

The TU-134A plane on board which the President of the People's Republic of Mozambique, Samora Machel, was flying home from Zambia crashed in Natal Province, South Africa, on October 19, 1986. The circumstances of the tragic death of the African statesman and politician still hold the attention of the general public and the media.

At the request of the New Times editorial board, journalist Gennady MAXIMOYICH interviewed executive secretary of the U.S.S.R. Commission for the affairs of the international Civil Aviation Organization (ICAO) Boris RYZHENKOY about a number of questions connected with the crash.

# Who killed Samora Machel?

## Those who operated a decoy beacon, Soviet experts say

Publications containing different versions about the cause of the crash of the TU-134A plane with Samora Machel on board continue to appear in the foreign press. The Soviet view on this question was set out at a briefing in the press centre of the U.S.S.R. Foreign Ministry and differences between members of the international commission conducting the inquiry into the causes of the crash were reported. What, in essence, are these differences?

The U.S.S.R., Mozambique and South Africa are represented on the commission. Under ICAO provisions, the country where a plane crashes, in this case South Africa, should conduct an investigation. The country to which the aircraft belongs, and the country where it was manufactured should also participate. In this case these countries were respectively Mozambique and the Soviet Union.

It was perhaps the first time that South African aircraft experts have visited the Soviet Union. In Moscow, the sides were able to cooperate fruitfully and even draft a joint document. Things were going smoothly, it seemed, but when the tripartite protocol on the report on factual information was being signed on January 16, the representatives of South Africa flatly refused to continue to work on the joint commission to formalize the final report, which was to contain the conclusions about the causes of the accident.

The South African authorities adopted a unilateral decision to elaborate the final

report of their judiciary body which would hold so-called hearings on the circumstances of the crash. American and British experts were invited to the hearings to give them semblance of an international character. They were not familiar either with Soviet aircraft equipment or its operation. Mozambican and Soviet experts were to be assigned the role of witnesses at the hearings, and a cross-examination was to be conducted during them.

This decision, which made it impossible to conduct and complete the work on an equal tripartite basis, was unacceptable to the Soviet side. Mozambique adopted a similar stand on the matter. In these circumstances we were faced with the need to make our own analysis on the basis of the existing evidence. Our conclusion about the crash was arrived at on this basis. Naturally, this was preceded by an additional investigation into the causes of the accident.

The South African authorities compiled their draft final report and on March 12 handed it to Mozambique and the U.S.S.R. for consideration and the preparation of critical remarks. Under ICAO rules 60 days are given for the purpose. We managed to do this within the time allotted. But since South Africa showed gross bias in analyzing the factual data, what the Soviet side prepared were not just critical remarks but its own text of the final report.

The Politbureau of the FRELIMO Party of Mozambique opted for a continued inquiry on a tripartite basis. The Soviet side has supported this proposal. How is this to be understood in view of the fact that the Soviet side has actually completed the investigation and made its conclusion known to the South African authorities?

Our document has not raised the question of responsibility. Under ICAO rules, the purpose of an inquiry is not to establish who is guilty, but to prevent air accidents. ICAO holds that if the investigation aims at establishing responsibility, the persons involved, for understandable reasons, will be reluctant to give testimony that might incriminate them or their colleagues. So certain, indeed, all the factors that led to the accident could well have remained concealed. Therefore an inquiry should be held not in order to establish the guilt, but in order to elucidate the causes of an accident and, most importantly, to take measures to prevent accidents.

Let us recall what happened on October 19, 1986. The plane with Samora Machel and the persons accompanying him on board, piloted by a Soviet crew, was making a flight from the Zambian airport at Mbala to Maputo. The tripartite commission established that the aircraft had been functioning normally, the members of the crew were all in good health, had the necessary skills, and reacted adequately to navigational information. The flight was effected by an autopilot. Manual steering was used during the descent. It was a night flight conducted in normal weather. Some 100 km from Maputo airport, the plane, following the radio range lead, swerved 37 degrees to the right - and crashed into a mountainside. Confident that the plane was approaching Maputo, the crew started to descend on the flight controller's clearance.

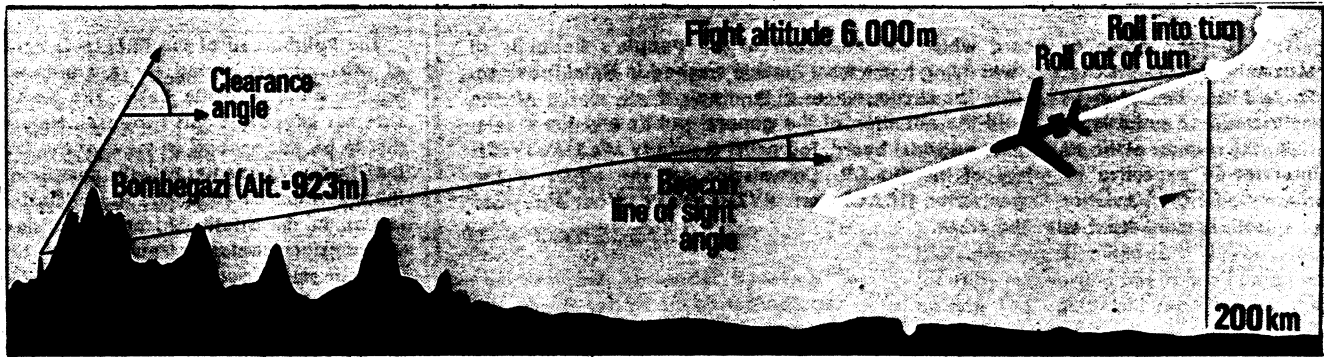
The examination of the remaining instruments has not identified any reasons for the spontaneous change of direction on board the plane. This indicates that such causes were outside the plane.

