

South Africa 2011

OKA axles and Lesotho

Leg details

Date May 13 - May 22, 2011

Leg Johannesburg at BAE Systems - Royal Natal NP - Sani Pass (Border crossing to Lesotho) - Thaba-Tseka - Katse Dam - Thaba-Tseka - Mohale Dam - Maseru (Border crossing to South Africa) - Johannesburg at BAE Systems

PDF



Leg map (click to enlarge in separate window)



The saga with the bank goes on and on.

Every day there is the famous email from NAB with yet another reason why they cannot reopen Ruedi's internet access to his bank account. Just about when Ruedi is ready to strangle the bank manager in Fremantle (because after Ruedi had sent her a copy of his driver's licence, birth certificate and passport she still says that she is not happy that he is the one he claims to be) the Fraud Department sends him an email, that they have just received the details of his case and they will arrange for his account to be enabled with the old password so he has access to it by Internet again. And they will also issue him with a new password for his phone banking, no worries. Well, well, well that is more like what we expect from a bank as service

But they still insist that they cannot reactivate his debit card so we arrange for it to be sent to Switzerland to Ruedi's sister. She will then dispatch it to us in Africa.

A few days later the whole case is history and our small banking world is in order again.

Note to the reader:

Don't EVER have a problem with your credit/debit card while you are overseas - at least not if you are a NAB (National Australian Bank) client! As you can see you are better off returning home to fix it in person than trying to get it sorted over the phone or by email it just won't work

Now, back to our current headache, the broken drive shafts.

As things now get a bit complicated let's start with a brief technical and political overview.

Please don't get it wrong, we are not complaining about OKA.

It is just a summary of what went wrong in the last 5 years so that the story further down is easier to understand.

General theory about a car's drive train:

Every car's drive train can brake if it is overloaded.

The further forward in the drive train the damage occurs the more expensive the repair will be.

Replacing a broken/twisted drive shaft is considered to be the cheapest damage followed by the differential gear, the transfer case, the main gear box and finally the motor.

For this reason the drive shafts are designed to break first as this can be expected to be easy and "cheap" to replace.

OKA axles:

Our axles are equipped with a dog-clutch (100% differential-lock).

This dog-clutch is located outside of the differential gear on the right drive shaft.

To engage/disengage the diff-lock the dog-clutch slides on the splined drive shaft.

When engaged the heaviest load is therefore between the spider gear in the diff and the dog-clutch on the drive shaft.

The outer diameter of the dog-clutch is larger than the diameter of the axle housing.

If the right drive shaft is overloaded and twists between the differential gear and the dog-clutch it is impossible to extract the twisted drive shaft through the dog-clutch and out of the axle.

The consequence of this problem is that the differential gear itself cannot be removed out of the diff-housing (the axle centre) and that the whole axle including differential gear has to be replaced.

This is a very, very expensive repair.

Out of experience we know that it is possible for such damage to happen - especially with a heavy truck like ours which is driven above the original factory limit.

In 2008 in Alice Springs we had a slightly twisted drive shaft and had been able to remove it but only with a lot of brute force.

Had we then not managed to extract the slightly twisted drive shaft it would have meant to replace the whole axle.

We had reported this to OKA because it cannot be justified that for a twisted drive shaft which is the intended "breaking point" of a drive train a whole axle has to be replaced

The axles themselves are produced by Madara in Bulgaria, then shipped to BAE in Johannesburg and then to OKA in Australia.

The production quality of the axles Madara delivers in the meantime is known to OKA and BAE to be appalling.

History of our axles:

Our main problem is that we have two of the oldest axles Madara/BAE ever built figures with the ex research-and-development vehicle we have!

At the beginning of the development of the current OKA-NT model the axles had been 40 mm longer on each side.

The first 4 or so OKA NTs had been fitted with those axles.

Then the technology changed and the axles were shortened.

New rims would have to be used to compensate for that, so the steering radius would stay as good as before.

After destroying yet another diff in Tasi in 2009 we had some hefty discussions with OKA.

At that stage we were so fed up with the trouble we have had with the OKA axles that we were ready to get rid of the OKA axles and change over to Dana 80's.

OKA was then working on a stronger model with stronger breaks which would have been perfect for us.

For that reason we agreed to stay with the OKA axles and go for the stronger ones before we leave Australia for our world trip.

Sadly the development of the new axles was so slow that when we were ready for our world trip the axles had not reached "production" status.

After the last fatal damage on the axles we also agreed with OKA not to install a dog-clutch anymore but to wait for the redeveloped dog-clutch from BAE.

BAE was also working on new diff-lock actuators with correct status indication which now would really indicate if the dog-clutch was engaged or not.

