

3/28/2013

FOR YOUR INFORMATION

2014-13/1-1

1134137

To: Airbus Industries

Info: FAA (AVP-1, AVP-200, AFS-300, AFS-230, AFS-200, ANM-100, SEA-AEG, AQS-230),
A4A, ALPA, AMFA, APA, ASAP, ATSG, CAPA, IAM, IATA, ICASS, IFALPA, IPA, PAMA,
TWU, USAPA

From: Linda J. Connell, Director
NASA Aviation Safety Reporting System

Re: A300 Electrical Failure

We recently received an ASRS report describing a safety concern which may involve your area of operational responsibility. We do not have sufficient details to assess either the factual accuracy or possible gravity of the report. It is our policy to relay the reported information to the appropriate authority for evaluation and any necessary follow-up. We feel you should be aware of the enclosed deidentified report.

To properly assess the usefulness of our alert message service, we would appreciate it if you would take the time to give us your feedback on the value of the information that we have provided. Please contact Dennis Doyle at (408) 541-2831 or email at dennis.j.doyle@nasa.gov



Aviation Safety Reporting System
P.O. Box 189 | Moffett Field, CA | 94035-0189



ACN: 1134137

Time

Date: 201312

Local Time Of Day: 0601-1200

Place

Locale Reference.Airport: ZZZZ.Airport

State Reference: FO

Environment

Flight Conditions: VMC

Aircraft 1

ATC / Advisory.TRACON: ZZZZ

Make Model Name: A300

Component 1

Aircraft Component: AC Generation

Component 2

Aircraft Component: Electrical Distribution

Component 3

Aircraft Component: AC Generation Indicating and Warning System

Person 1

Function.Flight Crew: Captain

Function.Flight Crew: Pilot Not Flying

ASRS Report Number: 1134137

Person 2

Function.Flight Crew: First Officer

Function.Flight Crew: Pilot Flying

ASRS Report Number: 1134139

Events

Anomaly.Aircraft Equipment Problem: Critical

Anomaly.Flight Deck / Cabin / Aircraft Event: Smoke / Fire / Fumes / Odor

Anomaly.Deviation - Procedural: Published Material / Policy

Detector.Person: Flight Crew

Result.General: Flight Cancelled / Delayed

Result.General: Maintenance Action

Result.Aircraft: Aircraft Damaged

Narrative 1

During descent and within approximately 20 miles of touchdown at ZZZZ Rwy 06, The aircraft Continuous Repetitive Chime (CRC) activated accompanied by a red ECAM "AVIONICS SMOKE" message. The First Officer (F/O) continued to fly the aircraft while I read the ECAM procedure. We then transferred aircraft control to me while the First Officer performed the red ECAM instruction, which was to operate the Sniffer Fan to confirm the presence of smoke. The First Officer was unable to confirm the presence of smoke, and therefore, In Accordance With (IAW) ECAM instructions, we did not don our oxygen masks or continue to the procedure, "AVIONICS SMOKE" in the QRH.

At the time of occurrence, we had the airport in sight and felt reasonably sure that the warning had been caused by something other than an actual smoke condition in the Avionics Compartment (i.e. water). When time permitted I reviewed the QRH procedure, but we concentrated our primary attention on landing the aircraft in an expeditious manner. At no time during the approach or prior to landing did we experience any indication of any aircraft systems malfunction other than the red "AVIONICS SMOKE" indication on the Overhead Panel which remained on until after the aircraft blocked in. However, upon touchdown, we heard a sound in the cockpit similar to the sound of the electrical system when transferring aircraft electrical power from one generator to another. After setting the brakes in the parking spot, I shut down the # 1 Engine and all normal electrical power immediately failed, accompanied by numerous ECAM warnings and the E/E compartment "low flow" warning horn. We were unable to get External Power (EXT PWR) to engage and power the aircraft, and after starting the APU, found that it's generator would not power the aircraft either. At that point we shut down the # 2 Engine and performed an Engine Shutdown Check.