The experts on the tripartite commission, having analyzed the contents of the black box, singled out the key phrase throwing light on what happened. When the pilot-in-command remarked on the right turn, the navigator answered that it had been indicated by high-frequency omnidirectional radio range.

Hence, the plane veered in response to a signal from a ground radio range picked up by the plane's navigational systems. Everyone accepted this view.

And what about the South African representatives?

They agreed with this, too. But later, seeking to put the blame on the pilots, they declared that it was the crew's error that was the main cause for the plane veering. They now assert that the plane



As the chart shows, since the 923-metre Mount Bombegazi was screening the radio tower at Swaziland's Matsapha airport from the plane, the tower could not have misrouted the TU-134A.

strayed off course for the reason that the crew had erroneously turned the on-board equipment to the radio range of the Swaziland airport of Matsapha with a frequency of 112.3 MHz, instead of to that of Maputo airport with a frequency of 112.7 MHz.

These frequencies are quite close, indeed, but the crew did not make that mistake. The examination of the electronic units of the on-board compass system of the plane showed that it had been correctly tuned to the frequency of the radio range of Maputo. Besides, the line of the actual route of the plane reconstructed from the data in the black box did not correspond to a flight based on the radio range of Matsapha. All this contradicts the version advanced by South Africa.

The wave propagation zone of the Matsapha radio range was also calculated. These calculations show that the beacon, situated in a mountainous area, was screened off from the plane by Mount Bombegazi and could affect the plane's equipment at a distance of up to 135 km. At the moment when the plane's course was altered it was at a distance of over 200 km. from Matsapha, and its on-board equipment could not pick up the signals of the beacon in Matsapha. Even after the plane veered it was still out of the radio range visibility because of the "screen" of Mount Bombegazi and its radio contact diminished as the plane descended. Thus, the South African version is absolutely untenable.

All this makes it possible to draw the conclusion that false information was flashed on board the presidential plane on the frequency of the Maputo beacon. This led to the change in the plane's course and ultimately to the crash.

It was no fortuity that a statement by the Politbureau of the FRELIMO Party called for establishing the whereabouts and identity of the false radio beacon that

lured the presidential plane from its course. This is not at variance with either our stand or our conclusion.

And still, if this false radio beacon has not yet been discovered, the reference to it as the main cause of the disaster is merely one possibility out of many.

All the existing versions were thoroughly analyzed during the investigation by Soviet experts. It was established as a result that not one of them, apart from the version about the false beacon, holds water.

The exact location of the false beacon has not been established, largely because such an aim has not been set. It must be said, however, that traces of an army camp have been found by the tripartite commission some 150 metres from the place where the plane crashed. Witnesses said that it was abandoned the day after the crash. We do not want to say that the false beacon was situated precisely there, but there are many indications that the beacon existed. I have already mentioned some of them. And here is another. A Boeing-737 airliner of the LAM airlines making a flight to Maputo from Beira airport 50 minutes after the presidential plane, also veered off course by 40 kilometres to the right. The Boeing was proceeding towards the scene of the crash till it was called back by air traffic controllers to Beira as Maputo airport was closed. The airliner's crew stated that they had been fully confident of their reading of navigational instruments tuned to Maputo, and that they would have continued the flight.

But I cannot see why the crew was following the false beacon instead of the proper one.

The point is this. The false beacon apparently had a stronger signal, and the needle of the radio compass of the TU-134A liner reacted to it. We have carried out an experiment and established that a plane's equipment reacts to a beacon with a stronger signal even if it is off the plane's course.

So this experiment and other additional research confirmed the conclusion of the Soviet side that the crash was caused by the deliberately wrong use of radio equipment. It is this that made the plane stray off course.

Incidentally, the use of such false radio beacons is nothing new. Britain and Germany often made use of them during the second world war to mislead the enemy. We know such beacons are still manufactured.

The question suggests itself: since all the flight systems were functioning normally, why didn't the crew react to the hazard warning device, and why didn't it use additional navigational aids, including the Maputo broadcasting station and on-board radar?

The crew reacted to the signal. The flight recording shows that the rate of descent lessened as required by the air navigation manuals. But the black box showed that the crew had had doubts about the correctness of the altimeter signals. This reading of the altimeter resulted from its response to signals from a Mozambican military radar that was directing the plane's course, and of which the crew were, naturally, unaware. Having no doubt that the flight was proceeding over a plain in the area of the Maputo airport where there are no heights over 125 metres, the crew, getting clearance to descend, continued to drop the plane for landing.

And when there is such a highly effective and reliable navigational aid as a radio beacon, the use of additional navigational facilities - a broadcasting station and an on-board radar - for landing may be required only if there are doubts about the correctness of its functioning. But steady signals coming from the false beacon confirmed to the crew the correctness of the course maintained after the plane veered to the right.

And the last question. What was the reaction in South Africa to the stand of the U.S.S.R. and Mozambique?

A report of the South African Ministry of Transport Affairs was issued late in May. It said that neither the ministry nor the persons who conducted the inquiry would comment on the Soviet Union's statement that the crash of Samora Machel's plane had been caused by a false radio beacon. They intend to study our materials thoroughly. Time will tell whether this study is objective.