So that was another update that we would receive as we had been complaining about the wrong indication since we had the first incident with the dog-clutch in 2006.

For us this axle saga was an ongoing warranty case.

The replacement axle from OKA delivered to Melbourne in 2009 was an old axle that obviously had already been in use, but we did not think much about it.

We thought that OKA in due time would replace the old axle for a new one and this old thing was just a temporary fix.

Sadly we never got that in writing.

OKA kept us updated on the development of the axles.

So when it was time to get our OKA ready for the world trip we knew that the dog-clutch and the actuator issue had been resolved, but the stronger axle was still in development.

In October 2010 we left the vehicle at the OKA factory so they could fix the axles.

As the stronger axles were not ready yet we then thought that they would now replace the old temporary axles with new ones.

But when we picked up the vehicle we still had the same axles.

The differential gear had been refurbished and a new and stronger dog-clutch had been retrofitted but otherwise it was still the same old axle with the old diff-lock actuator we had received as replacement in 2009.

We were very upset and felt betrayed but we had no proof of an agreement

Ruedi got really upset and requested that at least the actuator had to be replaced with the new type as we had waited for them long enough.

But with the old axles the new actuators don't fit so OKA promised to modify two old ones to the new standard and send them to the OKA dealer in Africa where we could pick them up.

Our current situation:

When the damage happened on the Namaqua Track we had all of the above present.

Due to the error analysis we had already done we expected the left drive shaft to be broken and the right one to be twisted.

A less likely but possible problem could be that the right drive shaft was twisted and broken.

Even less likely but possible could be that the spider-gear in the differential gear was broken.

Both axles had been refurbished by OKA some 9'000 km ago.

At the same time the right rear drive shaft had been straightened because it was found to be slightly twisted.

For all the above reasons we decided to drive back to Johannesburg and have the problem fixed by BAE which is the company responsible for the production of the axles.

What happened so far (repetition of the last journey):

BAE at Johannesburg has no more spare drive shafts for our old and longer axle-type.

The drive shafts are ordered in by airfreight from OKA Australia.

We request a cost proposal for all possible scenarios from BAE before any work begins.

This includes the price for 2 new shorter axles.

In a worst case scenario it could be that the repair exceeds our financial capabilities and that we are forced to return to Australia and stop travelling.

We never got this proposal.

So, this is the end of the overview.

As expected the drive shafts from Australia that fit our back axle don't arrive before the weekend so we extend our stay in the caravan park for a bit longer.



It gives us time to watch the "locals"

Click here for a [movie](#) on

- [Baboons checking for food once the tourist have left](#) (file type: .wmv, size: 1'420 KB).

- [a fight between the Baboons over some food](#) (file type: .wmv, size: 1'998 KB).

Finally on Thursday, May 12, Piet Kleynhans (the local OKA dealer and former project leader for the OKA axle project at BAE) calls us and lets us know that we should be at BAE tomorrow Friday at 7 AM.

Looks like things are moving

So on Friday morning we leave early to beat the morning traffic and make it to BAE on time.

Shortly after 7 AM the work starts on the OKA.



As Ruedi suspects that the right tail shaft is twisted that side is tackled first.

We learn that the axle can be taken apart a bit easier than we had done so far - good to know.

Soon they see that the shaft is stuck and cannot be removed that easily.

Now the tricky part starts: How can it be removed

A bit amused Ruedi watches the different efforts, knowing in advance that they will fail as he himself had tried various methods before.

We had been very lucky in Alice Springs in 2008.

Then the shaft had just been twisted that much that we had been able to remove it with brute force.

We had stuck a long steel bar in from the left hand side and whacked it with a large hammer until the twisted shaft had moved just that wee bit and had given way inside of the dog-clutch to come out of the axle.

Piet Le Roux (the current Project Manager at BAE) joins us and confirms that the long-type axles we have are not produced anymore and neither BAE nor OKA have any left on stock.

We continue watching the efforts to get the drive shaft out of the axle it does not work.

Ruedi then decides with Piet that we better go to his office and start looking at our options in case BAE cannot remove the shaft

We always said that we are responsible for the broken/twisted drive shafts due to our weight and that we accept the repair costs.

But we also made clear, that the repair costs must be reasonable for such a defect since it is the predetermined breaking point of the drive train.

Should the axle have to be replaced we would have to talk with BAE about the costs again.

