

Chapter 12

The SA Military Health Services: mandate, activities, main equipment and key personalities



The SA Military Health Service (SAMHS) is the most junior of the SANDF's four services. It is one of the few military medical services independent of the three traditional services and in this way can either be described as "unique" or as an "anomaly." Unlike the army, air force or navy, all combat services, the SAMHS is a combat support service that provides medical, general health and sanitary, as well as limited nuclear, chemical and biological defence support to the other services. It also provides the head of state with personal medical services.

The SAMHS was established as the SA Medical Corps of the Permanent Force of the Union Defence Force in 1912. It was to remain a component of the SA Army until July 1, 1979, when it became a service of equal status with its parent, the SA Air Force and SA Navy, which had established its own naval medical service in 1957. From the 1960s on, the SAMC had become an ever-more autonomous service and in 1970 its chief, the Surgeon General (SG) was promoted to Lieutenant General. Up to that time, the SG had been a major general, already a senior rank. The SA Medical Service was incorporated into the SA National Defence Force on April 27, 1994, and was renamed the SA Military Health Service on June 1, 1998.

What is the core business of the SAMHS?

"To ensure a healthy military community we need to provide a comprehensive, excellent and self-supporting multidisciplinary military health service, which ensures a healthy military community."

Vision

A healthy military community.

Mission

To provide a comprehensive, excellent and self-supporting multidisciplinary military health service, which ensures a healthy military community.

Interpretation of the mission

Provide: Should be seen as ensured and if the SAMHS cannot render service, then outsourcing takes place.

Table 12.2: The SAMHS office.

SURGEON GENERAL OF THE SOUTH AFRICAN MILITARY HEALTH SERVICE (SAMHS) Lieutenant General (Dr) V.I. Ramlakan, DMG, MMS, MMB, OStJ



Lieutenant General Vejaynand Indurjith Ramlakan, popularly known as 'Vejay', was born in Durban in 1957. He started schooling in Durban and matriculated at Naidoo Memorial High in Umkomaas in 1974. He obtained his basic medical degrees from the University of KwaZulu-Natal (KZN) in 1980. His further health qualifications include a Postgraduate Diploma in Health Service Management as well as training by the IRCT in Copenhagen, Denmark, to counsel victims of political violence.

LTG Ramlakan's non-medical qualifications include an Executive Course in Defence Management from the University of the Witwatersrand in 1998 and a certificated Programme in Financial Management from UNISA in 2002. He joined Umkhonto we Sizwe (MK) as an underground operative in KZN in 1977. During this period, he underwent general military training in South Africa and in Swaziland. At the University of KZN, Ramlakan served as the President of the MSRC from 1979 to 1980.

From 1981 until 1983, he was Vice President and General Secretary of the Natal Health Worker's Association, and also a founding member of the United Democratic Front (UDF). As part of the command structures of MK in the then province of Natal, Ramlakan was involved in MK Operation Butterfly. He also held office as a member of the first APMC inside South Africa.

His continued military and active political involvement saw him being incarcerated on Robben Island between 1987 and 1991, where he was a member of the Central Political Education Committee. Ramlakan served as Medical Commander at the ANC National Conference in 1991 and CODESA between 1991 and 1992 before he became Medical Commander for the President Mandela Guard in 1992. Between 1993 and 1994, he served as Deputy Chief of MK Health Service and led the MK military health team for integration into the National Peacekeeping Force and later the South African National Defence Force (SANDF).

In the SANDF, he held the following positions: Director Planning of the South African Military Health Service (SAMHS) between Oct 1994 and Nov 1995; Inspector General of the SAMHS from December 1999 to February 2000; GOC Area Military Health Formation from February to November 2000; Inspector General DOD from November 2000 until December 2004; and SANDF's Chief Director Strategic Planning from January 2005 to his appointment as Surgeon General.

Since the establishment of the SANDF, Ramlakan successfully completed the following courses: Officers' Formative Course in 1995; Battle Handling in 1995; Junior Command & Staff Duties Course (JCS) in 1996; SMC & SD (including PSO and Joint Ops Certificate) as well as the Executive National Joint Staff Course in 1997. Ramlakan was awarded the following military medals: Unitas; Order of St John (UK); Merit Medals: Bronze, Silver and Gold; Internal RSA Operational Medal and the External to RSA Operational Medal. His other special awards include the Edgar Brookes Award for Outstanding Contribution to Human Freedom and Endeavour. As IG DOD, Ramlakan received the international ISO 9001:2000 award. This was the first ever awarding of this prestigious quality award by the ISO to a South African government entity.

