

# Investigation Report

TX001-0/01  
July 2001

## Factual Information

Kind of occurrence:	Incident
Date:	20. March 2001
Location:	near Norvenich VOR
Aircraft:	Transport category aeroplane
Manufacturer/type:	Saab AB / Saab 2000
Injuries to persons:	no injuries
Material damage	Aeroplane slightly damaged
Other damage:	none

## History of the flight

The flight crew carried out a scheduled flight from Paris (CDG) to Cologne/Bonn. Four crew members and 27 passenger were aboard the aeroplane.

On the flight route section (UJ 905) from ARCKY to NORVENICH VOR under instrument meteorological conditions (IMC) - the flight crew had just been instructed by the responsible ATC unit to immediately descend from flight level FL 210 to FL 180 - the flight crew as well as the cabin crew heard a short and loud noise (like an explosion) in the rear area of the aeroplane. The flight crew thus declared an emergency (crew used urgency signal PAN PAN) and requested to be cleared for an immediate landing to the airport Cologne-Bonn and asked for the provision of rescue services. As a result the distress phase 1 was released at the airport. Afterwards the flight crew checked all aeroplane parameters and systems. No anomalies could be found. The aeroplane was landed without any problems.

## Investigation

The BFU appointed an airport officer to secure clues. The flight data recorder (DFDR) and the cockpit voice recorder (CVR) were removed and sent to Braunschweig in order to be analysed. One day after, a staff member of the BFU started his field investigation.

During a visual inspection of the aeroplane after the landing, it was found that the paint had been split off in the fuselage/stabilizer transition area (approximately over an area of 10 cm x 15 cm). Furthermore a pressure door (which had been attached by means of an interlocking tape) within the rear baggage compartment of the aeroplane was found open.

The technical staff of the operator checked all aeroplane devices and systems. No malfunctions could be found.

The visual inspection of the aeroplane by the responsible staff member of the BFU did not give any information about this occurrence either. There was no indication of a collision with a foreign body or another aircraft.

The radar recordings evaluated for the route section concerned showed that there was no conflicting traffic with other aircraft at the time of the accident. The instruction given by the controller to the flight crew to immediately descend from FL 210 to FL 180 was due to crossing traffic to be expected, which was at a distance of 10 nm at the time the instruction was given.

The evaluation of the DFDR confirmed the occurrence acoustically registered by the crew. At 14:36:48 hrs shortly after leaving FL 210 acceleration forces about all three axes of the aeroplane were registered.

During the descent from FL 210 to FL 180 a considerably higher amplitude of the cabin sink rate

oscillation (pressure regulation) as compared with preceding flights was found. According to the judgement of the aeroplane manufacturer, who had been involved in the investigation and had received a copy of the DFDR recording, this had not caused the incident.

None of the further parameters recorded gave any indication of a possible cause.

The evaluation of the CVR did not provide any findings as the moment of the incident had already been overwritten.

According to the statements of the crew there was neither turbulence nor icing at the time in question.

According to a flight meteorological information requested from Deutscher Wetterdienst (German Meteorological Services) lightning strikes in the vicinity of the aeroplane had not been recorded.

Also possible radiosonde ascents in the vicinity of the flight route had been investigated. A collision with a radiosonde could be precluded as well.

At the moment of the occurrence the aeroplane flew over Elsenborn Shooting Range (EB-D4) in Belgium, which had been activated by NOTAM up to 2000 m. According to a statement of the Belgian military administration, shooting activities had already been stopped when the aeroplane flew over the shooting range.

## Assessment

The incident had been recorded by the DFDR.

A connection between the damage to the aeroplane (paint split off) and the incident could not be established in the course of the investigation.

According to the technical findings made by the operator it is to be assumed that the incident had not been caused by a technical defect of the aeroplane.

An in-flight collision and/or a near miss with other aircraft can be precluded with a high probability.

The investigation conducted did not indicate that in a closer temporal connection with the occurrence ("a short and loud noise") a serious incident according to the German Law Relating to the Investigation into Accidents and Incidents Associated with the Operation of Civil Aircraft (FIUUG) dated August 26<sup>th</sup> 1998 had occurred.

## Conclusions

The cause of the incident could not be found.

Untersuchungsführer	Krupper
Untersuchung vor Ort	Schinzle Leibe