Our current options are:

- Get the right drive shaft out at all costs and recover the existing axle.
Different scenarios are discussed. They are difficult and the guarantee of a success is dim.
This scenario would mean a lot of troubles for us: Costs for a rental car; costs for a hotel, visa expiry problem a.s.o.
- Building a new long axle centre, cutting the old axle apart and recovering the diff.
BAE rejects this possibility as it would be too expensive to build a new axle centre and it would take months to produce it.
- Exchanging the back axle with a new shorter axle they have on stock.
This would mean:
 - We have a short rear axle and a long front axle.
This is a technical no-no.
 - We have to replace 2 rims to compensate for the different track width.
We have to carry an extra spare rim not a good option considering our weight.
 We reject this scenario.
- Exchanging both axles with new short axles BAE has on stock.
This would mean that we have to replace all 5 rims.
Even so we can expect to get new axles from BAE for a very good price, the costs for this solution will be beyond our financial capabilities.
We can pay the repair, but we cannot afford it.
It would be the end of our journey.

There is one more problem that we have to bear in mind: our South African visas will expire on May 27.

We either have to extend it or leave the country and come back in with a new visa.

Together with Piet Le Roux we look at all aspects, discuss responsibilities, financial aspects and technical out-of-the-box solutions.

Even Teunis Westdorp, the chief designer is called to assist with technical details.

The chosen solution must be affordable for us as well as for BAE.

The meeting is stressful, but very constructive and in a good atmosphere.

In the middle of the discussion the work shop calls and tells Piet that the drive shaft on the left side had snapped outside of the diff and that they have problems getting the broken-off piece out of the diff.

At this moment one of the managers arrives and says something to Piet in Afrikaans.

Piet then tells us that the management of BAE is offering us two new axles for free.

We have to decide quickly as time is flying and as only a few hours are left until the factory closes for the weekend

We had not thought through this solution since we had not expected this possibility.

Surprised we look at each other, then quickly discuss it.

It is still the same type of axle so we still run the risk of twisting the next drive shaft and be in the same position again.

But for the time being it is by far the best solution for us, something that we could not have dreamed of.

We double check with Piet that we have understand him correctly and then thankfully accept the very generous offer.

But we insist, that we pay at least for the shipment of the drive shafts from Australia, the costs we would have paid for the ordinary replacement of the 2 drive shafts and the 5 new rims we have to order from OKA for the new axles.

It is already 11 AM and being a Friday the workshop is due to close a 1 PM.

This means that we get the rear axle fitted now and that we will have to come back on another date for the front axle to be fitted.

As BAE has more time at their hands for jobs like this once the production line has finished the monthly orders (which happens on the 21st each month) this would be earliest after the 21st of May or then after the 21st of June or the 21st of July.

We all move back to the work shop and watch how the new axle is installed.



The OKA is lifted up with a crane to remove the old axle.
Up to 4 people work at the axle now and things are moving quickly.



Then the new axle is brought in.
It looks different to the one that we have had under the OKA up to now.



As we don't use the central inflation system (CTI) but the axle is built for it, the dummy screw for the CTI system is too long.
On the old axle it had been exchanged by a shorter one.
Trying to get the shorter one out of the old axle doesn't work so Rued tells them to take his angle grinder and cut it off.
We will for certain never use the CTI system as long as we have the OKA

Next thing is that the fittings for the hub breather have been changed.
On the old axle the connection had metric threads and the whole setup had been one big hack
This had now been fixed resulting in our fittings not fitting into the new axle anymore.
But this is not a problem, Ruedi will fix that later on as it would not be a problem to get standard fittings now.



This is the broken left drive shaft.
It looks as if the drive shaft had been cracked for a long time already and that only the innermost centimetres was still intact before it finally also gave way.
This would explain why we didn't hear or feel anything when it broke.
Could it be that the axle geometry was wrong and the drive shaft was always slightly bent until it gave up?
We will never know.



Again they get stuck.
The hole in the axle for the head of the centre bolt of the spring-pack is too small.
Ruedi remembers that when we had upgraded the spring-packs Westralia Springs had exchanged the centre bolt for a stronger one and the hole in the old axle had also to be widened.
Ruedi gets his drills out but he only has drills up to 13 mm and the whole has to be 14 mm.
They check in the workshop and find a 14 mm drill but Ruedi's drilling machine only takes drills up to 13 mm
So they quickly machine the end of the drill down to a 13 mm shaft so it fits in the drilling machine.
Now that problem is solved.
One must consider that BAE is not a garage but a production company.
They are not necessarily equipped with all the hand tools one needs to repair trucks!



Next problem is that BAE had received some axles from Madara with all fixations for the brake hoses missing and they had picked exactly one of these axles when they fetched it in the store.
So all is temporarily fixed with cable ties and will be done properly when we come back to exchange the front axle.

Then we finally have all in order and Ruedi goes for a test drive with Martin, one of the axle experts of BAE.
All is well and by 2 PM we are ready to leave.
Thanks guys for that splendid job, you are a wonderful team.
We hope that we did not spoil your weekend too much!

