FIRE, SMOKE OR FUMES OCCURRENCES ON TRANSPORT AIRPLANES

R.G.W. CHERRY & ASSOCIATES LIMITED
Occurrences were classified as “Significant Events” if they resulted in, or it was likely that they resulted in, any of the following:

- Diversion
- Return to Departure Airport
- Rejected Take-off
- Emergency Evacuation
- Depressurization
- Fuel Dump
- In-Flight Thrust Engine Shutdown (includes shutdown during take-off or landing)
- Emergency Descent
- Emergency Declared
- Emergency Services Deployed
- Ground Damage (other than Minor Damage)
- Airplane Damage (Minor, Substantial or Destroyed)
- Overweight Landing
Study includes data for 10 years (2002-2011)

Of the 14,533 occurrences that were considered valid in the study approximately 38% were considered Significant Events.
Significant Events - Total Number per Year
Significant Events - Rate of Occurrence per Million flights
- Occupied Areas - Annual Number of All FSF Events in Passenger Airplanes
Occupied Areas - Annual Number of Significant FSF Events in – Passenger Airplanes
NUMBER OF OCCURRENCES - ALL EVENTS

Occupied Areas - Annual Number of All FSF Events in – Freighter Airplanes
Occupied Areas - Annual Number of Significant FSF Events in – Freighter Airplanes
– Occupied Areas - Rate of Occurrence of All FSF Events – Passenger Airplanes
RATE OF OCCURRENCE - SIGNIFICANT EVENTS

- ALL PASSENGER AIRPLANES
- REGIONAL
- NARROW
- WIDE

YEAR 1727/Analysis New/occupied Areas/ALL PASSENGERS

- Occupied Areas - Rate of Occurrence of Significant FSF Events – Passenger Airplanes
- Occupied Areas - Sources of FSF in Regional Passenger Airplanes
– Occupied Areas - Sources of FSF in Narrow Body Passenger Airplanes
Occupied Areas - Sources of FSF in Wide Body Passenger Airplanes
Occupied Areas - Sources of FSF in Freighter Airplanes
FSF Events – by Location

Occupied Areas - Location of FSF in Regional Passenger Airplanes
Occupied Areas - Location of FSF in Narrow Body Passenger Airplanes
FSF Events – by Location

Occupied Areas - Location of FSF in Wide Body Passenger Airplanes

- Passenger Cabin and Flight Deck: 21%
- Flight Deck: 22%
- Passenger Cabin: 57%

ALL EVENTS
– Lavatory - Airplane Detector Events per Year for Passenger Airplanes
**Lavatory - Proportion of “False Warnings” resulting in Unscheduled Landings or Rejected Take-offs**

<table>
<thead>
<tr>
<th></th>
<th>All “False Warning” Detector Events</th>
<th>Number of Unscheduled Landings</th>
<th>Unscheduled Landing Proportion</th>
<th>Number of Rejected Take-offs</th>
<th>Rejected Take-off Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Passenger</td>
<td>431</td>
<td>112</td>
<td>26%</td>
<td>19</td>
<td>4%</td>
</tr>
<tr>
<td>Narrow Passenger</td>
<td>59</td>
<td>8</td>
<td>14%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Wide Passenger</td>
<td>40</td>
<td>1</td>
<td>3%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>All Passengers</td>
<td>530</td>
<td>121</td>
<td>23%</td>
<td>19</td>
<td>3.6%</td>
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<tr>
<td>All Freighters</td>
<td>4</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Crew Rest Areas - Wide Body Airplane Detector Events per Year
Crew Rest Areas - Identified Causes of All Detector Events
Ongoing work:

Cost impact
Additional years of data added to Data Base

Report to be published and Data Base released in Fall