A very tall, slender cat with evenly spaced, circular spots scattered over a tawny cream background.

Written by John Bassi and Derek Pratt, as published in the SAFlyer magazine, December 2005

The face is unmistakable, emphasized by the prominent black tear stripes that link the expressive deep red-brown eyes and mouth. The Cheetah is nominally protected by CITES and the African convention and although almost all African countries outlaw the killing of Cheetah, they remain endangered due to human persecution. In spite of improved legal protection, its range has shrunk and continues to shrink as livestock rapidly replaces wildlife. Even with legislation outlawing the trade in Cheetah skins well in place, which has possibly slowed down the direct destruction of the Cheetah, a single furrier in New York was caught with nearly 2000 Cheetah skins in 1972. On many, many occasions I have been witness to the negative attitude farmers have towards Cheetah, particularly in the Northern Province, where a shoot on sight policy is still well in place. One farm manager even goes as far as conducting an annual predator reduction program on their game farm, using a helicopter to fly every morning and evening, three days a year, "culling" Cheetah, Brown hyena and Jackal.

Cheetah are specialized predators that require fairly open country where the ground is not too broken, preferring patchy cover and favoring small prey such as impala, springbok, gazelle and ostrich. This habitat is important to them because of their hunting style, stalking as close as possible to prey, as close as 50 meters, then racing out at 60 kmph to their target. At its fastest a Cheetah will reach 112 kmph, covering 7 meters in each stride, qualifying it as the fastest land animal, but at this speed they are quickly exhausted. Twice in each sequence of running movements, its whole body is off the ground, once with all four legs extended and once with all four bunched and its tail acting as a rudder held straight out behind it.

Cheetah populations in the wild are also relatively scarce, not only because of their large home ranges, but largely as a result of the aggressiveness towards cheetahs and competition with them by other predators. They are regularly persecuted by lion, wild dog and hyena. Their density is generally far higher on cattle ranches where the bigger predators have been eliminated and their home ranges have been measured from 50 to 1000 square km. The De Wildt Cheetah Research Centre has been monitoring and studying cheetah for some time now with one of the goals to educate farmers against the ongoing pointless killing of these sleek cats. Another of the De Wildt projects has been to determine the home ranges of male coalitions living free in the Limpopo Province, a project reliant on donor funding.

North West of Thabazimbi two monitoring projects are on the go. Earlier this year we darted and placed radio tracking collars onto one coalition of two male cheetah who have been tracked for over a year now and their range has been found to cover 90 000 hectares. During November we managed to locate, dart and collar the new pair, also a coalition of two males and they too have now joined the tracking project and will now be monitored on a two weekly basis, a task for which Derek in the C172 fitted with radio tracking antennae is ideally suited.

While we were working in the area it seemed the ideal opportunity to locate the two elusive cats using the fixed wing. This would be possible because one of the cheetah was wearing an old collar with a rapidly running down battery, the other still needed a collar, but since the two had joined up, we could use the active collar to locate them, identify and dart the un-collared animal, then fly again to locate and dart the collared cat. To save time and money in the jet ranger, we decided to use the airplane for the initial tracking while I stood by waiting, so, I gave Derek a call.

Derek writes: When John asked me fly to Atherstone in the C172 to track Cheetah for re-collaring, I thought he was joking as I had never heard of this being done in a fixed wing before, but there I was, off to the bush. Two aerials are fitted to the struts of the aircraft and are connected to a mixer box. With a simple left / right toggle switch and an earpiece in one ear, you can hear a beeping noise once the aircraft is in an approximately 5 km range of the collared cheetah. By orbiting 500 to 600 feet AGL, it is possible to narrow down the direction of the signal. If the signal is stronger from one side of the aircraft than the other, the cheetah is likely to be in that quadrant. After the aerials were fitted and tested, one of our school students, Tyrell, flew us from Wonderboom to Atherstone in horrendous windy conditions. En-route the turbulence was so severe that with the throttle fully closed and the nose in the decent attitude, we had a 1 000 ft per minute rate of climb followed by the usual high rate of decent with full power a few seconds later. The outside air temperature was indicating 38° C at flight level 075!

On arriving at Atherstone and as luck would have it, there was a 25 knot wind blowing at 45 degrees to the 800 meter, gravel runway. Needless to say we decided to delay the cheetah tracking until later that afternoon.

Deon, from De Wildt, and I got airborne at about 16h30. We headed north climbing to 2000 ft AGL and began our search in an area where the cheetah were spotted less than a week ago by an infra-red camera trap. With no luck after about an hour's flying, we widened our search flying 3km transects of the reserve. Meanwhile, John was counting ele's 500 feet below and was like an expectant father asking on the radio every five minutes if we had found the predators yet?