Now that we are mobile again we decide to travel to Lesotho to get the visa issue out of the way.
So we go shopping and then head back to the caravan park.
While Ruedi is busy reporting back to OKA in Australia what has happened and also placing an order for 5 new rims with Piet Kleynhans, Susi is precooking all vegetable for the planned trip to Lesotho.
Then we go to bed and sleep like babies with this huge problem removed from our backs. This was a close hit!



Saturday morning Susi gets busy with packing the pre-cooked food under vacuum.

It is the first time she uses the vacuuming machine on precooked food.



And she quickly gets her fist lesson:

It is not a good idea to apply full vacuum to bread as it just compacts it too much

Surprisingly it all fits in the fridge!

Ruedi checks all the screws and is happy with the OKA.

So now it's time to sit down and plan the next few weeks.

Having the rims shipped from Australia will take at least 6 weeks so realistically we will have to be back at BAE around July 21.

On Sunday we get organised and plan our trip.

Ruedi writes to OKA regarding the rims.

On Monday morning we already have a reply from OKA: We don't need new rims.

OKA still uses the same rims on the short axles even though this worsens the turning circle.

We are a bit surprised about this answer but if they say so

That means that we can fit the front axle at any time.

We head up to **Alberton** to see Piet Kleynhans.

He will organise with BAE regarding the date for the axle change and let us know.

Piet also gives us an address of a prop-shaft shop so we can have the rear prop-shaft of the OKA checked.

It has by far too much play.

Our map from Johannesburg is not too accurate so we have to follow the instructions from Piet and land in a shanty town not really a place we want to be (and the people living there either

Our nerves get really stressed and the atmosphere in the OKA for once is not too friendly

After a lot of asking and searching we finally find the place and Alec the boss of "Prop-City" is really helpful.

He will exchange the slip-joint of the shaft when we are back for the axle.

Then we decide to go back to the caravan park as it is too late to head south towards Lesotho.

On the way a thunderstorm hits us and the temperature drops from 19.5°C to 11.5°C within some 10 minutes.

Amazing!

On Tuesday morning we leave early and head south on the R57 via **Vereeniging** and **Heilbron**.

After Heilbron towards **Petrus Steyn** we see a sign that they are fixing the road.

Shortly after we reach the first stop.



The signs are pretty clear

Between Petrus Steyn and **Reitz** the road is covered in potholes; it is one of the worst pothole sections we have driven so far.

We in the OKA sit high up and at least see the holes in advance we would not want to sit in a normal car on this section of road!

As we head east dark clouds roll in from the north.

We now have a race against the bad weather.



We are back on good roads just in time as there are large harvesters on the roads.

Harvesting is in full swing and they probably too hope to win the race against the rain

We hope to reach the Royal Natal National Park before the clouds arrive.

This would enable us to see the "Amphitheatre" which we already missed due to bad weather last time we were here.



We reach the turn-off to Bergville and find the construction site along the **Sterkfontain Dam** as we had seen it six weeks ago.

Hang on there is a change:

Grass has started growing on the new road-base and the potholes are worse!

There are sections where there is not much left of the original road.

Aaaaafrica



The **Oliviershoek Pass** seems to hold the bad weather back a bit and we can see the mountains of the **Royal Natal National Park** without the clouds we had last time.

Quickly we drive to the Thendele Parking to get a look at the Amphitheatre just in case the weather should get really bad.

Better a photo of the mountains with some clouds than no mountains at all and just clouds like last time.

Then the rain closes in and we settle down in the camp for the rest of the day and the night.

We call the Cathedral Peak National Park to enquire about where to get permits for Mike's Pass.

The lady tells us that the track had been damaged by the recent rains and will only reopen beginning of June.

Well, so much for that.

In the late afternoon the rain stops.

Then a full moon rises on a clear sky and the light gives the mountains a special look.

On Wednesday we wake up to a blue sky.



But as soon as the sun rises fog and clouds build up and cover the "Amphitheatre" in clouds again. Lucky we got a "security shot" (as Susi calls them) yesterday

We drive along the **Woodstock Dam**.

As today is voting day in South Africa people are on the move everywhere.

Many women have dressed in their finest clothes.

It feels a bit like a party.

We get back to the R74 at **Bergville** and change over to the R600 in **Winterton**.



Shortly after **Tokozisa** we leave the bitumen and travel along the edge of the National Park all the way to **Himeville**.



The names of the farms reflect what we can see on the horizon



On the way we come past a Cobra.

Even though it looks like a Zebra Spitting Cobra (*Naja nigricollis nigricincta*) it is the wrong area for them.

