Addressing Cabin Safety Threats

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Addressing Cabin Safety Threats – Risk Exposure

- Working Environment
- Service Expectations
- External Threats
- Equipment / Hardware Hazards
- Human skills/resource constraints
Risk Mitigation - Addressing Cabin Safety Threats

• Risk based approach
• Data driven – Reporting culture
• Timely action of fixes
• Change management
• Safety information sharing / awareness
Dragonair Route Network:
Shortest Flight Time; 1:00
Longest Flight Time; 5:40
Daily Responsibilities for Cabin Crew – Management of the 3 S’s

- Safety
- Security
- Service
And their Priorities?

Safety

Service

Security
The likelihood of having left open cabin doors by ramp vehicles is ‘POSSIBLE’, particularly at outstations.

The severity of injury to crew is ‘MAJOR’.

The risk level associated with this hazard is ‘HIGH’. (significant risks that require immediate attention)
Cabin Safety Report Data / Statistics

Cabin safety trend 2012 Vs 2013

<table>
<thead>
<tr>
<th>Per 1000 sectors rate</th>
<th>Breach in safety &amp; security procedures</th>
<th>Unruly pax</th>
<th>Crew injury</th>
<th>Pax illness</th>
<th>Others</th>
<th>Pax injury</th>
<th>Smoking incident</th>
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(Cabins 2012) (Jan - May) 2012
(Cabins 2013) (Jan - May) 2013
CSQ Trend Analysis

25 95
20 60
15 57 44 56
10 28 29 54
5 45 38 45
0 37

DRAGONAIR
Crew Size and Demographics

In Jan 2012, Cabin Crew: 1534

In May 2013, Cabin Crew: 1750

From Jan 2012 to May 2013, crew increase:

<table>
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<tr>
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<th>A320/321</th>
<th>A330</th>
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<td>New cabin crew</td>
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<td>340</td>
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<td>Future expansion</td>
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<td>350+</td>
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Cabin Safety Awareness - Enhance Communication

Baggage Handling Roadshow
Lithium Batteries – Cabin Threat

**Mitigation:** Cargo Safety Review Group initiated to review carriage of Dangerous Goods, with particular focus on Lithium Batteries transportation

**Major milestones so far:**
- Embargo on Lithium-metal batteries shipment on PAX a/c
- Loading segregation between Lithium-Batteries and DG
- Lithium-Batteries info on NOTOC
Dealing with Lithium Battery Fires in Cabin

Solution:

Product “Firebane”
• Class D rated extinguishing agent,
• Designed for molten metal fires,
• Safe for people,
• A GREEN extinguishing agent.

Firebane can be used to douse the burnt P.E.D containing lithium battery to prevent re-ignition.

Firebane are onboard all KA aircraft.
Dealing with Lithium Battery Fires in Cabin

**FireSock**
- Designed to contain fire in single or multiple cell lithium battery packs during a lithium battery fire.

**FireSock** kit includes:
- A pair of heat resistance gloves,
- A re-sealable storage tube,
- A re-sealable FireSock bag to contain the burnt P.E.D. after an incident.
Overhead Locker Handling / Access

Hazard:
- Cabin crew injuries while stepping on the side of pax’s seat without footstep/non-skid pad.
To Assist with Overhead Locker Security Check

Hazard:
• Cabin crew injuries during “security check”/“after landing check” when they climb up pax seat to look for “suspicious items”/“left behind items” in the overhead lockers.
Weather System and Thunderstorm Activities

Turbulence Hot Spots – Historical Data from 2011
Inter-Tropical Convergence Zone (ITCZ – Summer)

Inter-Tropical Convergence Zone (ITCZ – Winter)
Weather System and Thunderstorm Activities

Daily Count of Events in HKG (Aug to Sep 2013)

- Tropical cyclone warning: 7 (AUG) + 5 (SEP)
- Strong monsoon signals: 2 (AUG) + 2 (SEP)
- Rainstorm warnings: 2 (AUG) + 1 (SEP)
- Thunderstorm warnings: 32 (AUG) + 9 (SEP)
Flight Crew extensive use of the Onboard Weather Radar

- The flight crew community receive and tested on the use of the onboard weather radar annually
- Declare “Pan” for weather avoidance in congested routes, mainly in the PRC
- Employ new technology when available
Addressing the Threat of Turbulence Injuries

Procedures for cabin communications during weather avoidance after this event:

✓ Cabin crew must be briefed prior to the flight of any forecast or anticipated turbulence en-route. Use time markers rather than location.

✓ En-route if penetrating an area of weather is unavoidable, provide as much notice as possible to the cabin.

✓ If weather/turbulence is anticipated at descent, provide cabin crew with sufficient advance notice to prepare the cabin instead of the standard cabin preparation time markers.

✓ If necessary delay the descent P.A until it is safe to do so.
Unsecured Doors – A Death Trap!

• For this operator it was normal procedure for the cabin crew to close an open cabin door from inside without any platform connection outside.

• The ramp vehicle did not wait till the aft left door was closed before retracting from the door.
The mix of cabin crew and ground engineers entering the flight deck is perhaps unavoidable during line
operations.

