



## *Interim statement* *SRL 2015:02e*

**Interim statement in accordance with Article 16(7) of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation.**

**Serious incident close to Visby Airport on 30 November 2014 involving the aeroplane SE-MDB of the model ATR-72-212A, operated by Braathens Regional AB.**

File no. L-148/14

30/11/2015

In accordance with Article 16(7) of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation, and Section 13 b of the Accident Investigation Ordinance (1990:717), the Swedish Accident Investigation Authority (SHK) hereby publishes an Interim Statement on this ongoing investigation. It follows from those provisions that such a statement shall be published if a final report cannot be published within twelve months of the event.

The content of this statement is based on the facts gathered during the investigation so far. It is published before the investigation has been finalized. Thus the present material may be supplemented, amended or not included in the final report.

SHK investigates accidents and incidents from a safety perspective. Its investigations are aimed at preventing a similar event from occurring again, or limiting the effects of such an event. The investigations do not deal with issues of guilt, blame or liability for damages.

The report is also available on SHK's web site: [www.havkom.se](http://www.havkom.se)

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## General observations

The Swedish Accident Investigation Authority (Statens haverikommission – SHK) is a state authority with the task of investigating accidents and incidents with the aim of improving safety. SHK accident investigations are intended to clarify, as far as possible, the sequence of events and their causes, as well as damages and other consequences. The results of an investigation shall provide the basis for decisions aiming at preventing a similar event from occurring again, or limiting the effects of such an event. The investigation shall also provide a basis for assessment of the performance of rescue services and, when appropriate, for improvements to these rescue services.

SHK accident investigations thus aim to answer three questions: What happened? Why did it happen? How can a similar event be avoided in the future?

SHK does not have any supervisory role and its investigations do not deal with issues of guilt, blame or liability for damages. Therefore, accidents and incidents are neither investigated nor described in the report from any such perspective. These issues are, when appropriate, dealt with by judicial authorities or e.g., by insurance companies.

Nor does the task of SHK include investigating how persons affected by an accident or incident have been cared for by hospital services, once an emergency operation has been concluded. Nor are measures in support of such individuals by the social services, for example in the form of post crisis management, the subject of the investigation.

Investigations of aviation incidents are governed mainly by Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation and by the Accident Investigation Act (1990:712). The investigation is carried out in accordance with Annex 13 of the Chicago Convention.

According to Article 16(7) of the EU Regulation, the safety investigation authority shall on the anniversary after the accident or incident release an interim statement in those cases where a final report has not been published after 12 months.

The statement contains – besides a report of the sequence of events – information on the progress of the investigation and relevant parts of the factual material gathered in the case. Publication of the interim statement takes place during a phase where the investigation has not yet been completed, for which reason the content of the material now presented may be supplemented, amended or omitted in the final report.

The interim statement has not undergone the consultation process that precedes the publication of a final report. Hence, SHK cannot guarantee that everything presented in this interim statement will be part of – or be identical to – the content in the final report on the event subsequently published.

### **The investigation**

SHK was informed on 01/12/2014 that a serious incident involving an aircraft with the registration SE-MDB had occurred close to Visby, Gotland county, on 30/11/2014 at 12.20 hrs.

The serious incident is investigated by SHK represented by Mr Jonas Bäckstrand, Chairperson, Mr Sakari Havbrandt, Investigator in Charge, and Mr Nicolas Seger, Operations Investigator.

The investigation team of SHK is assisted by Mr Ulf Ringertz as an expert specializing in aeroelasticity and Mr Kristoffer Danél as an expert specializing in aerodynamics.

Mr Arnaud Toupet participates as accredited representative on behalf of France and Ms Carol Horgan participates as accredited representative on behalf of USA.

The investigation is followed by Mr Björn Pettersson of the Swedish Transport Agency.

The following organisations have been notified: International Civil Aviation Organisation (ICAO), European Aviation Safety Agency (EASA), EU-Commission and Swedish Transport Agency (Transportstyrelsen).