General Ramlakan is married and blessed with three lovely children.

Table 12.3: The Surgeon General's biography



WO1 Moses “Bethuel” Sebone is the first Umkhonto we Sizwe cadre to be appointed a Service Warrant Officer. Sebone was born and raised in Alexandra. After being detained several times by apartheid security forces, Dr Beyers Naudé advised Sebone to leave the country. This he did, joining MK in Angola. There he became a medical orderly and qualified as a laboratory assistant and a community health worker.

After his repatriation from Zambia, where he also worked in the National Health Secretariat of the African National Congress (ANC), he joined the SANDF. He became a warrant officer in the logistics environment, having undergone all the military training courses, including Basic Military Training in the new SANDF. He was appointed as Wing Warrant Officer and was among the first Non-statutory Force members to become Command Sergeant Major of the then Northern Cape Medical Command. After serving for more than three years he was recalled to Pretoria and served as the Formation Sergeant Major of Tertiary Military Health Formation. He was later appointed Warrant Officer of the Inspector General of SAMHS, having served nearly three years in his previous post. WO1 Sebone is married to Virginia and has two sons and two daughters.¹

Table 12.4: The WO of the SAMHS’ biography

SA National Defence Force (1994 – present)

- LTG Vejaynand Indurjith Ramlakan 2005-
- LTG Jurinus Janse van Rensburg 2000-2005
- LTG Davidson Masuku 1997-2000
- LTG Daniel P “Neil” Knobel 1994-1997

SA Defence Force (1957-1994)

- LTG Daniel P “Neil” Knobel 1988-1994
- LTG JN Nieuwoudt 1977-1988
- LTG Colin Cockcroft 1969-1977
- MG Eugene Raymond 1960-1969

Table 12.5: Previous Surgeons General

SA National Defence Force (1994 – present)

SA Defence Force (1950-1994)

Table 12.6: Previous WO of the SAMHS

Expand on the role of the SAMHS Office

¹ CPO Dennis Ndaba, New Warrant Officer for the SAMHS, SA Soldier, September 2005.

The role of the Surgeon General’s Office is to provide strategic direction to the Military Health Service Programme by the formulation, promulgation and control of strategy, policies and plans, and the provision of advice by the Surgeon General’s Office in order to prepare and provide the capabilities required by the Chief of the SANDF.

Chief Directorate

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Table 12.: CD ‘s biography

Inspector General, SAMHS

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Table 12.: ’s biography

Expand on the SAMHS’ “capabilities”

The SAMHS capabilities lie in its formations, namely the –

- Mobile Military Health Formation
- Tertiary Military Health Formation
- Area Military Health Formation
- Military Health Training Formation
- Military Health Support Formation
- General Support Base Thaba Tshwane

Mobile Military Health Formation

The Mobile Military Health Formation provides mobile military health support in a multidisciplinary military health combat-ready capacity (including specialised functions for land, air, maritime, clinical evacuation support) and equipment for operational utilisation at short notice, in accordance with the Department of Defence force design, national and international obligations.

- 1 Medical Battalion Group²
Reserve
- 3 Medical Battalion Group
Reserve

² For an explanation on this structure’s organisation and purpose, see Appendix 12B.

- 6 Medical Battalion Group Reserve
- 7 Medical Battalion Group
Provides medical support to the Special Forces and Airborne community. Also provides nuclear, biological, chemical and radiological defence support to the SANDF, SA Police Service, Department of Health, Department of Foreign Affairs and Nuclear Energy Regulator.
- 8 Medical Battalion Group
Supports conventional force preparation exercises and peace support operations.

Tertiary Military Health Formation

The Tertiary Health Formation provides a specialist health service to ensure the development, establishment and maintenance of tertiary military health capabilities within the parameters of relevant legislation as contained in the SAMHS strategy.