A number of incidents where cabin crew have fallen into the open void while carrying pre-flight duties in the
cockpit.

Threat Mitigation :

• Procedural; suspend pre-flight C/C duties and lock the Flight deck door (to be kept locked until hatch is closed)

• Technical (long term mitigation); change the hatch hinge orientation to be side opening ( adopted on new
production A350)
Doors – Oops, I didn’t Know it was Armed!

Cleaning supervisor opened the R1 door from inside while the door was armed which resulted in the inflation of evacuation slide.
Lavatory Doors : Bi-Folding Type!

- The bi-folding doors close automatically and fold inside the lav. Compartment
- “Push” stickers are close to the fold-in line of the door
- Quick automatic release & closing mechanism
- The doors are attached with a gas spring to keep the door always in a closed condition plus there is no adjustment
- Injuries are often minor and not reported;
  - Hand/ finger injury while pushing the door open due to stiffness of the door.
  - Hand/ finger trapped at the fold-in line while pushing-in the door for entry.
  - Hand/ finger trapped during the quick automatic closing action.
Bi-Folding Doors!

Immediate term mitigation:
- Cabin crew are to tech-log lavatory doors that has caused injury for engineering follow-up.
- Routine checks on the opening & closing mechanism of all bi-folding doors on whole fleet.

Long term mitigation:
- Engineering to ensure the bi-folding lavatory door mechanism on new aircraft can be adjusted.
- Engineering to review lavatory door type/design with new cabin retrofit.
Lavatory Doors : Single Blade Type

- The larger lavatory has a single blade door which does not close automatically.
- The opening action is outwards and in certain locations, into the aisle (causing injury to pax or crew)
- Requirement to have certain number of such doors for disable pax access

**Short term action:**
Engineering propose modification to reduce the opening speed and reduce the possibility of inadvertent opening of the existing doors, e.g, use of a damper

A warning sticker (inside) door to exercise caution when opening

**Long term solutions:**
Engineering to ensure future fleet specifications meet the requirement for the number of, new specification and location of handicap pax doors

Airbus/Cabin BFE supplier to redesign these doors from build
Doors : Where is the Toilet?

Description of event:

- At around 1200LT, Captain informed CP L4 door was not locked.

- CP went to check the door and saw the door control handle was lifted slightly up.

- CP put the handle down immediately to lock the door.

- None of the crew in EY had witnessed anyone attempting to lift the door handle as they were all busy for meal service.

- Aircraft was cruising at 31000 ft.
Safety over Service – Coping with Aircraft Design Anomalies

Drain Masts

Radio Altimeters
Safety over Service

• A technical solution is preferred to avoid the direct contamination of the RA’s from the galley drains

• In the absence of a technical solution, the pouring of certain liquids (grey water only) is prohibited
Alternative Design – B777!
Dealing with an real emergency - smoke in the Cabin

- White dense smoke with strong burning plastic smell emitted from mid cabin, spreading to fwd & aft cabin.
- Oxygen masks were deployed in the smoke-filled cabin to provide oxygen for passengers.
- P.A was made by cabin crew to instruct passengers how to activate oxygen and don mask as the oxygen masks were deploying in the cabin.
- Passengers put on the mask as instructed and cabin crews were checking that passengers had donned masks correctly.
- The majority of oxygen masks’ reservoir bag did not inflate, but with green indication and weak oxygen flow (This phenomenon was subsequently confirmed as normal by the Engineering Department).
- Smoke eventually dissipated during descent into PEK. It lasted approx. 10 minutes.
- Cabin was prepared for a normal landing following Captain’s PA prior to landing.
After Landing / Disembarkation Handling

- Initial “Mayday” call was downgraded to “Pan” call during the approach
- Emergency services (2 x fire engines + 2 x ambulances) met on arrival (requested by Captain)
- Normal disembarkation (stairs in L1 & L2) was carried out (Ground personnel were not present)
- Passenger buses did not arrive at the same time as the stairs
Consistent On Going Reduction in Cabin Safety Injuries

Lost Time Injury Frequency Rate

Average 2008: 94.44
Average 2009: 51.88
Average 2010: 68.18
Average 2011: 33.84
Average 2012: 26.72
Average 2013: 24.18

CSQ Trend Analysis

↓ 45%
↑ 31%
↓ 50%

Average 2008: 94.44
Average 2009: 51.88
Average 2010: 68.18
Average 2011: 33.84
Average 2012: 26.72
Average 2013: 24.18

2013 KPI target (LTIFR) per million hours worked

LTIFR Average 2008
LTIFR Average 2009
LTIFR Average 2010
LTIFR Average 2011
LTIFR Average 2012
Average 2013
Key to Success - Addressing Cabin Safety Threats

- Healthy Safety Reporting Culture
- Timely and Efficient reporting of Cabin Equipment Defects
- Regular Crew Engagement and Safety Information Sharing
- Regular Feedback (Safety Report Follow Up)
- Awareness, Awareness..., through Roadshows

Create a Safe, Pleasant and Healthy Work Environment
Thank You