**THE CONTAMINATED CABIN AIR - KEY TIMELINE**

1950 – 2017

Here are some key events and milestones in the history of contaminated cabin air:

**1946**
- Formaldehyde as possible causative agent.

**1953**
- Synthetic lubricants developed.

**1954**
- Pyrolsed oil contains ingredients related to toxicity.

**1959**
- Active metabolites causing toxicity identified.

**1960s**
- Oil fumes seen as a nuisance, should be seen as flight safety workplace problem.

**1962**
- At temps >320°C oil breaks down into toxic and carcinogenic compounds.

**1965**
- Mobile oil/air system required to be storing clean oil.

**1967**
- Oil fumes reported to be causing civil litigation.

**1970s**
- Oil fumes reported to be causing flight safety issues.

**1980s**
- Oils being stressed to limits due to aero engines.

**1990s**
- Toxicity of oils raised with new or upgraded MSDS.

**2000s**
- FAA funded medical protocol for fume exposures.

**2010s**
- New medical test for TOCP exposure.

**2017**
- Cabin air contamination problems reduce.

---

**INDUSTRY ACTIONS:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2011</td>
<td>Cranfield monitoring study</td>
</tr>
<tr>
<td>2008-2012</td>
<td>Australian CASA EPAAQ</td>
</tr>
<tr>
<td>1999-2012</td>
<td>ASHRAE studies</td>
</tr>
<tr>
<td>2009-2012</td>
<td>EASA A-NPA</td>
</tr>
<tr>
<td>2012/2017</td>
<td>US Senate/Congress CAQ bills</td>
</tr>
</tbody>
</table>

---

**Black - Acknowledgements**

**Green - Achievements/ Actions**

**Purple - Fact**

---

**www.susanmichaelis.com**

© 2017 Global Cabin Air Quality Executive