It could well be a Rinkhals (*Hemachatus haemachatus*).

As Cobras have the ability to spit venom that is very dangerous to humans for up to 7 meters we watch it from the safe distance of the OKA

Click here for a [movie on the Cobra](#) (file type: .wmv, size: 1'717 KB).

After a last refuelling we turn into the Sani Pass road.

The road is being widened and it looks like it will receive a bitumen coating.



We reach the border control and the sign is pretty clear:

IN TERMS OF ROAD TRAFFIC ACT (ACT 29 OF 1989) SECTION 83.(2), NO VEHICLE THAT IS NOT EQUIPPED WITH FOUR WHEEL DRIVE MAY BE DRIVEN UP THE SANI PASS BEYOND THE SOUTH AFRICAN POLICE POST, EXCEPT WITH PRIOR APPROVAL OF THE ADMINISTRATOR.

We are starting to wonder what lies ahead of us



After the border control the track looks like it has been improved and graded.

We enjoy the drive up the pretty valley.



We climb up into the mountains.

After a while we pass a bulldozer that is parked on the side of the road which explains the good condition of the road



We reach the steep and winding section for which the **Sani Pass** is famous for.

One last look out into the valley and then we only have eyes for the steep climb up the S-bends.



It has some nasty turns and in one bend we actually don't manage the turn in one go, have to reverse a bit and try again. For once Susi has no time for photos but has to give Ruedi instructions on how much he has left behind the back wheels before the road finishes It is very uncomfortable but Ruedi manages it well.



Then we reach the **Sani Pass** and the **Lesotho** border control.



After immigration we continue on towards the **Kotisephola Pass** and camp almost at the top at 3156 m above sea level there is still snow on the side of the road indicating that it will get cold during the night

We turn on the heater the first time at this altitude. Ruedi had installed a special kit for high altitude that should work up to 3000 m above sea level. But the heater does not want to start just produces some white smoke. Ruedi takes the insulation away and has a closer look at the set-up but all seems to be fine, just the pump is pumping much faster than usual. Finally after some fiddling and changing around the heater starts and beautiful warmth fills the camper. Outside the temperature drops fast and the OKA gently rocks in the strong wind that is blowing.

During the night we wake up because it is cold and find that the heater has given up again. Ruedi heads out into the cold in his pyjamas but cannot find the fault. So we close all window shutters and the roof hatches, get the extra blankets out and head back to bed. In the morning we wake up to 0°C outside and 12°C inside temperature. Not bad how the cabin is insulated.



As it is a bit too "fresh" for a relaxed breakfast we drive up to the **Top on Pass** which is 3252 m above sea level. The track is pretty bad with many holes and ruts.



But the views compensate for it.



The gravel road to Thaba-Tseka, which is a major connection road, is a challenge. We only move slowly with an average of approx. 22 km per hour.



We reach the first "village". We wonder what the people up here live from and how they heat their little rondavels as there are no trees to be seen.



The views are nice with endless mountains and gullies.



The fields reach up to the highest points.
The locals grow millies (corn) where ever they can find a bit of good ground



... and all is done by hand and maybe with the help of a few oxen or donkeys



In Lesotho the blanket is part of the clothing outfit.
In the past the blanket were made from wool and would indicate the importance of the person wearing it:
The more colourful and finely woven the blanket was the richer/important the person was.
These days the blankets are not made from wool anymore and the use of artificial ones has taken over.
But it still is very much an important piece of clothing.

They also wear some kind of balaclava to protect themselves against the biting cold wind.
In summer they wear the peculiar hat that is made from grass and has a pointy top.



We travel through the first larger villages.



All seems to be very basic, done by hand, transported by means of animals.



This ox-pulled sledge has no wheels, just two thick pieces of wood that serve as runners but it works and it is easy to repair



We climb up and down, one pass after the other.



It seems to be sheep shearing time.
We wonder how the poor things will survive the cold up here after their coat has been removed.



After some more passes, gullies and valleys we reach **Thaba-Tseka**.
This seems to be a major town.

The bitumen road from the capital Maseru in the west ends here.

As we turn off towards Katse soon after we only have a few km of the pleasure of the bitumen before we are back on "pothole"-road as we call it by now.

Almost all roads in Lesotho are gravel roads and all of them (with very few exceptions) are in horrible condition. It is most likely due to the heavy rains they had this year. Most of the roads are steep and have no such thing as crash barriers. They are very dangerous when wet. Should we get some rain or snow here we would have to wait until it has all dried up again.



