



April 7, 2010

Mr. Richard H. Anderson  
Chief Operating Officer  
Delta Air Lines, Inc.  
P.O. Box 20706  
Atlanta, GA 30320-6001

**Re: Prevention of Exposure to Toxic Oil Fumes on Delta Aircraft**

Dear Mr. Anderson:

I am writing to you on behalf of the 7,300 flight attendants in the service of Delta Air Lines and who are members of the Association of Flight Attendants-CWA, AFL-CIO (AFA). The AFA would like to be on record with respect to notifying you of an unacceptable number of reported chemical exposures in the cabins of the fleet formerly operated by Northwest Airlines and now by Delta. It is suspected that some of these incidents involve exposure to oil fumes that contain neurotoxic tricresylphosphates (TCPs) and a complex mixture of hydrocarbons. Oil fumes may also contain carbon monoxide.

There are documented incidents that have left a number of our members with chronic neurological and respiratory illnesses and, at times, have compromised the safety of flight due to their impairment. With such impairment, they may not be able to perform their primary safety duties. We do not know how many of Delta's passengers and pilots may have also been sickened by these exposures - but we would like to request that you address this problem as a matter of urgency.

Supply air for the cabin and flight deck is first compressed in either the aircraft engines or in an engine within the auxiliary power unit (APU). Sometimes - whether because of a leaking oil seal, an over-serviced engine, or oil spilled during maintenance - engine oil can contaminate the supply air, either in the compressor or in the air cycle machine. This has been documented both on the ground and in flight.

Because the compressed air becomes very hot before it is cooled, conditioned and routed to the flight deck and cabin, aircraft occupants are exposed to oil that has been heated to a high temperature, so the oil may be accompanied by carbon monoxide gas. At lower concentrations, passengers and crew may notice an unpleasant odor. At higher concentrations, they may also smell fumes and see haze, smoke, or mist in the cabin or flight deck.

The following events are representative of these problems and describe the subsequent impact on the crewmembers involved:

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**November 12, 2009 - Ship #3359 (A330-200):** Seven of the eight flight attendants found it necessary to be on oxygen during a portion of the flight from FRA-DTW. Their symptoms included: Severe onset of headache, blurred vision, nausea, fatigue, lethargy, chest pain, sore muscles, rash, loss of coordination and difficulty taking a full breath. They also reported a strong 'locker room' odor which is characteristic of engine oil fumes.

One of the Federal Air Marshals onboard observed a haze in the cabin and reported that he had difficulty concentrating. The flight attendants' symptoms persisted after the flight; and some of them remain ill. They received no explanation from the Company as to any mechanical failures or insecticide applications (for example) on the aircraft that day. Their associated workers' compensation claims were denied.

**December 13, 2009 - same aircraft involved:** During the flight from DTW-FRA, one of the flight attendants was again on oxygen; this time for 2.5 hours. She suffered from 'pins and needles', lightheadedness and tremors, and collapsed during in-flight duty free sales. Another of the flight attendants reported tremors during that flight. On the return flight three days later, the two flight attendants who had been ill deadheaded home, and upon arrival, were sent to the airport medical clinic for a rudimentary neurological assessment. Again, their symptoms were consistent with exposure to oil fumes, although (again) the crew received no information regarding what they had been exposed to. Additionally, their workers' compensation claims were denied, with inadequate medical care made available during the days that followed the exposure.

**February 19, 2010 - same aircraft involved:** During the flight from FRA-DTW, five of the eight flight attendants were again on oxygen for over an hour with similar symptoms as reported during the initial incident on this aircraft. The five affected flight attendants filed workers' compensation claims - all of which are pending. Disturbingly, no payroll or medical has been authorized.

**February 22, 2010 - same aircraft involved:** On the flight from DTW-FRA, three of the four flight attendants, as well as a passenger, reported symptoms and required oxygen. Many flight attendants fly the DTW-FRA-DTW trip regularly, so a number of them have been involved in more than one of these incidents.

Ship #3359 is not the only aircraft with recent documented air quality issues. The following have occurred as well:

**February 19, 2010 - Ship #3127 (A319):** Flight attendants and passengers smelled smoke on approach and an emergency was declared.

**January 19, 2010 - Ship #3355 (A330-200):** Three flight attendants reported nausea, shortness of breath and dizziness during the flight from NRT-SFO and had to take oxygen. A doctor onboard reported that he thought they had been "exposed to something."

**November 19, 2009 - Ship #9871 (DC9):** Flight attendants reported a burning smell in the cabin.

With regard to Ship #3359 and the AFA's request for specific maintenance records, Ms. Tricia Ahrenholz, IFS Safety, notified the AFA on March 1, 2010 that engineering found "no unusual activity in air conditioning/pressurization" and that maintenance had logged 'insecticide application' after the February 19th incident - not before. This is an insufficient response to a very troubling situation. The situation begs the questions: Were any of the oil or hydraulic fluid reservoirs over-serviced? Did any oil seals or bearings fail? Were insecticides applied prior to any of the other three documented events? Will Delta not share the requested mechanical records? Multiple crewmembers reported similar neurological, respiratory and cardiac symptoms on the same aircraft on more than one flight. Clearly, something has made them sick.

**Ship #3318 (A330-300):** Additionally, a rash of reports of crew illness on this ship has come to our attention. On November 14, 2008, one of our members noticed a strong odor while resting in the lower deck crew rest module. She fell asleep and the next thing she remembers is being revived with oxygen. Four of the eight flight attendants on that flight had to take oxygen as well and suffered raw throats, burning eyes and post-nasal drip.

