

SANAE 51

THE NEWSLETTER OF THE 51st SOUTH AFRICAN NATIONAL ANTARCTIC OVERWINTERING EXPEDITION



THE ROAD TO SANAE 51

Ten strangers, each with their own idea of what life in Antarctica will be like, thrown together in a team and left in this snowy desert for 14 months. This is how their journey started...

Polar exploration is at once the cleanest and most isolated way of having a bad time which has yet been devised. — Cherry-Garrard.

This is definitely NOT what most of us were thinking when we signed up for this job!

Our adventure began the morning of the 14th of November 2011, when ten nervous faces squished into our tiny new office, ready to conquer the infamous "Antarctica". Firstly though, we had to conquer the coffee machine, and a few weeks of team training before we could set off on our actual expedition...Read about our endeavors in this first installment of our series of newsletters

In these newsletters, we aim to take you along on the journey of our lives, not only to make you jealous, but to inform you of what life and work here at SANAE IV is like.

Enjoy! ☺

- Stefanie Strachan (editor)



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MEET THE TEAM

MUGSHOT	ABOUT
	<p>Name: Jako Bester Age: 29 Job at SANAE: Team leader and medical doctor - Somebody needs to keep an eye on this crazy bunch! Superpower: ...'Skadoosh'</p>
	<p>Name: Vincent Rademeyer Age: 37 Job at SANAE: Deputy Team Leader and senior diesel mechanic Superpower: The walking swiss army knife</p>
	<p>Name: Braam Beukes Age: 30 Job at SANAE: Space Weather Engineer (involving VLF instruments, magnetometers and the aurora camera) and banana bread baker. He also enjoys helping to subdue the persistent hunger of that great water making machine called the 'Smelly'. Superpower: Super Sluiper of Agulhas I</p>
	<p>Name: Elrich Delpport Age: 48 Job at SANAE: Communications officer - I have been appointed, the communications officer or if you prefer the radio tech for the SANAE 51 overwintering team. My wish for myself as well as that of the team is, that all experience and knowledge that was gained in the past will help us through the times ahead. Superpower: Talking to animals</p>
	<p>Name: Johan du Plessis Age: 38 Job at SANAE: Mechanical Engineer - SANAE is largely a mechanical installation, with vehicles, generators, heat exchangers, water supply, water treatment and a lot of details in between. Together with the diesel mechanics we will do our utmost to keep everything running smoothly. Apart from work I hope to make the most of the huge privilege to experience this unique continent. It is quite rare to see landscapes so untouched and I am looking forward to all the new things I will experience, including Aurora. I also hope this 14 month break from society will leave a positive mark on my life. Superpower: Wait, does all-round awesomeness count?</p>

MUGSHOT

ABOUT



Name: Jonathan Ward

Age: 28

Job at SANAE: Radar Engineer - As the team's Radar Engineer, under the management of the South African National Space Agency's Space Science Directorate, I am responsible for operating and maintaining the base's HF radar, which is part of a global network called [SuperDARN](#), the Super Dual Auroral Radar Network.

I think that this is going to be a very positive experience in my life. I value this opportunity to help further our understanding of the near-space environment and hope to fly the SANSA flag proudly, while working in one of the most wondrous places on Earth.

Superpower: It would have to be...moving things with my mind. Like tying shoes, washing dishes and making coffee!



Name: Mcabango Biyela

Age: 25

Job at SANAE: Meteorologist (South African Weather Service) - I would be performing many tasks involving the Weather observations, collecting the weather data for research purposes and maintaining, calibrating the weather instruments. I would be involved on the study of the earth's atmosphere and how various things affect the weather and climate. Measuring, recording and analyzing the various data to make accurate assessments about the weather. These will help the Scientists, forecasters and researchers globally to do more climate and weather analyses on the continent Antarctica.

Superpower: Coriolis force



Name: Mike Nemutandane

Age: 38

Job at SANAE: Senior diesel mechanic

Superpower: Jedi Knight abilities on all things mechanical

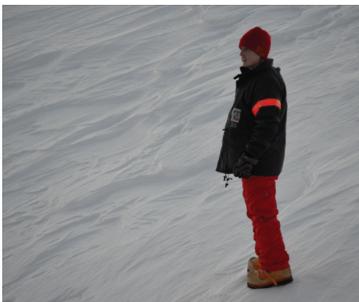


Name: Singa Msimanga

Age: 50

Job at SANAE: Electrical engineer - Maintenance of electrical installations and equipments at and around the base

Superpower: Captain Africa



Name: Stefanie Strachan

Age: 24

Job at SANAE: Cosmic Ray Physicist/Engineer - under the management of North West University, I'm responsible for the maintenance and operations of mainly the Neutron monitor equipment at SANAE.

