Havarikommissionen
Accident Investigation Board Denmark

BULLETIN

Serious incident

21-2-2019

involving

ATR72-201

OY-RUR

FOREWORD

This bulletin reflects the opinion of the Danish Accident Investigation Board regarding the circumstances of the occurrence and its causes and consequences.

In accordance with the provisions of the Danish Air Navigation Act and pursuant to Annex 13 of the International Civil Aviation Convention, the safety investigation is of an exclusively technical and operational nature, and its objective is not the assignment of blame or liability.

The safety investigation was carried out without having necessarily used legal evidence procedures and with no other basic aim than preventing future accidents and serious incidents.

Consequently, any use of this bulletin for purposes other than preventing future accidents and serious incidents may lead to erroneous or misleading interpretations.

TABLE OF CONTENTS

BULLETIN

General

File number:	2019-69
UTC date:	21-2-2019
UTC time:	15:35
Occurrence class:	Serious incident
Location:	Copenhagen, Kastrup (EKCH)
Injury level:	None

Aircraft

Aircraft registration:	OY-RUR
Aircraft make/model:	ATR72-201
Current flight rules:	Instrument Flight Rules (IFR)
Operation type:	Scheduled
Flight phase:	Climbing
Aircraft category:	Fixed wing
Last departure point:	Copenhagen, Kastrup (EKCH)
Planned destination:	Karup (EKKA)
Aircraft damage:	None
Engine make/model:	PRATT & WHITNEY (CANADA) PW100 FAMILY (PW 124B)

SYNOPSIS

Notification

All times in this report are UTC.

The Aviation Unit of the Danish Accident Investigation Board (AIB) was notified of the serious incident by the operator on 21-2-2019 at 23:07 hrs.

The AIB notified the Danish Transport, Construction and Housing Authority (DTCHA), the International Civil Aviation Organization (ICAO), the Canadian Transportation Safety Board (TSB), the French Bureau d'Enquêtes et d'Analyses (BEA) , the European Aviation Safety Agency (EASA) and the Directorate-General for Mobility and Transport (DG MOVE) on 27-2-2019 at 10:07 hrs.

The BEA appointed a non-travelling accredited representative to the AIB safety investigation.

FACTUAL INFORMATION

History of the flight

The serious incident flight was an IFR scheduled domestic flight from EKCH to EKKA.

The serious incident flight was the second flight of the day.

Aircraft scheduled maintenance was performed in the period between the first flight and the serious incident flight.

After engine start and during taxi to the departure runway, the right hand engine air conditioning pack valve caution triggered. The flight crew reset the pack valve and normal operation was resumed.

Following take off from runway 22R, when passing an altitude of 500 feet mean sea level (msl), the flight crew set engine climb power.

Shortly after and approaching approximately 1000 feet msl, the flight crew sensed a chemical or electrical smell in the cockpit.

The first officer perceived smoke (..*it looks misty*..) in the commander foot well area, but the commander did not observe any smoke.

The flight crew donned oxygen masks and declared an emergency, requesting a diversion back to EKCH.

Air traffic control issued left hand radar vectors to runway 30.

While the first officer flew the aircraft, the commander performed the SMOKE and the ELECTRICAL SMOKE emergency checklists.

Through intercom communication, the commander informed the cabin crew of the situation. The cabin crew informed the commander that they could sense a smell, but could not see any smoke.

At this time, there was no visible smoke in the cockpit.

Due to the perceived low intensity of the smell, the cabin crew decided not to put on their protective breathing equipment (smoke hood).

Within a few minutes, the aircraft landed on runway 30 and turned onto taxiway B in order to assess whether to evacuate the aircraft.

Since smoke was neither visible in the cockpit nor in the cabin, and the smell was only light in intensity, the commander decided to taxi the aircraft to the assigned parking stand and disembark the passengers by normal procedure through the aircraft entrance door.

The crew did not observe any ELEC SMOKE warning during the serious incident flight.

The serious incident occurred in daylight under instrument meteorological conditions (IMC).

Injuries to persons

Injuries	*Crew*	*Passengers*	*Others*
Fatal			
Serious			
None	4	26	

Damage to aircraft

None.

Meteorological information

Terminal Aerodrome Forecast (TAF) - EKCH

ekch 211103z 2112/2212 25012kt 5000 -radz bkn008 tempo 2112/2118 3000 br bkn002 becmg 2118/2121 08012kt tempo 2118/2120 1200 br bkn002 tempo 2120/2124 sct008 bkn015 becmg 2200/2203 bkn015=

Aviation Routine Weather Report (METAR) - EKCH

ekch 211550z 29010kt 3000 -ra few006 bkn008 09/08 q1019 nosig=
ekch 211520z 28011kt 6000 bkn009 09/07 q1018 tempo 3000 -ra=

Presence of fire

Subsequent inspection of the aircraft revealed no traces of a fire having occurred.

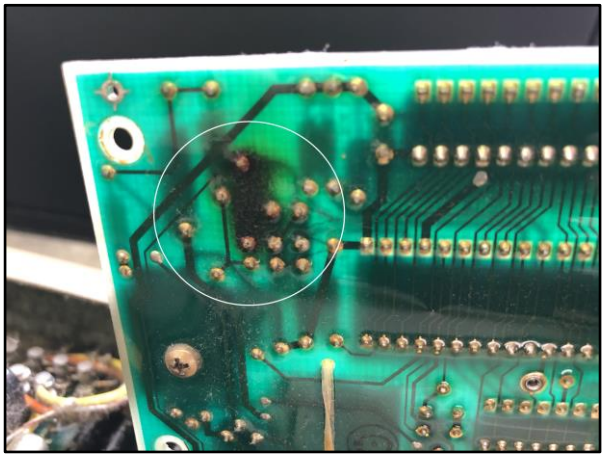
AIB safety investigation

Technical inspection:

The cockpit floor was removed and the area below was inspected. There were no indications of short circuits or a fire having taken place in the area.

Inspections in the area forward of the rudder pedals, identified a small trace of electrical burnt smell from the R/H windshield heat controller. Initial visual inspection indicated, that a possible overheating of electrical components within the R/H windshield heating control box could be the source of the smell/smoke.

Front side



Back side indication of possible overheat damage to component/welding

The control box was sent to an approved repair shop for inspection. The inspection stated the condition of the control box as “Dirty”. A subsequent bench test of the control box revealed *No fault found*.

Scheduled maintenance:

Approximately 2 hours prior to the flight, a line/weekly check was performed.

One quart of oil was added/uplifted to each engine.

The engine oil consumption log did not indicate any unusual oil consumption.

Aircraft return to service:

Following the replacement of the above-mentioned component and a test flight, the operator returned the aircraft to service on 23-2-2019.

The AIB requested a status of the subsequent 150 flights. During these flights, there were no observations of neither any unusual smell nor any smoke in the aircraft.

ANALYSIS

It has not been possible for the AIB to identify definitively the source of the perceived smoke or smell in the aircraft/cockpit.

The oil consumption log did not indicate any unusual oil consumption of either engine, but it is possible, following the oil refill that a small amount of excess or spilled engine oil produced the perceived smoke or smell vented through the air conditioning system.

Dirt in electrical components has previously produced smell and/or smoke when subjected to electrical power. The shop inspection of the R/H windshield heat controller stated presence of *dirt*, but the subsequent test did not produce any smoke or smell.

If *dirt* from the controller produced smoke, the amount was insufficient to trigger the ELEC SMOKE warning.

Given the subsequent 150 flights were uneventful, the AIB decided to close the safety investigation as no further evidence of smoke or smell appeared.