

Samora Machel's death and South African radar

by Paul Fauvet

One major unanswered question concerning the crash of President Samora Machel's Tupolev 134 on 19 October is why South African air traffic control did not warn the pilot that he was off course and in danger of entering South African airspace.

The plane had been tracked on South African radar for hundreds of kilometres. According to the Johannesburg paper Business Day of 21 October "a top government source said 'our guys had the plane on their radar even when it was still over Zimbabwe'".

Yet no warning was given to the doomed Tupolev, even as it headed for a militarily sensitive area. For the corner of the eastern Transvaal where the crash took place, near the junction of the Mozambican, Swazi and South African borders, is a total air exclusion zone.

It is also where at least two landmines had exploded in the previous fortnight, and military garrisons in the region had been strengthened in the days immediately preceding the crash.

Only a week after the disaster did the South African press address the problem of the radars. "South African monitors paid little heed to Machel flight", announced a headline in the Sunday Star of 26 October. According to this story, when the plane disappeared from the radar screens, officials "thought nothing of it", since it was not in South African airspace.

But if they thought it was so unimportant, why had the radars been following it from Zimbabwe. The radars must also have detected, while it was still well inside Mozambique, that the plane's course was taking it into South Africa.

On 1 November, South African Foreign Minister Roelof Botha tried to explain away the behaviour of South African radar operators in a television interview on

the programme "Good morning, South Africa". According to Botha the flight "just disappeared from the screen. No-one monitoring that radar could or would have imagined that there was anything strange about it".

"Every radar station has what we call an horizon beyond which it cannot see any object", said Mr Botha. "You cannot see an aircraft once it has passed over a mountain, for instance, and is on the other side".

"There are quite a number of flights in that vicinity of the Kruger Park and so on", continued the minister. So the radar operators "must be seeing virtually all the flights fading or disappearing at one stage or another".

In this interview Mr Botha tries to make out that there is a heavy amount of air traffic down the Mozambique/South African border at 21.00 on a Sunday night (in fact, as far as is known, the Tupolev was the only flight in the area that night), and that the radars lost the presidential plane when it disappeared behind a hill.

In other words, the Foreign Minister would like us to believe that South African radar is rather primitive and inefficient.

But in fact South Africa possesses a highly sophisticated integrated military and civilian computer-assisted radar system, whose two prime purposes are to assist in South African Air Force strikes into neighbouring countries, and to detect any plane entering South African airspace.

A good radar system needs to be placed high up so that it can "look" down and avoid the problem of planes hiding behind hills. Several radar stations located a good distance from one another will also make it difficult for any plane, whether accidentally or by design, to use the landscape to "disappear" from radar vision.

This is, naturally, the kind of system we find in South Africa. Furthermore, it is not very secret. The South African papers themselves have written openly about it.

One of the main radar installations is at Mariepskop, 2,000 metres up, on the edge of the Drakensberg mountains. This is what the Johannesburg Star of 8 February 1975 had to say about this installation: "Only metres away from where

the Drakensberg escarpment falls to the lowveld, the big scanner whirls silently around. It can pick up most aircraft movements from a large chunk of Botswana in the west, to Rhodesia in the north, to southern Mozambique and Natal in the east. Height finders are positioned nearby. They can calculate the height of any aircraft picked up by the scanner".

Mariepskop is an early warning station, designed to give the alert against "hostile aircraft approaching South Africa from over her borders".

"All information gathered by the softly sweeping scanner - aircraft appear as tiny pinpricks of light on the screens - can be fed in computer form to the headquarters of South Africa's radar defence system at Devon. Virtually instant computer feedback from Devon can supply Mariepskop with the information needed to identify an aircraft".

"Besides Devon and Mariepskop there are two other stations in the northern radar system, covering each other. The zones covered by the four stations overlap so each base can see the one next door".

In other words, it should have been quite impossible for the presidential Tupolev to escape radar surveillance.

These radar defences are no joke: according to the Star of 29 November 1975, the Devon computer centre is "buried under reinforced concrete capable of withstanding a 10 kiloton nuclear explosion".

The computers at Devon try to work out whether any intruding aircraft is "friend or foe". If they think it may be hostile, "the controllers at Devon can call on a whole range of defences, including Mirages and other jet fighters, surface-to-air missiles and anti-aircraft cannon".

This was what the South African radar defence system was like over a decade ago. Now it is even more sophisticated, particularly through South Africa's acquisition of the Plessey AR-3D computerised radar system, which was integrated into its air defences in 1982.

The 1979 South African Defence White Paper had stated that "modernisation of the static air defence radars to ensure a better airspace control is being

planned. At the same time the mobile system is being expanded considerably to protect mobile forces during deployment and to supplement the static system".

The Plessey system fits the bill. It is fully mobile, and according to the Plessey company itself, the system "can be geographically arranged as needed to operate under command of the strategic HQ". It can be used for both offensive and surveillance purposes. Its inputs, boasts Plessey, "provide a complete picture of the air situation for the central command staff".

A complete picture. Not a partial picture from which something as large as a Tupolev 134 can mysteriously disappear.

The 1979 Defence White Paper also made it clear that there were to be no "holes" in the radar system. It said "the South African Air Force is constantly carrying out air reconnaissance. Various sensors are used in this process to obtain maximum information. Reconnaissance systems are constantly being modernised in order to keep abreast of operational requirements".

Thus, from documents that are already public knowledge, it is evident that South Africa can keep its entire border area under 24 hour radar surveillance, and the chance of any aircraft evading this is vanishingly small.

The conclusion to be drawn is that the Tupolev was on the radar screens up until the moment of its crash. The radar operators knew it was off course, knew it was entering South African airspace, knew the Pequenos Libombos mountains presented a serious threat to the aircraft, and yet no warning was given, no preventive action was taken.

The computer centre at Devon doubtless identified the plane as Samora Machel's Tupolev. After all, there was nothing secret about the President's trip to Zambia, and the radars would have followed its journey from Maputo to Zambia earlier in the day. No other plane was expected along that route.

The South African authorities knew whose plane it was, they knew exactly when and where it crashed - yet they did not inform the Mozambican authorities for another ten and a half hours. The first message was sent to Maputo at 06.50 the following morning.