As the youngest and only girl on our team, I take the assigned role as the SANAE baby sister super serious.

Superpower: Uber-energised-Oompa-loompa-ness

COLD WEATHER TRAINING

Vincent Rademeyer

Cold weather training sounds like something to do with the outdoors and human survival in cold conditions, like camping in Alaska or swimming at Blouberg Strand, but it was not what our team was expecting from our training at Barloworld in Cape town. It was the survival of our fleet of Caterpillar tractors that we have at SANAE IV base in Antarctica that has to survive the cold weather. There are four bulldozers that we have to use when cargo sledges get snowed in, to recover them again after storms, and then we have the Challenger tractors we use for towing the cargo and fuel tankers between the base and the ship.



The training involved safety rules for starting up the tractors in cold conditions and driving lessons. When an engine is cold it will not start easily and wear on the working parts of an engine is greater, so a Webasto system, that is actually a diesel burner that heats up the engine coolant, is fitted to the tractor. This is the same coolant one would find in a radiator in a normal car at home. The coolant circulates through the engine and the Webasto system, heating up the Caterpillar's engine so it can easily be started without any damage to the machine.

Driving the bulldozers was not like driving any car back home, it has two tracks like you would find on a military tank. The dozer is steered with some kind of joystick. Some has the gear selector on this same 'joystick', while others have a normal lever.



The bulldozer's left hand and right hand tracks work independently. When the vehicle has to turn left, the left track will go slower or stop and the right track moves, and when turning right, the right track will then move slower or stop were the left track moves. When going backwards it was easy to get confused which way to steer, to the right or left! The accelerator on the bulldozers was also different, it's a de-accelerator instead of an accelerator, so that means the dozer goes faster when one releases the foot pedal and it goes slower when the foot pedal is stepped on - just the opposite of a normal car. It took some hours of practice to operate the dozers. There was also the blade in front of the dozer, that is used to dose the snow (or gravel), which one has to keep an eye on while driving as it has a knack of dropping down systematically as one drives.

The Challenger tractors used for pulling cargo was not as difficult as the bulldozers. It operates almost the same way as a normal car. It is semi automatic that has 10 gears forward and 2 gears to the rear. It also has two tracks which is made of rubber and not metal like the bulldozers. The Challenger tractor has a normal accelerator like a car and a clutch pedal which only is used for pulling away and stopping, it also steers on the same method as the bulldozers but was much easier to drive since it has a normal steering wheel. Ⓔ

D4 DOZER



D6 DOZER



CHALLENGER



** photos courtesy of Lodewick van den Berg

OPEN WIDE

Jako Bester

Excited banter and laughter filled the air as Team 51 gathered at the Maritime Medicine Institute in Simonstown on a beautiful Friday morning. Occasionally a tinge of nervousness showed on some faces or echoed in a conversation precipitated by the day's main event: "The final visit to the dentist"...

However nobody noticed that the team doctor was the most nervous of them all!

Maybe it was some buried childhood memory... or maybe ... maybe it was the sense of dread that after this checkup all dental problems will become the bane of his life for the next 14 months!

"Open wide" ... Aaah!... (oops wait this is the dentist) ... "one four occlusal amalgam...", somewhere the ramblings of the dentist made some sense, but it was far off in the distance when the doctor suddenly realized that this would be the last trained dentist that he would see for

the next 14 months as well... it is quite difficult then, as your mouth is occupied by dental instruments..., to tell the dentist to please make double sure everything is all right ...

The thought of pulling your own tooth did not sit too well with this doctor...

It was over in a matter of minutes! You heard the occasional nervous inquiry: "Is that it?"

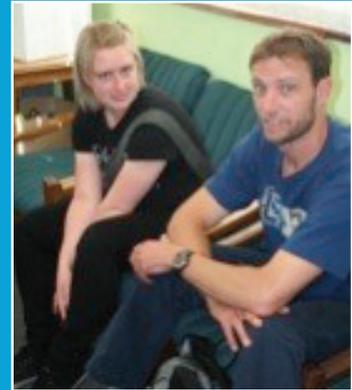
The doctor almost wanted to run back and tell the dentist to please recheck again because he wasn't of the opinion (or rather comfortable with) that such a short examination would be sufficient.

Sighs of relief were heard all around ... even the doctor started to relax a bit ...