Even though the road resembles more a track across the fields we can see taxi-vans again. We wonder if they are 4WD ones or just 2WD. Judging by the wrecks we see some of them must have missed the road and fallen down the flanks of the steep hills. We guess that many are 2WD and just not up to the job or had driven the "road" under bad conditions



Anything will do to transport what ever has to be transported The 57 km seem endless and we are both (pothole) tired which is a bad mixture for the atmosphere in the driver cabin Finally we reach the **Katse Dam** and can settle down at the camping area. As this is situated much lower than last night's camp we try our heater again and after a lot of white smoke it starts heating again. Bliss! Never the less we don't use it unattended during the night. On Friday morning the grass is covered in frost and there is ice on the Makrolon of the roof hatches. Inside of the camper we still have 13.5°C. Amazing! But it feels nice when we turn the heater back on and the floor gets warm.



The dam wall with water is flowing over the spillway looks nice from the camping area. Shortly before 9 AM we drive over to the visitor centre and join the other tourists for the tour of the Katse Dam. We start in the information centre, a brand new set-up lovingly made with many details. The tour guide is excellent and we hear a lot of interesting details.



Next we take our cars and follow her down to the dam wall. The shape of the spillway looks even better from down here. We enter into the dam wall and are shown the technical details like the laser control points to measure out the shifting of the walls and many other interesting things.



Then we head up to the walls top and cross the wall where the tour concludes. For only 10 Rand (= 1.43 AUD) this is excellent value! We hear from the other tourists that the drive from Thaba-Tseka to Maseru is all bitumen with the exception of about 25 km around the Pass of Jackals. We also hear that the passes are nice and also the visit of the Mohale Dam is worth it. So we decide to the drive back the 57 km pothole-road to Thaba-Tseka. Today the track seems much less annoying than yesterday we must have been really tired yesterday.



Again we travel past some incredible vistas. It feels like travelling on top of the world. Over and over again we have views over mountain ridges and into deep valley.



We see some more traditionally dressed men. Most of them wear rubber boots with their blankets.



It seems that the millie harvest is in full swing.
Millies are brought to the mill and bags of corn transported back on donkeys and mules.
One feels like taken back in time.

Then we reach the bitumen again.



Just outside of Thaba-Tseka the river has damaged the road during the recent rains.



We enjoy the drive up the **Mokhoabong Pass** which is the last really high pass we will cross with 2903 m above sea level.

On the way up to **Pass of Jackals** the gravel starts again.
The gravel road is in pretty good state.
There are a few potholes but it looks like there is a firm road base on the road.
Some road plants are producing gravel along the road and construction seems to be ongoing.



Then we see a large top-notch truck dumping topsoil on the edge of the road.
We follow it and see many more trucks coming towards us.
They pick the soil up in a river bed. The ascent is really steep.
This work can definitely only be made when the weather is dry.

We continue on and see a public bus bump along the road.
So there is public transport in Lesotho besides the small taxi-vans.



Also some goats are driven along the gravel road.
As there is not much traffic (yet) this is not really a problem.

We reach **Mantsonyane** and are surprised that there are almost no rondavels in the town, just the new cement block houses.
Either the town is new (relocated when they build the dam) or they must be doing well and all houses have been exchanged for new ones.
Outside of Mantsonyane we see our first advertisement panel along the road for a telephone company!

On the **Cheche Pass** the bitumen starts again.
The passes are not as high anymore but steep.
Either they don't have much snow in winter here or it does not stay for long or they just don't drive when there is snow



The view of the descent to Patiseng is impressive.
One curve comes after the other one and it is so steep that even the exhaust break cannot hold the OKA in second gear.
This would be very unpleasant without the exhaust break.

We reach **Patiseng** and are stopped at a police checkpoint.
At the beginning the police man does not really believe that we come from Australia.
He wants to know all the details on how we got the vehicle to Africa a.s.o.
Then he is happy with our answers and we can carry on and turn off towards the **Mohale Dam**.



A few minutes after 4 PM we reach the gate.
The guard tells us that the info centre has closed at 4 PM but that we can camp up there.
The guard also asks for sweets but we don't have any in the driver cabin so we promise some for tomorrow on the way out.
Let's see if he remembers

So we quickly drive to the centre and just catch the reception lady as she wants to leave.
She gives us the ok for the camping and also informs us that the guided tour (with her as guide) will be tomorrow at 10 AM.
So we settle in for the night.

Towards the morning the heater stops working again what is it this time?

We are only at 2200 m!!!

Then Ruedi remembers that the diesel tank, where the heater gets its fuel from, is empty.

Probably the heater has sucked out the last few drops of diesel and now just has no more fuel to run off

Anyway, the cabin is warmed up and the temperature still is at 19° in the morning outside temperature is 1.5°C

On Saturday morning some clouds cover the sky.

Could well be that the weather is going to change.