- 1 Military Hospital – Thaba Tshwane, Pretoria.
- 2 Military Hospital – Wynberg, Cape Town.
- 3 Military Hospital – Tempe, Bloemfontein.
- Institute for Aviation Medicine – Centurion. The SAMHS is not only responsible for aviation health services to the SA National Defence Force, but also for the licensing of all pilots controlled by the Civil Aviation Authority of South Africa.
- Institute for Maritime Medicine – Simon’s Town. Diving and submarine medicine.
- Military Psychological Institute – Thaba Tshwane. The Military Psychological Institute is tasked to conduct all military psychological research and development within the Department of Defence and is also responsible for conducting assessments on members wishing to join the Department of Defence, as well as those who wish to leave due to medical reasons or any other exit mechanisms in place. The services supplied include:
 - Psycho-strategy,
 - Trauma psychology,
 - Aviation psychology,
 - Specialist selection,
 - Organisational psychology research,
 - Community psychology, and
 - Training.

Military Veterinary Institute – Responsible for the supply of veterinary services, not only to the Department of Defence but also to the SA Police Service and Department of Correctional Services. They supply a large input into the activities of the Department of Defence, especially the environmental aspects, where game is managed on the land of the Department of Defence. Services include:

- Preventative and curative animal health
- Promotion of animal health research

Area Military Health Formation

The Area Military Health Formation provides a comprehensive, excellent, self-supporting, multidisciplinary area military health service through a formation headquarters commanding and controlling nine Area Military Health units to ensure a healthy military community. Services are rendered to:

- The Presidency
- Serving SANDF members
- SANDF dependants
- Retired members
- Services in assistance to other State departments as approved

One area military unit and regional occupational health and safety centre per province: Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape, North West Province and the Western Cape. Answering to this formation are four military base hospitals, 36 sickbays, five regional OHS centres, 42 military medical clinics, 28 health centres as well as a number of sickbays aboard ships.

Military Health Training Formation

The Military Health Training Formation provides a military health training service to ensure the development, establishment and maintenance of military health training capabilities within the parameters of relevant legislation and policies. The formation controls the following schools:

- School for Military Health Training
- School for Military Training – The School for Military Training presents courses ranging from basic training to SA Military Health Service Senior Management courses.
- SAMHS Nursing College
- SAMHS Band
- Military Health Combat Training Centre, Lohattha
- Joint Physical Training, Sports & Recreation Training Centre

Military Health Support Formation

The Military Health Support Formation provides military health support, warehousing of pharmaceuticals, sundries, SA Military Health Service mobilisation equipment and unique stock, procurement of SA Military Health Service unique products, materials and services, an electro-medical equipment asset management service for Area and Mobile Military Health Formations, and the directing of SA Military Health Service product systems and co-operative common logistics.

The Formation consists of the Military Health Support Formation Headquarters with an Electro-medical Service Centre attached to the structure, the Military Health Base Depot consisting of the Military Health Depot and the Military Health Mobilisation Depot, and the Military Health Procurement Unit.

- Military Health Base Depot – Acquisition, stockpiling and distribution of medical supplies.
- Military Health Procurement Unit

General Support Base Thaba Tshwane

Thaba Tshwane General Support Base provides general base support services to identified units and other identified clients so as to sustain and maintain the approved force design and structure.

- Physical Protection Service
- Physical Training, Sport and Recreation Service
- General Training Support
- Procurement Service
- Logistic Control Service
- Supply Support Service
- Transport Service
- Facility Management Service
- Hospitality Service
- Technical Support Service

Does this structure support the SAMHS’s ability to support the services?

To the interested outsider the SAMHS’ structure appears sound. However, the SAMHS needs more than just a sound structure to support the other services. Also required are trained and available personnel. A confidential 2005 report on the state of readiness of the SANDF showed some stress in the SAMHS regarding the latter aspect. “The training of especially Emergency Operational Care Practitioners (Ops Medics) is problematic. Members that comply to the level of knowledge in science-related subjects are in short supply and once trained are recruited by either the Dept of National Health or the private sector offering substantially higher remuneration than that in the SANDF.” The same report noted some deployment fatigue among some medics: “In some cases members deliberately fail the refresher courses, as they have to be nationally registered to practice, by so doing they also avoid further deployments.”

Expand on the SAMHS's musterings

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Table 12.: SAMHS musterings

What is the rank, racial and gender breakdown of the SAMHS?

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What are the SAMHS's activities on any given day?

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Expand on some of the legislation particularly applicable to the SAMHS

Marriage Act, 25/1961 (as amended).

Recognition of Customary Marriages Act, 120/1998.

Health Professions Act, 56/1974 (as amended).

Health Act, 63/1977 (as amended).

Medical Schemes Act, 131/1998 (as amended).

