

SERIOUS INCIDENT CAVOK AIR AN 74 - SAO TOME' AND PRINCIPE - COMMENTS ON THE FINAL REPORT

Investigations on aircraft accidents and incidents that occurred as a result of an impact with wildlife are not frequent. Perhaps because the causes of the events are usually clear in themselves and perhaps because - erroneously – there is a general belief that nothing has to be recommended. Actually, those involved in wildlife strikes know that the matter is often underestimated by the investigators, who in turn sometimes would need to be adequately trained. In this case, given the seriousness of the event, the investigation was inevitable and its findings will be the subject of some observations and reflections.

The final report of the incident that occurred on 29.07.2017 on the Sao Tome airport involving an Antonov 74-TK-100, UR-CKC, belonging to the Ukrainian company Cavok Airlines, was therefore released in recent days.

Sao Tome is the only international airport of the archipelago of Sao Tome and Principe, a small independent republic since 1975, located in the Gulf of Guinea. The investigation report was produced by the Banjul Accord Group Accident Investigation Agency (BAGAIA), as the small republic does not have its own authority, while the investigation itself was conducted by the Nigeria Aviation Authority on behalf of BAGAIA.

Very briefly, at the beginning of the take-off roll, the crew “*saw five to six eagles get off the ground of the runway which flew dangerously close to the aircraft at the beginning of the take-off roll*”. Continuing the take-off run, and passing a “hump” in the middle of the runway that blocked the view of the next half, a flock of “eagles” was suddenly seen flying off the runway and hitting the aircraft that suffered multiple impacts and the ingestion of birds in the left engine. This engine failed probably due to ingestion and at this point, even though the V_1 had passed, the Captain decided to reject the take-off. Consequently, the aircraft did not stop and overran the runway, ending in a small ravine and was completely destroyed. There were no casualties except for a crewmember slightly injured.



We suggest to read the full report (130 pages):

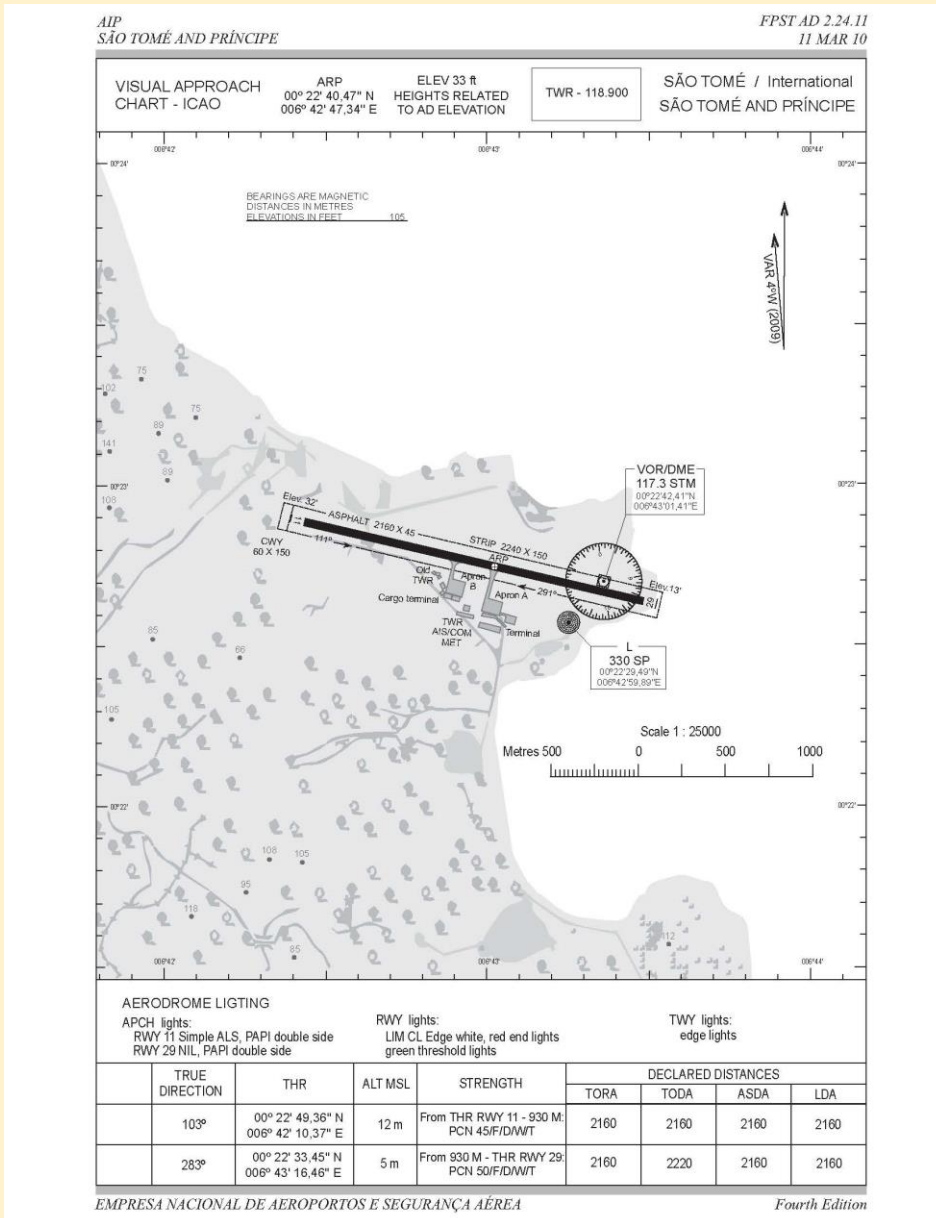
http://aib.gov.ng/media/1190/ur-ckc-final-report_edited-by-creativehr_ready-for-print-22112018.pdf

which in some points looks like an essay on bird strikes and decision-making. Here we will focus on what there is NOT in the report, and we believe should instead be there, or that has been barely hinted at.