The success of the checkup was then celebrated with some team bonding over a cup of coffee, and for some, a quick breakfast, while enjoying the view of the Simonstown harbour. It was a brief moment of fun and relaxation before Team 51 needed to head back to start packing for their long journey South. ☺



BRAVING THE LAST DENTAL CHECKUP



The dentist discovered the missing link ...

Elrich showing the youngsters how to figure the eight...

AN UPLIFTING EXPERIENCE

Braam Beukes

Arriving at Barloworld you are faced with an array of yellow painted heavy vehicles and equipment in front of a clean looking building. Walking to the back of the building, where the workshops are, you are confronted with more huge machines in various states of assembly and repair, people welding and grinding and forklifts ferrying goods to various locations. In this hub of activity we had to receive crane training.

We met our instructor outside in front of the above mentioned building. He was a friendly looking middle-aged man and when we were all gathered together we kicked off the course with theory. In a small boardroom above some of the workshops we were each handed a set of notes and our instructor proceeded to take us through the sections in the notes. The sections covered, amongst other things, the basics of the crane, safety procedures and equipment, what equipment is involved with lifting loads, what to look out for when lifting loads etc. Luckily, our instructor was experienced and could provide some real world examples of situations he encountered whilst working with cranes.

Practical training was next. Elrich, Mcabango, Jon, Stef and I were taken to the CraneCAT which was parked right at the end of a row of workshops. (The rest of our team was scheduled for the next day). This machine is a dozer with a crane attached to the back of it. Eager to start, we were forced to learn a basic lesson: You can't start the machine if you don't have the key, luckily after a while our instructor emerged with the key and we could finally start our practical lesson.

We were taken through the basics of how to engage the crane and how to operate it. We had a couple of exercises



to perform. First was to unfold and repack the crane. Jon, Stef and Mcabango required a wooden pallet podium of sorts while performing the aforementioned task, not to show off but to effectively operate the levers. After our instructor gave us the nod to indicate his satisfaction at our crane operating capabilities he attached a chain at the end of the crane and proceeded to draw a figure eight on the concrete floor with a piece of chalk a short distance away.

This was our last exercise we had to complete for the practical. We had to operate the crane in such a manner as to drag the chain along the chalk lines drawn on the concrete floor, effectively "drawing" a figure eight with the crane. This was a little harder than it looked but gave us a decent respect for the equipment we were dealing with. Everyone managed to perform the task after spending some time on the crane.

When the day was done we had written a theory exam and done a practical evaluation on a crane. We also received a bread roll and something to drink from our friendly instructor. The course was something new to all of us and we soon found, after our arrival at SANAE, that this newly acquired skill came in very handy. ☺

FIRE IN THE HOLE!

Singa Msimanga

The event took place on 24 November 2011 at Porter Estate, Tokai Forest.

The practical training service was conducted by Redwatch Fire Service and the man in charge was Mike Law.

The training programme started at 08:00 and ended at 16:00. Although time was insufficient, it was Mike Law's passion for the job and expertise that helped the team to grasp the important fundamentals of fire fighting. May the loving God bless him with more years and good health.

Our team was trained on different types of fire fighting equipment and techniques. The team also had an opportunity to fight different kinds of fire under different environmental conditions.

The entire training operation was completed without any injuries or damage to property or equipment. Well done Mike!

At the end of the training programme, it was proved beyond reasonable doubt that each team member has acquired a vital skill of effective fire fighting. Each member was presented with a certificate after successfully passing a Fire Fighting Examination.

It is now the responsibility of each team member to learn how to not cause a dangerous fire. The fundamentals of this learning begins with good house keeping.



Stef foaming the fire

Remember, fire has the power to conserve life or to destroy life. ☺



One section of the training I wasn't looking forward to, was the search & rescue! After all the things I heard during the training I became really scared. You see a couple of years ago I had a near death experience while scuba diving and that was the reason for my fear. I was given a second chance to tell my story.

The fear of putting a mask on and venturing into the darkness was not exactly my idea of fun, not to mention the claustrophobia! It was my greatest fear that I won't be able to succeed and that I would let the team down in a emergency. I explained my situation to the team and with their encouragement and support I got through; looking back you realize how much can be achieved with the right support to back you.

Thanks to all in the team for the support, I am part of SANAE 51 and now I am in a place of the purest of nature, called: "Antarctica"! - Elrich Delport

THE ALIENS HAVE LANDED

Jon Ward

Antarctica – the coldest, driest, windiest and most isolated place on our planet. It is tough to imagine how any creature could survive in this harsh climate. Waiting, undiscovered and free from human exploration until only about 150 years ago, Antarctica, surrounded by the Southern Ocean, has developed alone, along its own unique path.