Pharmacy Act, 53/1974 (as amended).

Occupational Health & Safety Act, 85/1993.

Medicines and Related Substances Control Act, 101/1965 (as amended).

SA Medical Research Council Act, 58/1991.

Nursing Act, 50/1978.

Chiropractors, Homeopaths and Allied Health Service Professions Act 40/1995 (as amended).

Choice of Termination of Pregnancy Act, 92/1996.

SA Institute of Drug-Free Sport Act, 14/1997.

Prevention and Treatment of Drug Dependency Act, 20/1992 (as amended).

Births and Deaths Registration Act, 51/1992.

Child Care Act, 74/1983.

Inquests Act, 58/1959.

Criminal Procedure Act, 51/1977.

Human Tissue Act, 65/1983.

Mental Health Act, 18/1973 (as amended).

Mental Health Care Act, 17/2002.

Road Traffic Act, 29/1989 (as amended).

National Road Traffic Act 93/1996 (as amended).

Sterilisation Act, 44/1998.

Aged Persons Act, 81/1967 (as amended).

Domestic Violence Act, 116/1998.

Government Notice R2278 of December 3, 1976: Ethical Rules of the old Medical and Dental Council.

Government Notice R667 (R687) of May 15, 1998: Community Service
Government Notice R668 (R688) of May 15, 1998: Community Service
Government Notice R809 of June 19, 1998: Designation of Facilities for Surgical Termination of Pregnancies.

Explain the SAMHS' educational and training system

The ROTS

The SAMHS is pioneering a Reserve Force Officers Training System (ROTS) for the SANDF to entice suitable candidates into the Military Health Reserve Force, and to act as a feeder system of health professionals.

The University Reserve Training Unit (URTU) pilot programme commenced at the Universities of Pretoria and the Witwatersrand in 2005 with 30-60 first year students identified for military and medical training. Col (Dr) Gareth Hyde in 2005 said he was surprised with the enthusiasm with which the idea had been received. "The women are as enthusiastic as the men." Senior medical students were also keen on the idea, Hyde, a reserve officer, added. "There is complete enthusiasm for the idea." In time the ROTS and URTU's will be extended to other universities and other services.

Show the SAMHS's brevets

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Table 12.: SAMHS brevets

What does it take to become an "ops medic"?

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How many doctors are there in the SAMHS?

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Why is it important the SAMHS be run by a qualified medical doctor?

Legal and ethical reasons seemingly require one medical doctor to report to another. In the same way pilots do not respect the professional aviation opinion of superiors who are not pilots, doctors tend only to respect the judgement of other doctors. Hence, air forces tend to be run by pilots and military health services by doctors.

Provide examples of the SAMHS' tables of organisation and equipment

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What is the SAMHS' main equipment?

The SAMHS' main equipment consists of that medical and surgical equipment issued to its military and base hospitals, sick bays, field facilities and CBD (chemical & biological defence) teams. With regards to the latter, the containers, tents and weather havens containing the equipment must be included, as well as the SAMHS' armoured and unarmoured ambulances and logistics vehicles.

A confidential 2005 report on the state of readiness of the SANDF made for tragic reading on that score, especially when it came to the SAMHS. "Most of the deployment equipment on the SAMHS inventory are old and nearing the end of its economic lifecycle. It (sic) is suffering defects more often and is expensive to keep running as the production lines for mine protected ambulances have been closed a decade..." In addition, the equipment of the clinical wing of the SAMHS' only field hospital was mostly beyond economical repair, as was all four field surgical theatres and both sterilisation trailer units. Of the six resuscitation posts, two were listed as serviceable and four as repairable. The SAMHS' two field laboratories and two X-Ray units were only received "planned maintenance". The Service's seven logistics vehicles were listed as "two serviceable, five repairable." A US-donated weather haven field hospital was partially deployed in Burundi in that year (operations have since wound down) but its full deployment is stymied by a US requirement in the End User Certificate, sprung – according to the report – at the last moment, for American authority to move or relocate the weather haven system and the equipment contained.

Although the status of the SAMHS' CBD equipment was not discussed in detail, the report said, in passing, that rejuvenation was in progress and new stock was being procured to maintain the required defensive capability.

SAMHS facilities, although not quite the topic under this heading, were also, in some cases, in a severe state of disrepair. For example, the Military Health Depot does not comply with current health legislation "and should this facility be closed, no health depot will exist for the support of deployments." On a more positive note, it added that the matter was being addressed.