But from here on there will be all bitumen so we should be fine as long as it does not snow!



Punctual at 10 AM a small group of tourists is introduced to the Lesotho Highlands Water Project.

We had already heard some of it yesterday at Katse Dam and can now fully appreciate the details and figures the lady gives us.

It is amazing what they have built here.



There is also a model of the dam showing the intake tunnel.

In the control room we can then inspect the tunnel supporting the overflow and also see the little trolley they use to service it.



With a visit to the top of the wall the tour concludes.

After one last look at the river we leave the dam.

At the gate the guard already smiles when he sees us coming yes, he gets his sweets and produces a broad grin.

Again the road leads over one pass after the other one.

The **God help me Pass** again is so steep that the exhaust break is not able to hold the OKA in 2nd high.

That is steep!

Then trees start appearing again.

There is even a patch of forest at the ascent to the **Bushmen's Pass**.

Even though we have the same altitude as we have had back in the mountains the country seems to be greener and the temperature (at least today) is a bit higher.



And then the country opens up and we leave the mountains behind us.

Soon we see signs that we are back in civilization.

The first major town we pass is **Nazareth**.

It is not that much different from the other little towns we had seen in the mountains except that it is now rare to spot people in the blanket / rubber boots / balaclava look we have seen for the last few days.

Also they have many stalls along the road and there are the taxi-vans again!

We even spot a sign for a caravan park!

We get closer to **Maseru**, the capital of Lesotho.

But the only difference we can see between the small villages and the capital is that there are more houses and people and the main bitumen road gets wider.

Even though there are normal cars in the back yards of the houses there are no bitumen roads between the houses just dirt tracks.

Then we reach a traffic light where a new large road heads up the hill towards Maseru Bridge and the border control.

Even though the traffic light is green nobody seems to go straight ahead, they all turn right into another bitumen road.

As our GPS tells us that the way to the bridge is straight ahead we go and only then see that the road ahead is blocked due to road constructions no sign ahead - nothing.

So we turn around and follow the rest of the traffic and shortly after find ourselves back on the same road but after the construction site.

Then we reach a large roundabout with a road sign, but the ZA border is not indicated on it.

But Maseru Bridge is indicated, once through the CBD (not really what we want to experience) and once on a by-pass, which we take.

We reach the check point, get an exit stamp for Lesotho and hand in our passports to the South African border control.

The official looks at them and returns them to us.

A bit puzzled Susi asks him if we can please have a new entry stamp.

He complies with it and happily we walk away.

We cross the border and are back in South Africa.

The difference between the two countries couldn't be any bigger!

Now all is organised again, the road signs all have the same colour, there are sign-post, no more people walking along the roads and many taxi-vans that rush around like busy bees.

We take the N4 to **Ladybrand** where we see that the road to Ficksburg is closed.

So we take the R708 to **Clocolan** and then the R707 to **Senekal**.

There is not too much traffic making it easier to drive around the many potholes.

This is one difference to Lesotho: in Lesotho it was potholes with gravel around it, here it is bitumen with potholes in it don't know what is better to drive on

Large harvesters are on their way to harvest.

This is a bit different to the way they did it in Lesotho looks like Lesotho has left some lasting impressions

Near Senekal we head north towards **Steynsrus** on the R720 which must have been freshly done, bliss!!

Then one last section of gravel between Steynsrus and **Edenville** and one last pothole section up to **Heilbron** and then we are back on good roads.

This is good because by now it is dark and driving on small roads at night is definitely not recommended because of the potholes and the pedestrians.

Even though the pedestrians are very careful one cannot see them at all a night.

Shortly after 7 PM and after 483 km we are back "home" at the Caravan Park in Kareekloof

We turn on the heater and have a comfortable evening.

But guess what: during the night the heater gives up again probably too much soot after all this fiddling and failing Ruedi is not happy at all

At the moment he feels like in 2006 when we just received the OKA: things were breaking faster than he was able to fix them

Sunday morning we enjoy the warm of the day.

Susi does admin work on the PC and Ruedi takes care of the heater and takes it apart.

The whole heater is soaked in diesel and soot so he gives it a good clean.

But because all is black in black he does not see a small sieve that is located on top of the flame checker and "cleans" it away it will have to work without that part or

not

He also finds that the seals in the combustion chamber have had it.
As he does not have a replacement he applies some sealant and hopes that it will work.
For the moment we cannot test it as the sealant pastes has to set first.

So in the evening as it gets cold we turn on the diesel cook plate it does not heat the floor but it certainly keeps the camper warm and cosy!

Out of curiosity Susi has a look at the entry stamps in the passport to see for how long we can now stay in South Africa.