Antarctic Krill, a small crustacean; zooplankton, squid and small fish have all evolved to take advantage of a rich, untouched niche of phytoplankton, which are microscopic, photosynthesising organisms that live in all the Earth's oceans and form the base of the aquatic food web. These,

in turn, have attracted numerous species of whales, penguins, seals and birds, which also call the Southern Ocean and coastal regions of Antarctica their home, especially during the warmer summer months, when food is abundant.

Since most of the food sources are located in the ocean and at the coast, there are few permanent terrestrial animals and plants. Mosses and lichens are the only vegetation that can be found, and only in places sheltered from the icy wind, where the land is not covered in snow and ice, and almost 98% of Antarctica is covered by ice! Small invertebrates such as nematodes are the largest animals and are only found in limited micro-habitats.

This remains one of the few pristine parts of our planet where nature truly rules. The fact is, when we undertake

this voyage down South, WE ARE THE ALIENS. One must not forget that we are only visitors and that we need to leave as little impact on the environment as possible. Our actions are governed by the Antarctic Treaty, of which South Africa is one of the original signatories. This Treaty governs what steps we are allowed to take, including how we manage our waste, deal with fuel spills and how we interact with the



indigenous creatures.

One of the steps that we take to avoid bringing in any non-indigenous fauna and flora is called the “Boot Washing Ceremony”, during which each person is expected to scrupulously clean all of their shoes and boots as well as inspect all of their outdoor clothing for any seeds, plant and animal matter, especially items with Velcro. This might seem like a bit of a schlep, but is a crucial step to ensure that we do not bring any species that could threaten the very sensitive eco systems of Antarctica. A little goes a long way, and with global climate change a reality, it is all the more important for us to stay vigilant and preserve this beautiful place. ☺

CARGO HANDLING

Jon Ward

There are no shops in Antarctica. Everything that the over-wintering team needs during their 14 month tour has to be brought along from the point of departure or they go without it. Obviously this requires careful planning to ensure that the team has enough to eat, sufficient polar diesel to run the vehicles and generators as well as surplus materials to maintain the base through the austral winter.

The Department of Environmental Affairs runs all the logistics for the Antarctic programme and is in constant contact with the current over-wintering team, who advise them

of any urgent repairs that have to be undertaken and of stock levels in the base. The new over-wintering team has the task of ensuring that they bring all of their personal necessities to survive the year. This is not limited to just cold weather clothing, but also to toiletries, liquor, cigarettes, hobbies and luxury items.



How much toothpaste do you use in one year? How many beers do you drink in one year? These are not easy questions to answer. Fortunately, the previous over-wintering teams have recorded their experiences and left guidelines and advice, some good,

some bad, so one does have some idea of what is needed. But at the end of the day, you just have to hold thumbs and hope that you can do without those Rennies or that extra case of chocolate.

All these items then have to be carefully packed into containers and loaded onto the ship, which will ferry them to the ice-shelf. The team takes responsibility for all of their own packing. One has to be meticulous in this regard as this precious cargo will have to endure three weeks on the open seas, frigid temperatures, off-loading onto the ice-shelf as well as a 300km journey by CAT train before it reaches SANAE IV.

When packing your containers, you also have to make sure that even the tiniest gaps are sealed. The snow and ice has a knack of finding its way through every nook and cranny. When in doubt, duct-tape it! One can compare it to driving along a dirt road with your window open; it just gets everywhere, even if it's just a crack. ☺

GETTING TO GRIPS WITH JUMARS AND BEANERS

Johan du Plessis

In Antarctica you need to fear crevasses. They are cracks formed in the ice and can be as deep as hundreds of meters. Remember, on average, the ice cap in Antarctica is 1,5 kilometers deep. As this ice cap moves toward the sea as a result of glacial movement, cracks tend to form. These cracks are sometimes covered with small layers of

snow and the unprepared can tumble to his/her death if he/

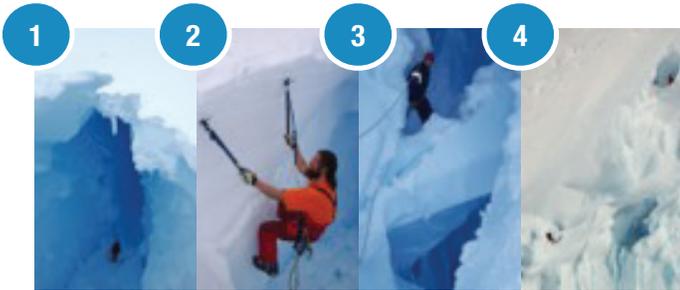


she attempts to cross it.