A look at the SAMHS' holdings in more detail:

Weather haven field hospital

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Dornier containerised field hospital

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Mfezi Armoured Ambulance

Type:	Mine protected armoured ambulance.
Numbers:	132, but only 40% in service, one beyond economical repair.
Manufacturer:	BAE Systems Land Systems OMC.
Dimensions	
Length:	6.56m.
Width:	2.48m.
Height:	3.03m.
Wheel base:	3.91m.
Ground clearance:	0.35m (depending on axles).
Mass	
Tare:	12.4mt.
Payload:	3.6mt.
GVM:	16mt.
Seating:	Driver, two orderlies.
Litters:	Two with two stretchers, meaning four patients can be carried prone.
Fuel:	400 litres.
Water for crew:	litres.
Protection levels	
Ballistic:	Proof against 7.62x51mm Ball.
Mine:	Will survive 3 x TM57/21kg TNT under any wheel, 2 x TM57/14kg TNT under hull.
Performance:	
Top speed:	90km/h.
Range on single refuelling:	1000km (road), 300km (cross country).
Acceleration:	nn.
Turning circle:	19m.
Ground pressure:	nn.
Power/mass ratio:	nn.
Can climb a __ vertical step:	0.6m.
Can cross a __ wide trench:	1.06m.
Can ford water __ deep:	1.2m.
Can climb a gradient of __ deg:	70.
Can traverse a gradient of __ deg:	18.
Drive train	
Engine:	ADE 449T 9.51 litre 5-cylinder diesel, 184kW @ 2100 rpm.
Transmission:	ZF S6-90 syncromesh, six forward, one reverse.
Transfer Box:	Two-speed pneumatic.
Variants:	None but several, including APC, proposed.
Armament:	None fitted as standard. Four gun ports on each side and two in rear doors for self defence. Co-driver's position can also be equipped with MG firing through a gimbal mount in front window.
Comment:	A superb vehicle, now regrettably coming to end of its working life. Its ability to continue despite battle damage and ease of repair after even massive anti-tank mine blasts are legendary – largely because of its v-shaped monoque, chassis-less hull and 52mm windows.

Table 12.: The Mfezi

Casspir Armoured Ambulance

Type:	Mine protected armoured personnel carrier.
Numbers:	About 17 in service.
Manufacturer:	BAE Systems Land Systems OMC, previously TFM.
Dimensions	
Length:	6.9m.
Width:	2.45m.
Height:	3.125m.
Wheel base:	4.2m.
Ground clearance:	0.33 or 0.37m (depending on axles).
Mass	
Tare:	9.480mt.
Payload:	1.4mt.
GVM:	10.88mt.
Seating:	Driver, co-driver, up to 12 passengers.
Litters:	nn.
Fuel:	220 litres.
Water for crew:	200 litres.
Protection levels	
Ballistic:	Proof against 7.62x51mm Ball.
Mine:	Will survive 3 x TM57/21kg TNT under any wheel, 2 x TM57/14kg TNT under hull.
Performance:	
Top speed:	98km/h.
Range on single refuelling:	770km.
Acceleration:	nn
Turning circle:	17m.
Ground pressure:	
Power/mass ratio:	11.4kW/t.
Can climb a __ vertical step:	0.5m.
Can cross a __ wide trench:	1.06m.
Can ford water __ deep:	1m.
Can climb a gradient of __ deg:	27.
Can traverse a gradient of __ deg:	13.5.
Drive train	
Engine:	Mercedes Benz OM352A 4-stroke turbo-charged, 6-cylinder diesel, 124kW (166hp) @ 2800 rpm.
Transmission:	Mercedes Benz MB G3 manual
Transfer Box:	Mercedes Benz VG500-3W, 2-speed, 4x4
Variants:	Variants include the Blesbok cargo carrier, Duiker tanker, Gemsbok recovery, as well as a 81mm mortar prime mover and ambulance.
Armament:	None fitted as standard. Six gun ports on each side and two in rear doors for self defence. Some equipped with unmanned turret fitted with MG above co-driver's position and fired from within the vehicle. Co-driver's position can also be equipped with MG firing through a gimbal mount in front window. A barbette can be fitted in front of commander's hatch and these can be equipped with one or more machine guns of 5.56mm to 14.5mm.
Comment:	A superb vehicle, now regrettably coming to end of its working life. Its ability to continue despite battle damage and ease of repair after even massive anti-tank mine blasts are legendary – largely because of its v-shaped monoque, chassis-less hull.