I believe that this event was a direct result of the presence of water in the Avionics Compartment, caused by melting snow which had not been sufficiently cleaned off the tops of the [cargo] cans loaded on the aircraft in ZZZ. After block-in, it was reported to me by Ramp personnel that during taxi-in the aircraft had large quantities of water pouring from every drain hole on the bottom of the fuselage. It was also reported that the aircraft Beacon lights were not operating (even though the switch was 'On'). I now believe the sound we heard at touchdown was the sound of the # 1 Generator taking over for the # 2 Generator as it failed. Therefore, when I shut down the # 1 Engine, no aircraft generators were operating.

Subsequent inspection by Maintenance found the GEN # 1, GEN # 2, and APU GEN Generator Control Units damaged by water, and all had to be replaced. Maintenance also had to replace two separate smoke warning detectors. Due to this information and the fact that that # 2 Generator failed upon touchdown, the First Officer and I now feel that we were probably within minutes of a real inflight emergency, i.e. complete loss of all normal electrical power. In conclusion, I believe this entire incident, and the damage and service delays caused, could have been avoided if the ZZZ Loading crew had simply made sure ALL the cans were completely clean of any snow prior to loading them on the aircraft. Prior to loading in ZZZ, I had personally spoken to no less than four members of the ZZZ Loading crew (including one individual who identified themselves as being one of the people "in charge,") and requested that they be sure that all snow was cleaned off the [cargo] cans prior to loading. It was indicated to me at the time that my request would be complied with. The subsequent event at indicates otherwise. [Recommend] putting winter procedures in place at all ramps to ensure that no can is loaded on an aircraft if it has ANY snow on it.

Narrative 2

Avionics Smoke alert on Overhead Panel and on ECAM. No smoke detected or confirmed using QRH procedures. Normal approach and landing. On block-in, when Number One engine was shut down, we lost all power. APU was started but didn't pick up the load. External Power would not pick up the load. Ramp personnel reported water streaming out of every port on the belly of the plane. Maintenance reported that the # 1 and # 2 Generator Control Units (GCU's) were shorted, as well as the APU GCU. Avionics Compartment smoke detectors were shorted as well. Maintenance said there was water inside the Avionics Compartment.

[Recommend] better snow removal from the top of the cans when loading the plane. The Captain got out of his chair on preflight four different times and specifically asked four different people to ensure that the snow was removed before loading them on to the airplane. Perhaps in addition to sweeping the snow off the tops, a heavy duty squeegee would help. Maybe assign a monitor with no other responsibilities when these severe weather events occur.

Callback 2

Reporter stated they were originally delayed several hours due to the heavy snowfall and large payload. Their first indication that something wasn't right was just before landing when the

Continuous Repetitive Chime (CRC) came on. He transferred control to the Captain while he performed a Sniffer Test. When he put the Sniffer fan on, there was not even a hint of smoke or smell detected by the Sniffer even though the Avionic's compartment Smoke alert appeared on the overhead panel and on the ECAM. No Circuit Breakers popped, no other alerts or warning; just a distinctive sound upon landing, similar to when Ground Electrical Power is switched over to Aircraft power, but no other indication.

Reporter stated after they arrived at the unloading area, their line mechanics reported a lot of water was noted in the cargo belly and Avionic's Compartment. But, there were no other Alerts or ECAM messages indicating that a complete loss of Generator Control Units (GCU) # 1 and # 2 including the APU GCU had occurred. The shorting out of the two smoke detectors, which he believes are in the cargo pit ceiling, was also disturbing because that would indicate how much snow was on top of the cargo cans that came in contact with the detectors and probably shorted them out.

Synopsis

A Captain and First Officer report about snow melting from the top of freight cans loaded in the Forward Cargo pit on an A300 aircraft contributing to excessive water accumulation flowing forward into the Avionic's Compartment. A red ECAM "AVIONICS SMOKE" message appeared prior to landing. The loss of # 1 and # 2 Generator Control Units (GCUs), including the APU GCU, occurred after landing without any associated Alerts or ECAM messages.