Cabin health and environment: Investigation into chemicals in uniforms & lessons learned

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In the beginning...new uniforms

- In late 2010/early 2011, Alaska Airlines started to distribute new “TwinHill” uniforms to its 2,800 flight attendants, requiring everyone to report for duty in the new uniforms by Feb. 23, 2011 (Note: AFA-CWA members at Air Wisconsin, PSA, US Airways also wear TwinHill.)

- Around the same time, the airlines’ Customer Service Agents (CSA) received uniform pieces from the same vendor; some of the uniform pieces were the same as for the flight attendants, others different.
Symptom reports started shortly after new uniform “roll out”

- Late Feb 2011, flight attendants and CSAs started to report symptoms (largely dermal) that developed while/since wearing the new uniform, sx that in some cases required medical attention.

- Mid-April 2011, airline acknowledged to AFA-CWA that fraction of uniform fabric was contaminated - but safe, and fixed by dry-cleaning.
What about worker right-to-know?

- Airline employer did not formally notify either flight attendant or CSA work groups of chemical contamination in fabric until Apr 15, 2011 (described as “safe,” “non-toxic,” etc.).

- By then, flight attendants had been wearing the contaminated uniforms for 7-14 weeks; many reported unsatisfactory response from company (“It’s just you,” “You must be allergic to wool,” etc.)
Who is responsible?

• “Not I!” said airline/TwinHill, so sent reports to CPSC
• “Not I!” said CPSC, so agency sent reports to FAA.
• “Not I!” said FAA, so agency sent reports to OSHA.

“The FAA’s primary responsibilities are aviation safety, airspace efficiency, and capacity enhancements. The FAA has no jurisdiction on employee injury claims not directly related to flight operations.”

• “Try NIOSH first” said OSHA.
• So in Jan 2012, AFA requested a NIOSH HHE
What has fabric testing found?

- Tributyl phosphate (irritant, possible endocrine disruptor)
- Disperse orange 37/76 (allergen, restricted substance)
- 2-ethyl hexyl fumarate (allergen, irritant)
- Diisodecyl fumarate (irritant)
- Various heavy metals – lead, arsenic, cobalt, chromium, antimony
- Disperse dyes brown 1, red 17, and blue 102, all allergenic
In the meantime, NIOSH publishes HHE report: 2012-0075 (Oct, 2012)

- The flight attendants’ reported symptoms do “not appear to be unusual;” such “symptoms are common among flight attendants and the general population”

- With the exception of some “possible” allergic reactions, the flight attendants’ reported symptoms are more likely explained by “perception of hazards” and “heightened awareness.”
Status as of Feb. 2013

- 400+ sx reports from 2,800 members, ongoing; mostly dermal/respiratory; growing number reports of hair loss, under-functioning thyroid, fertility issues, bladder/kidney damage, etc.

- Some FA wearing own clothes to work but still break out in rashes/develop asthma-type sx when in cabin (likely contaminated jumpseat, colleagues wearing uniforms)

- Reports of sx amongst family members after FA washed uniform in home machine; concerns over whether safe to get/be pregnant/nursing
Current status (more)

• Class action lawsuit filed (Nov. 2012) calling for immediate and total recall of TwinHill uniforms

• Some members getting skin patch tested for compounds identified in uniforms

• Company agreed to procure new uniform, but won’t roll out until Oct 1, 2014; will allow individual members with doc note to wear alternative, but only piecemeal
Lessons learned - regulatory

- CPSC does not have jurisdiction
- FAA appears indifferent, lacks expertise
- Question of whether OSHA has jurisdiction
- No standards for chemicals in fabrics entering US marketplace (wild west), only guidelines (Am. Apparel & Footwear Assoc.: “We wear intelligence”), Nike, H&M, etc.
Lessons learned - basics

• Dry-cleaning, inserting lining into suiting pieces are not solutions

• Longer uniform in circulation, harder to recall

• Additional sources of contaminants in work environment – jumpseat straps, seats, coworkers (sharing coat closet, brushing against each other in close quarters, hugs)

• Instruct FA to remove uniforms before/upon getting home, wash/store separately
Lessons learned - chemistry

- Chemical content can vary by fabric type – test lining, pockets, interfacing, suiting, shirts, sweaters – so should be tested separately
  - E.g., dyes and metals concentrated in synthetic lining fabrics

- Don’t assume one mill/vendor for different garments with shared label – find out!
  - E.g., Multiple mills/vendors for suiting pieces
Lessons learned - chemistry

- Find out/define fabric additives
  - “The garments tested had no foreign chemicals in them. Note that all polyester and Teflon finish goods include a chemical, but it is not foreign to the product.” (TwinHill memo, Apr. 2011)

- Require that no flame retardants be added to fabrics. FRs increase toxicity of smoke in a fire. Wearing treated clothes = ongoing source of exposure. Studies show correlation between FR body burden and various health problems (fertility, neurodevelopment, etc.).
Lessons learned - chemistry

• Ensure that fabric testing is conducted with standardized test methods so data can be compared to published standards

• Specialized labs/clinics may offer to prepare “uniform extracts” for “catch all” patch testing

• Examples of clinics with demonstrated expertise: OHSU Contact Dermatitis Clinic, Allergy, Asthma & Immunology Clinic of Alaska
What to look for first

- Allergenic/carcinogenic dyes
- Formaldehyde
- Dimethyl fumarate
- Phthalates, fumarates
- Heavy metals

- Compare data to **Oeko-Tex Standard 100**: defines max. allowable levels for long list of chemicals in fabric; only one Oeko-Tex certified lab in US (Hohenstein Institute, NC)
Negotiating a new uniform?

- Compliance with Oeko-Tex 100 standard (widely used in EU)
- Define and enforce procedures to ensure ongoing quality control
- Avoid 100% synthetic garments (flammability concerns); wool-free option
- Establish user-friendly reporting system for members to document garment reactions
“It’s the only treatment option he has under his current health plan.”
Postscript – April 2013

As of May 2013, more than 650 Alaska Airlines flight attendants had documented symptoms with AFA that they/their doctors consider uniform related, of 2900 total flight attendants in the Alaska Airlines workforce (22%)
Questions, comments?

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