What is still in the pipeline?

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Does the SANDF need a military health service – and should it be an independent service?

Yes – and no. The SANDF, as is the case with all militaries – need a dedicated health service. James F Dunnigan in his seminal *How to Make War*³ notes that “combat does not destroy armies, it merely hastens the process. The real killer is day-to-day wear and tear.” Turning to military health he notes: “Annually, disease and non-combat injuries often cause far more loss than the dangers of combat. ... As long as the troops are living in primitive field conditions, they are more prone to disease and injury.” And: “non-battle casualties, primarily from disease and especially in tropical and winter conditions, regularly reach 200-500 men per day per 100,000 strength. Malaria alone can cause nearly 200 casualties a day. Another constant menace in populated areas is venereal disease, which can render ineffective as many as 40 men a day. Injuries often exceed battle losses. The troops tend to get careless in the combat zone. Vehicle and weapons accidents were so common in the past that they often reached 20 men per day per 100,000 troops.” Battle casualties during World War Two ran from a low six men a day per 100,000 in North Africa to 200 Germans a day in Russia. The Russian rate was double that. In World War one the figure ranged into the thousands a day. Military health is more than just battle casualty handling and preventing & curing disease among humans and animals. Also involved is mental medicine, hygiene, dentistry and the whole panoply of modern sanitation. All of this a modern military must provide. “Just as the commanders who ‘butchered’ their men in battle stand accused of military incompetence, so do those whose neglect of basic military precautions imposed suffering without need.”⁴

As a result, no properly organised modern military is without a medical establishment. However, whether such an establishment needs to be a Service on par with the SA Army, SA Air Force and SA Navy needs to be questioned. Other than South Africa, only Belgium seems to have a medical service with a life apart from a parent Service.

In the 1970s, before the age of jointness, an argument could be made – and was – that it was redundant for each service, or at least, the SA Army and SA Navy to each have a medical service with training and other facilities that duplicated. The same argument was made in the late 1990s regarding human resources, signals, and other support services. These were then grouped into the Joint Support Division while the Chaplain’s Service – also always acting in support of the main services, but quasi independent of the SA Army – and military lawyers were grouped into the SANDF’s Corporate Services Division. An argument can be made with some conviction that the

³ James F Dunnigan, *How to Make War*, A comprehensive guide to modern warfare in the 21st Century, Fourth Edition, Quill, New York, 2003.

⁴ Geoffrey Regan, *The Guinness Book of Military Blunders*, Guinness, London, 1999.

SAMHS should become part of the Joint Support establishment, on par with the Command Management Information Systems and Military Police Agency.

The following are projects currently underway in the South African Military Health Services (SAMHS):

QUESTION 1046

WRITTEN REPLY

DATE OF PUBLICATION: FRIDAY, 26 JUNE 2007

INTERNAL QUESTION PAPER NO.: 23-2007

ADV H C SCHMIDT (DA) TO ASK THE MINISTER OF DEFENCE

PROJECT MUTCHKIN:

Short Description: Project MUTCHKIN will provide a Chemical, Biological and Radiation Defence Capability for the DOD.

Project Status: The project is currently in the design phase and the Project Study is being conducted.

Number of Equipment: The project is planned to provide 6 Urban defence systems and 3 Conventional defence systems.

Rand Value of Project: The estimated cost of the project is RM 422 although currently only RM 198 is on budget over the next 13 years,

PROJECT BEGINNING

Short Description: Project BEGINNING will provide a Defence Aeromedical and Specialist Training Facility for the DOD.

Project Status: The project is currently in the pre-concept phase and the Preliminary Study is being conducted. The project has currently no formal acquisition baseline status

Numbers of Equipment: The project is planned to provide a facility which has the following capabilities:

High Performance Human Centrifuge.

Hypobaric capability.

Disorientation demonstrator.

Helicopter disorientation trainer.

Night vision trainer.

Ejection simulator / trainer.

Underwater cockpit escape trainer (including swimming pool).

Anti G Straining Manoeuvre trainer.

Barány chair.

Specialised gymnasium equipment.

Hyperbaric chamber.

Appropriate medical / biometric monitoring equipment.

Rand Value of Project: The estimated cost of the project is RM 400 although there are currently no funds on budget.