Describing the event the report states that “***Sao Tome Tower did not provide the flight crew with the information about possible presence of birds at the aerodrome, in particular, on the runway***”, not an irrelevant statement if we take into account that the local AIP literally reads: “*FPST AD 2.23 ADDITIONAL*

INFORMATION - Bird concentrations in the vicinity of the airport - Birds may at times flock on the grass around the runway. If large concentrations of birds are seen on or near the aerodrome, pilots of aircraft will be so informed by ATS."

So the concentration of flocks of birds around the runway was a known and expected phenomenon and its observation and communication to the crews by the ATS was foreseen, in this case we must suppose by the TWR.



The carcass of a single bird was found on the runway after the impact, belonging to a Common Honey Buzzard (*Pernis apivorus*). This bird of prey is 51-57 cm. long, has a wingspan of 115-136 cm. and a weight between 510 and 1050 g. (source Wikipedia). When settling on the ground its height should be around 40/50 cm. It is therefore a great bird of prey. However, there is no mention in the investigation report of the physical features of the bird, and of its possible visibility, even at a distance.

Therefore, the inevitable question that should be asked concerns the visibility of a flock of hawks by the TWR controller. The investigation has preliminarily established that **"airport services did not carry out the runway inspection prior to the departure on the presence of the birds before taking-off as required by the Airport Wildlife Control Program"**.

This circumstance should have alerted the TWR controller who should have at least visually inspected the runway before authorizing the take-off.

The TWR is located about 250 meters from the runway center and should have complete visibility of the runway and the surrounding grassy areas.

If the Captain's statements are true, and the investigation report does not question them, a flock of hawks settling on the runway (how many individuals: 10, 20 ...?) should be clearly visible from the TWR, also because the birds rarely remain motionless, some flit about here and there, showing wingspans of more than one meter.

Coming therefore to the investigation conclusions, and especially to the recommendations released, the report concludes that the serious incident was caused basically by the delayed start of the rejected take-off at a speed above decision speed V_1 . Contributory factors were the failure of the crew to deploy the speed brakes/spoilers), the inadequate flight crew training, poor Crew Resources Management (CRM) as well as a failure in the pre-take-off briefing.

Not a word instead on the lack of information to the crew about the presence of birds on the runway, which instead had been recognized shortly before as a duty, and to the state of implementation of the bird control plan.

However, the report does not seem to remedy this shortcoming even with the recommendations addressed to the National Aeronautical Authority of Sao Tome and Principe (Instituto Nacional de Aviacao Civil) where the topic is not touched:

4.1.1 Should improve the habitat management programme (including reduction or elimination of trees, shrubs and other plants which provide food, shelter or roosting sites for birds)

4.1.2 Should enhance its aerodrome grass management appropriate to the prevalent species and the degree of risk that they pose.

4.1.3 Should liaise with local inhabitants to limit the attraction of birds to fields (in the vicinity of the airport).

4.1.4 Should install specialized ground-based radar equipment used for tactical detection of large flocking birds.

4.1.5 Should adopt and extend Runway End Safety Area to conform to ICAO standards.

4.1.6 Should include the information about the ravine at the end of RWY 29 into the AIP and Send it as Notice To Airmen (NOTAM).

However, these are generic recommendations that seem to be drawn from any wildlife management manual for airports, which are themselves correct, but which may appear redundant when applied to airports such as the one in question. Apart from the first two points that go well everywhere, which other part of the investigation report refers to wildlife attractive factors in the vicinity of the airport dependent on local communities?

If it was decided to issue a recommendation to this effect why not describe the surrounding area by indicating what are the attractive factors?

Furthermore, it is even recommended to install avian radars for tactical purposes (*i.e. to see and avoid*) that not only are not yet in use in many airports much more important than this one, but where they are, their tactical use is still under discussion.

Above all, it's completely lacking any recommendation regarding the essential information to be provided to crews according to the ICAO DOC 4444, despite the report states that: ***"Aircraft operators should be given specific, timely and reliable information which will allow them to adapt their flight schedules in order to ensure the safety of their aircraft, just as they would do to mitigate other hazards such as wind shear, icing, and volcanic ash"***.

And again: *“(Airport) Operators should ensure that flight crew are properly informed about known bird hazards which may affect them before commencing their flights, whether such information is published in AIPs, NOTAMs or BIRDTAMs (where available), or **has been directly determined by the Operator**”.*

But what specific, timely and reliable information can be better than that collected by the TWR, which from the top of its station and equipped with a good pair of binoculars, can check the presence of birds on the runway and potentially suspend the take-off clearance? Information coming from direct observation, which is actually expressly mentioned.

And why not then reiterate the need (and obligation) that the TWR controller visually inspects the runway and surroundings before each take-off and landing, thus providing a further contribution to the ground bird control teams (which in fact did not do their job)?

Other detected shortcomings of the airport organization did not result in timely recommendations to the competent authorities, which in our opinion represent the most important part, the *raison d’être*, of aeronautical investigations: *“Statistics of bird strike collisions in the aerodrome area is not properly kept”* and also the aforementioned: *“Airport services did not carry out the runway inspection prior to the departure on the presence of the birds before take-off”*.

We are not able to produce extracts from the ATM (Air Traffic Management) Manual of Sao Tome and Principe as it is not present on the web, but we are well aware of the problems related to the role and the involvement of the ATC service in the prevention of wildlife strikes. The “interpretation” of ICAO regulations by individual States has given way to different solutions ranging from the most complete disinterest in the problem to the active involvement of the TWR controller. We hope that these aspects will be standardized as soon as possible in the most favourable sense for flight safety purposes.

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