She gets a bit of a shock: there is no date in the stamp!

What does this mean? How long can we stay?

As we don't know we have to assume that the old date is still valid.

We decide to visit the Department of Home Affairs to find out and if required to have our visas extended.

On Monday morning we are at BAE at 7 AM.

Soon the replacement of the front axle starts.



The OKA is lifted by the crane again.

Ruedi raises his concern that we could run into trouble with the steering damper.

On our axle the damper has two eyelets and is fixed to a bracket on the side of the axle, on the new axles it has an eyelet on one side, a bolt on the other side and is mounted to a new bracket in the middle of the axle.

This has to be looked at before we reach a stage of dismantling where we are stuck at BAE with a dismantled front axle.



When the new axle is brought in as expected there is no fixation at the place the old axle had it, but also none for the new type the steering damper.

There is a bracket but it has been welded to the rear of the axle instead of the front another Madara-blunder

But because OKA is now using the new mounting method which is added locally in Australia BAE had not bothered to get that fixed.

Piet believes that there could be one axle left in the store with the correct bracket location and so it is!

The axle is exchanged and the crew can start.



All the adjustments have to be made again that we already know from the back axle CTI connectors grounded away, the hole widened for the larger screw of the spring packs, fixation for the break lines cut open so they can be slid in and don't have to be taken apart, etc. etc.



Next issue is that the new axle has a different diff-lock actuator which is larger than the old one which is one of the reasons OKA changed the fixation for the steering damper to another location

The team decides to dismount drag-link and steering dampener from the old axle and mount it to the new axle to be able to check if there is enough space between steering damper and diff-lock actuators.

If the measured distances are correct it should just fit.

But when they mount the set-up it just won't fit

????

Logical!

We had wider axles so the drag link is 80 mm longer than the new one but that will be looked at later on.

For the time being we are able to simulate the movement of the damper and confirm that it fits.



So the axle is rolled under the OKA and they try to fix it to the spring-packs, but on the right hand side two screws don't fit!

They have changed the size of the screws from M16 to M20 because this was one of the weak points on the fixation (we also sheered one screw off in the Kimberleys

The new axles also have a new fixation plate which is much stronger.

But this plate is produced in Australia

Piet Le Roux jumps into the car and drives down to the bolt shop to get larger screws.

Meanwhile the holes in the plate are widened.

Now the screws fit into the holes but they can hardly be tightened because the nut doesn't fit between the screws heads and the side wall of the fixation Ruedi will have to find another solution.

For the time being the screws are tightened as good as possible.

By now it is already 3 PM, almost knock-off time for this shift.

They will need a welder for a few small jobs.



So he is ordered and he is not very happy about it and sneaks off right after finishing the few small jobs at the back axle.

So we will have to come back tomorrow to get the front axle welded.



Then they fiddle around with the tie-rod which is of course also about 40 mm too long and find that if they shorten the thread at both ends of the steering knuckles they can get exactly the correct length.
So this is solved too.

By 5:30 PM the OKA is drivable again.

It still has the old steering limiters but that will have to be done tomorrow too.

Once again we would like to thank BAE for being so generous and the team at BAE for their special effort to get us on the road again.

Guys, you did a great job!

Thanks a lot!

We head back to the caravan park where Ruedi works till late to get all done e.g. mounting the locking hubs, attaching the break lines properly to the axles, etc.

On Tuesday morning, May 24, we head back up to the prop-shaft place to have our back prop-shaft fixed.

Alec also straightens the front one and the "clonk" that we have had for a while is now gone.

Then we visit BAE have the welding done and also get some new metal pieces for the steering limiter.

They have to be readjusted due to the shorter axles resulting in a wider turning circle.

With the existing limiters the tyre could hit the springs and the air suspension.

Then we rush up to the Department of Home Affairs to see if we can extend our visa.

But they only do the local stuff and visas are done in the Immigration Department which is in Germiston and it is 4 PM so they are probably already closed anyway.

We decide not to try that anymore but to leave the country on Friday, May 27, in Twee Rivieren (north of Upington, some 1'300 km from Johannesburg) the day our visas expire.

It will be a bit a rush, rush, rush and lots of km per day but it can be done.

So we head back to the caravan park to get ready.

Susi gets busy with paperwork and finds the great surprise that NAB has finally repaid most of the money that was stolen with the Debit Card fraud.

So that chapter is closed now too.

Ruedi machines and fits the new steering limiters.

Now the OKA is ready again and we can hit the road which you will be able to read in the next journal!

And by the way the specially built diff-lock actuators have finally been manufactured and are at OKA in Perth but we don't need them now and probably nobody else either

No liability for timeliness, integrity and correctness of this document is accepted.

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