

6/30/2010

**FOR YOUR INFORMATION**

2010-93/3-24

878807

To: Embraer-Empressa Brasileira Aeronautic S/A

Info: FAA (AFS-200, AFS-230, AFS-300, ANM-100, SEA-AEG, ASA-100), AASC, AFA, ALPA, IFALPA, AMFA, APA, APFA, ASAP, ATA, IATA, CAPA, IAM, ICASS, IPA, NTSB, PAMA, RAA, TWU, USAPA

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

Re: EMB ERJ 190/195 ER&LR Fume and Odor Anomaly

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 Gary Brauch at (408) 541-2800 or email at [gary.j.brauch@nasa.gov](mailto:gary.j.brauch@nasa.gov).



Aviation Safety Reporting System  
385 Moffet Park Dr · Suite 200 · Sunnyvale · CA · 94089



**ACN: 878807**

**Time**

Date: 201003

Local Time Of Day: 0601-1200

**Place**

Locale Reference.Airport: ZZZ.Airport

State Reference: US

Altitude.AGL.Single Value: 0

**Environment**

**Aircraft 1**

ATC / Advisory.Ground: ZZZ

Make Model Name: EMB ERJ 190/195 ER&LR

**Person 1**

Function.Flight Crew: First Officer

Function.Flight Crew: Pilot Not Flying

ASRS Report Number: 878807

**Events**

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

Detector.Person: Flight Crew

Result.General: Maintenance Action

**Narrative 1**

I have flown the EMB-170/175 for over 2,000 hours and rarely experienced smelling, exhaust like fumes. The EMB-190, however, has a more noticeable smell of burnt oil, or exhaust fumes. We began noticing it during taxi on our 3rd or 4th leg of a 6 leg day when the APU and left engine were running during prolonged single engine taxi. I suspect it is a ventilation problem, allowing either burnt or burning oil fumes or engine exhaust to enter into the cockpit/passenger cabin ventilation system. At first we thought it was jet exhaust from the plane in front of us, so we tried to keep at least 35 feet away, but it did help because we began to smell it at the gate after APU start then it went away until the left engine started, and we would get a large blast of the fumes. The weird thing about it is that was not a very noticeable smell, until the second to last leg. It was really bad on the 5th leg, and the crew began to notice symptoms that we all shared and did not have on prior days of the trip. I experienced headaches, my eyes were red and burning, and at least my nose was unusually dryer than normal. I was tasting blood in the back of my throat after the 5th leg was completed. The symptoms lasted for 2 days. I have smelled this before on other 190's but it was temporary and only lasted a few minutes after APU start. Physical alarm bells, plus the cabin crew alerted us to what they were feeling. We noticed our thought process was beginning to slow down and really hard to concentrate. We also noticed it was hard to concentrate on our task especially during high task loading. We kept catching each other making mistakes with MCDU usage that we did not make before especially on the shuttle flights where you notice anything out of routine. I have been on the airplane for 2 months, and I have experienced eye lid twitching, and hand shaking. Also I have experienced cramping in the frontal lobe region of the brain, as best as I can describe it that day and the day after. Maintenance is trying to find the cause of the problem. I recommend installing those stickers in the cockpit that turn color when chemical, carbon monoxide, etc. is detected, or have some type of portable air quality sensor in every cockpit to alert the flight crew of odorless, and identifiable odors before they become a health and safety hazard.

**Callback 1**

The reporter advised his experience on the 190 series is less extensive than with earlier models. He was unable to state whether the problem was unique to a single example or if he felt it was a fleet problem. He did state that the most egregious personal example was the multi leg flight sequence he discussed in the report narrative. He did not dismiss the possibility of fume ingestion from ground support equipment although he stressed the example in the report with the APU and an engine running. He advised he would make a conscientious attempt to monitor future flights on the fleet and would submit follow up reports if he then suspected the problem to be fleet wide rather than limited to a unique aircraft.

**Synopsis**

An E-190 First Officer reported that this model Embraer is uniquely susceptible to ingestion of exhaust fumes from the APU and/or its own turbine exhaust great enough to produce negative physiological symptoms among the flight crew. Reported symptoms included respiratory distress, loss of concentration and reduced mental acuity.