Since that flight, one of the flight attendants has reported suffering from dizziness, constant headaches, tremors, loss of bladder control, joint pain, tingling and numbness of her feet and hands, confusion, memory problems, and fatigue. Of interest is the fact that the crew bunks on Ship #3318 were deemed 'inoperative' one week later. Also, four months later, Ship #3318 was taken out of service to investigate the cause of similar complaints from flight attendants in the lower deck crew rest module. In the fall of 2009, additional crew bunks on A330-200 aircraft were deemed 'inoperative.' The Company has not provided an explanation, although rumors include exposure to a combination of freshly-applied carpet glue and carbon monoxide.

**DC9 Aircraft:** Finally, we recently received a call from one of our members who reports years of exposure to oil odors and fumes on the DC9 aircraft. She has been off work for six months with chronic, disabling neurological symptoms that include; tremors, severe joint pain, chronic headaches, disorientation, and balance problems - all consistent with exposure to oil fumes. She considered the sooty, smelly, oil fumes to be a part of her work environment, and at the time, did not attribute her ill-health to the fumes. She was unaware that such exposure could cause these symptoms. It is noted that Northwest Airlines serviced its aircraft with BP2380 engine oil.

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We are uncertain if Delta has maintained that practice; but in addition to containing TCPs, the pentaerythritol (PE) base stock in BP2380 can react with TCPs at high temperatures to form trimethylolpropane phosphate (TMPP), an even more potent neurotoxin that has been associated with seizure-like activity. Interestingly, in 1989, U.S. Naval health researchers explicitly recommended that BP2380 (then Exxon 2380) not be used on the U.S. Naval fleet because of toxicity concerns. BP2380 is one of the only commercially available aviation engine oils with the PE base stock that can generate TMPP. If Delta is indeed using BP2380, we urge you to stop such use.

We do not know how many passengers may have experienced or reported illnesses related to chemical exposures on Delta's fleet but we are certain that passengers are not informed of toxic exposures and are not provided with information on the associated ill health effects. For some people exposed to oil fumes, the neurological symptoms can be long-term or even permanent, including tremors, balance problems, memory deficits and disabling fatigue.

Over the past year, passengers at USAirways and Southwest Airlines have made the news regarding their lawsuit against the airlines for exposure to fumes in-flight that left them with neurological symptoms. Similarly, affected flight attendants at American Airlines and USAirways have sued aircraft manufacturers. Slowly, media stories and lawsuits are raising awareness, particularly with the flying public.

In conclusion, it is vital that Delta Air Lines more thoroughly investigate, address and prevent these types of chemical exposures. It is unacceptable to expose crewmembers and passengers to toxins - and then deny associated workers' compensation claims and keep passengers in the dark. In consideration of what has been detailed here, the AFA requests the following:

- Continue to investigate the source of the complaints regarding the lower deck crew rest modules of the A330-300 fleet; and honor the associated workers' compensation claims.
- Conduct a formal investigation into the oil fume exposures including, but not limited to, the A330 and DC9 fleets. We request that you define and remedy the sources of these fumes; whether it be oil seals that require replacement or servicing either more frequently (at fixed intervals) or to a higher standard, incompatibility of the oil seals, a given engine oil or something else.
- Recommend the development and implementation of procedures to clean oil contaminated ducting after a leak has been identified, instead of just taking the source of the leak off line and continuing to supply air to the cabin and flight deck through contaminated ducts.

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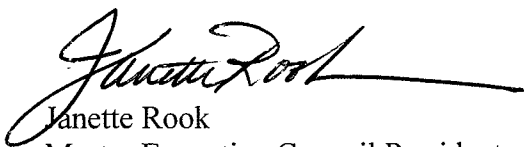
- Discontinue servicing any aircraft with BP2380 engine oil and (instead) consider a lesser toxic aviation engine oil. Such oil has been developed by a French oil company (NYCO), who has recently filed for a patent application.
- Bleed air should be filtered for particles, gases and vapors. It should also be monitored for oil fumes with flight deck indication before it is supplied to passengers and crew.
- Finally, ensure protocols are in place to provide any/all affected crewmembers with prompt, appropriate medical attention and lost wages until they are well enough to resume their in-flight safety responsibilities.

The urgency of our concerns cannot be overstated. You have only to look to the U.S. Senate, which just passed legislation calling for the Federal Aviation Administration to conduct a study of air quality in the cabins of this nation's commercial aircraft. The FAA has been called upon to investigate and determine the requirements for bleed air contaminant monitoring and solutions to prevent bleed air contamination. As an amendment to the FAA Air Transportation Modernization & Safety Improvement Act, the measure will ensure that the FAA has the information it needs to protect the public from harmful toxins.

It is our hope that Delta Air Lines will support such legislation and promote the changes we have suggested as soon as practicable. This would be an important and welcome first step in protecting the health and safety of our valued customers, and our professional flight attendant workforce who is charged with tremendous safety and security responsibilities each and every day.

Thank you for your attention to this urgent matter. On behalf of the 7,300 members of the Association of Flight Attendants-CWA at Delta Air Lines, we await your response.

Sincerely,



Janette Rook  
Master Executive Council President  
Association of Flight Attendants-CWA, AFL-CIO

Cc: Ken Hylander, Sr. Vice President, Corporate Safety  
Joanne D. Smith, Sr. Vice President, In-Flight Service  
Britt Reller, IFS Regional Director  
Chris Witkowski, AFA Director, Air Safety, Health & Security Department  
Jeanne Elliott, AFA NWA MEC Chair, Air Safety, Health and Security