Searching near the airfield, Deon started smiling at a feint beeping sound from the left quadrant of the aircraft. The cheetahs had not been tracked actively using the collar for over three months. However, the beeping soon disappeared so we returned on our reciprocal track and in no time re-acquired the beeping, now coming from the right side, thus determining the general location and confirming that our equipment was working correctly. Descending, down to about 300 ft AGL to get a more positive location, we were able to narrow the signal down to about a square kilometer. Descending yet further and with the beeps occurring with equal strength left and right, we knew we were heading directly towards the signal with the idea that as soon as the beeps go feint you have over flown the target. On approaching a water reservoir in an open clearing of bush, I spotted two cheetah and a cloud of dust as they gave chase to an unsuspecting warthog, much to Deon's delight, as the collared cheetah had indeed formed a coalition with another male.
This meant that we could re-collar the one animal, and collar the other with a cell phone collar. With a positive sighting and GPS co-ordinates (only 3.5 Nm from the airstrip) we returned to camp.

As cheetah have been known to travel up to 20 km per day, we decided to venture out again in the early morning before 6am in the C172 for an updated location. This would ensure minimal flying time in the Jet Ranger doing the darting thus saving costs for the project. As predicted, flying to their previous day's location was futile and proved again their traveling habits - they were not even in range. Routing westwards, towards their common hunting ground proved fruitless and we eventually tracked them 4 miles north east of their previous day's location, fully gorged on an early morning ostrich kill. Taking down the GPS co-ordinates I alerted John, who was sitting in the Jet Ranger ready to go.

There I was sitting in the jet ranger all dressed up with nowhere to go, waiting. Andre Uys, the veterinarian and the rest of the ground crew were sitting at the airfield a few kilometers away just as expectantly, waiting for Derek's positive sighting. Our agreement was that he would buzz me at our camp as soon as he had a GPS on the cats, I would then talk to him on 123.4 and push the start button.

It was around 06h30 and I was watering the gravel around the helicopter to reduce the dust bath that would be created by the rotor downwash when the 172 appeared over the trees from the south, it was all go. 06h45 and the wind was already gusting to 20 knots, the OAT was climbing through 35°C, and this was going to be a killer hot day. By the time I was on short finals for the strip, Derek was already walking to the ground vehicle with a big grin. Andre was ready and climbed into the back of the heli clutching his dart gun in one hand and portable radio tracking equipment in the other.

Raising the collective gradually letting the N1 increase while keeping an eye on the TOT, I was happy for the strong wind and the extra translational lift it would give me since I was pulling 65% torque and already reaching my TOT limit. Nudging the cyclic forward to remain in ground effect for as long as possible and letting the airspeed build up before climbing out is the only way to remain within engine limitations in these hot conditions. Climbing out over the dry Marulas I punched in Derek's latest GPS co-ords and set course at 500 feet AGL filled with anticipation. Five miles out we reached the position and as expected the cheetah had left the remains of the male ostrich in the middle of the open veld. Andre got to work with the tracking device while I climbed to 800 feet, circling to the left until we picked up signal. The cats were on the move but we were onto them and within a few minutes had their position down to an area the size of a city back garden, but no visuals.

Cheetah are unbelievably difficult to see from the air when they are in bush cover and they have a habit of sneaking away behind the aircraft but after 20 minutes we sighted the two males 50 meters off to port. I climbed from tree tops back up to 300 feet positioning the helicopters nose into the strong northerly wind and hovered with the cats on my

right, not taking my eyes off them for a second for certainty of losing them again. Andre readied himself while I called the ground team closer and prepared myself, taking careful note of the temperature, elevation, wind strength and velocity, my power limitations, the bush density and my plan of action, going through it all mentally. Homing in on to the big male with no collar first I checked that Andre was ready to dart. The ideal distance for the dart is 15 meters and Andre needs to place the dart into a good muscle group of the sprinting cheetah while I am diving between trees to get him on to target. It is of paramount importance to not chase the cat and exhaust it, also to not waste very expensive darts and drugs so timing is everything. I approach the cheetah low and gradually let him sort of get used to me and start running at his own pace, keeping him on my nose as long as possible, for a moment smugly wondering what it feels like for this predator to suddenly find himself being the one chased.

Looking ahead to predict my moment I warn Andre to get ready then accelerate to close our distance while simultaneously yawing left and diving below tree level in a small clearing for a couple of seconds and hold everything steady with no sudden movements allowing a stable darting platform. At this time I remove my main vision from the animal. Focusing on the danger obstacles that may harm the machine, in the form of trees, I keep the animal in my peripheral vision and hyper focus on the entire moment, feeling the amount of collective and listening to the engine to remain out of the yellow. This moment is all we need and the dart hits nicely in the left buttock. I start the timer and pull back, climbing well away since we do not want to chase and excite the animal at all, but this presents a new problem - ever tried to watch a camouflaged cheetah in bush from 500 feet and 400 meters? If you take your eye off the animal for two seconds you will lose it, gone, vanished!

The ground crew moves in closer. I maneuver the cheetah closer to a track through the bush keeping well away from him and wait. 8 minutes and the drug shows its effects. The once agile cat wobbles and fumbles his way onto the road and finally falls over. Within 45 minutes the collar is fitted and the operation is completed. I am back in the air and circling to track his mate, repeating the whole process. Two more cheetah are now assisting in an important research project which will ultimately lead to our better understanding of their needs and in so doing, hopefully keep them from extinction. None of this would be possible without the dedicated team at De Wildt, or the endless logistical planning and runnings around of Tim Neary.