## Interim statement SRL 2015:02e

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Aircraft:	
Registration, type	SE-MDB, ATR72
Model	ATR-72-212 A
Class, Airworthiness	Normal, Certificate of Airworthiness and Valid Airworthiness Review Certificate (ARC) <sup>1</sup>
Serial number	822
Operator	Braathens Regional AB
Time of occurrence	30/11/2014, 12.20 hrs in daylight Note: All times are given in Swedish standard time (UTC <sup>2</sup> + 1 hour)
Place	Visby, Gotlands county, (position 5753N 01816E, 2 100 meters above mean sea level)
Type of flight	Commercial Air Transport
Weather	According to SMHI's analysis: wind east to southeast 5-8 knots, visibility >10 kilometres, varying amount of clouds with base at 1 500-1 800 feet, temperature/dew point 0/-1 °C, QNH <sup>3</sup> 1030 hPa According to the pilots VMC <sup>4</sup>
Persons on board:	55
crew members including cabin crew	4
Passengers	51
Injuries to persons	None
Damage to aircraft	Slightly damaged

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<sup>1</sup> ARC (Airworthiness Review Certificate).

<sup>2</sup> UTC (Coordinated Universal Time).

<sup>3</sup> QNH (Barometric pressure at mean sea level).

<sup>4</sup> VMC (Visual Meteorological Conditions).

## The event

During descent through 7 000 feet at a speed close to V<sub>mo</sub> (250 kt) and with the power levers at flight idle, severe vibrations occurred. The magnitude of the vibrations was such that the pilots had difficulties to read the instruments and the flight attendants had problems to move around in the cabin.

The pilots feathered and shut down the right engine after some different measures to identify which engine was vibrating. The vibrations disappeared and an uneventful single engine landing was performed at Visby Airport.

An inspection of the right hand power plant revealed severe damage inside the propeller hub. One trunnion bearing had failed and the actuator plates were bent. The compressor housing was fractured and there was damage on the engine mounts. Furthermore the drive shaft for the AC-wild generator was broken.



Figure 1 and 2. The failed trunnion pin.

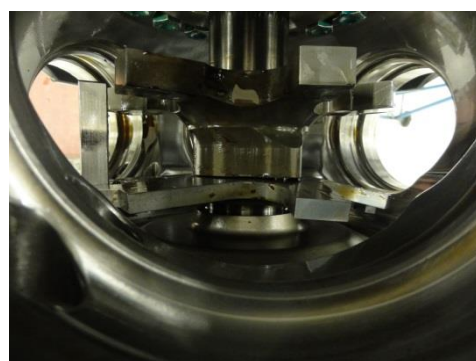


Figure 3 and 4. The bent actuator plate.

## Investigation status

Before the actual event six other similar events had happened in the period 2007 to 2014. Two of these events are under investigation of other foreign authorities. The other four events have not been investigated by any Safety Investigation Authority.

SHK has performed the following activities:

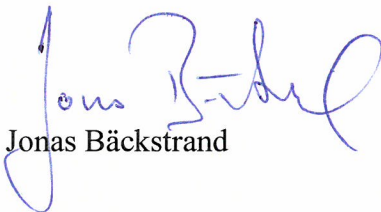
- FDR/CVR read out and analysis.
- Propeller examination.
- Engine examination.
- AC-wild generator shaft failure examination.
- Studying design changes since 1994.
- Analysis of possible failure mechanisms.

Neither SHK nor the other ongoing investigations have been able, at this stage, to conclude the root cause for the serious incidents.

SHK's assessment is that a large amount of research, including hardware testing and flight test, is required to find the root cause and the appropriate correcting actions. SHK's position is that this is a task for the aircraft and propeller TC-holders under supervision of the certifying authorities.

Against this background SHK intends to close the investigation with the existing evidence and publish a final report in the first quarter of 2016.

On behalf of the Swedish Accident Investigation Authority,



Jonas Bäckstrand



Sakari Havbrandt