It would therefore make a lot of sense to train overwintering personnel how to descend into one of these bad boys. Just incase someone needs to be rescued...maybe even something, imagine one of your newly bought R 2000 mittens slipping down. Just kidding, in actual fact the recreational entry into crevasses is strictly prohibited by the SANAE adventure policy. But suppose someone needed to be rescued, it will be expected of us to do any of the following:

The topics included:

- Abseiling (Descending a rope)
- Jumar (Ascending a rope)
- Pulley systems (Used in hauling heavy loads upward)
- Ice travel (Basically roping up with team mates)
- Self arrest with an ice axe (Stopping an uncontrolled slide on an ice decline)



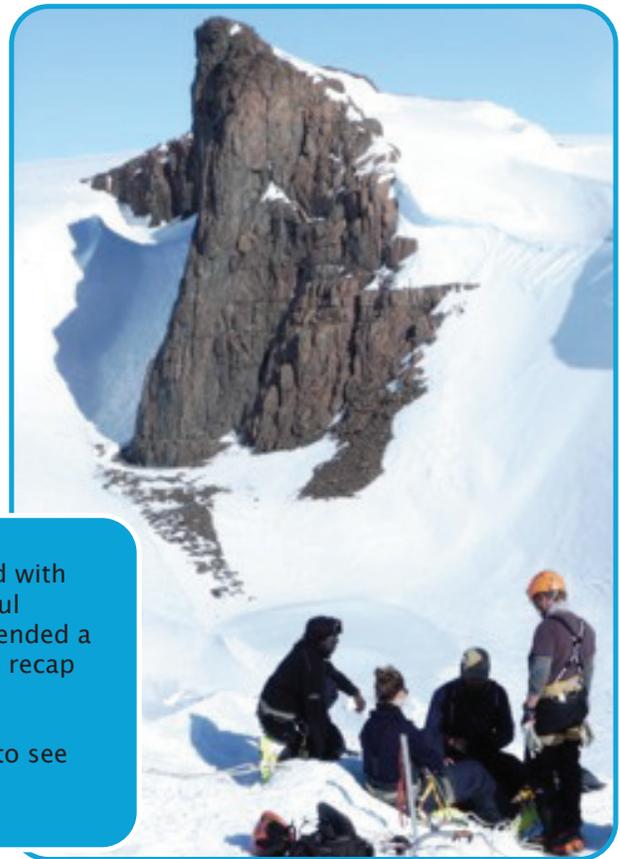
** photos courtesy of SANAP website

To get our 10 team members, of varying degrees of fitness and mountaineering skill, in tip-top shape for the task at hand we scheduled 26 to 27 November 2011 for intensive training. It did unfortunately fall on a weekend and for most team members it was bit of a toss-up between surviving skills in Antarctica and treating loved ones with their last few minutes before departure.

We all gathered at a local climbing spot on a hot windy day in Cape Town where our very knowledgeable and passionate tutor instructed us on different techniques in rope work and mountaineering.



This training was the highlight of all the training for some; for others the highlight was that they needed no ablutions during either day's training, as there wasn't any. ☺



Two months later our theory of ice and ice travel was tested with the first taste of getting to know the practice. On a beautiful summer's day in Antarctica some of our team members attended a short course presented by the old year team. It served as a recap on our initial training.

It is such a magnificent continent and it is such a privilege to see and enjoy it.

SANAE TRENDS

Temperature

Maximum	-1.4°C
Average Max	-7.9 °C
Average	-10.4°C
Average Min	-13.2°C
Minimum	-18.9°C

Pressure

Maximum	896.3 hPa
Average Max	887.0 hPa
Average	864.3 hPa
Average Min	880.7 hPa
Minimum	884.1 hPa

Humidity

Maximum	100%
Average	78%
Minimum	28%

Wind speed

Mean	46 Knots (92 km/h)
Maximum Gust	124 Knots (248 km/h)

Daytime lengths

Average day length	13:14 hrs
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Quote of the month

“What exactly happened in Challenger 3?”

Movie of the month

Fast Five

Song of the month

Moves like Jagger - Maroon 5

Dish of the month

Braaivleis and Bango's bean salad

THANKS TO OUR SUPPORTERS:



Support also by the following individuals:

Homemade Buffs – Mrs du Plessis
Homemade Ginger Biscuits – Mr and Mrs Knoesen, Mrs Bester