the 'Legislative Assembly of the Territory of South West Africa' should be deleted [Sections 5 (6) and 8 (4)].

The provisions enabling the prohibition of disclosure of information on armaments should be amended [Sections 8 (4) and 11A]. As currently worded, these provisions emphasise secrecy rather transparency and are therefore inconsistent with Sections 32 (1) of the Constitution and with the Open Democracy Bill.

Armscor should not be exempt from the provisions of the Companies Act or any other law related to companies [Section 12].

New Arms Control Legislation

Legislation is required to give statutory affect to the establishment of the National Conventional Arms Control Committee and new policy and systems for arms control. The legislation should cover the following topics:

- the main principles and objectives of arms control policy ;
- the criteria and guidelines for assessing arms export applications ;
- authority for decision-making in respect of imports, exports etc;
- the composition, powers and functions of the NCACC and any subordinate bodies;
- critical rules and obligations such as those relating to end-user certificates;
- compliance by the defence related industries ;
- the role of Parliament ; and
- enforcement methods (e.g. the role of Customs and Excise).

The legislation should also provide for the establishment of a central arms control agency, depending on the decisions made in respect of the options presented in this White Paper.

If the arms control function of government is to be centralised, as recommended in this White Paper, then existing arms control legislation as described in Chapter 6 will have to be consolidated accordingly.