

CABIN



## WASTE COMPARTMENT FIRE CONTAINMENT MOCS AND TEST HARMONIZATION

---

Scott Campbell  
Safran Group Technical Fellow  
Safran Cabin Inc

June 10, 2020  
IAMFTWF, Virtual Meeting



# Ground Rules for Webinars and Zoom Meetings

## Zoom meeting Ground Rules:

Everyone PLEASE go on mute

Use raised hand feature (under participants button) to ask a question

A panelist will call on participant to ask their question, as time permits

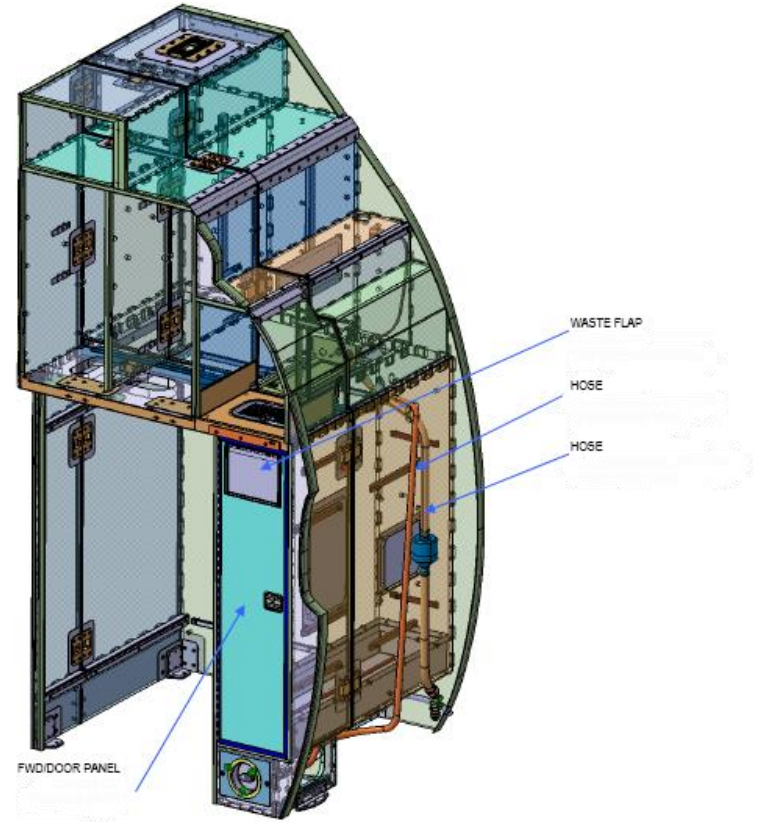
Once question has been answered, click raised hand to “un-raise”

# Waste Compartment Fire Containment

14 CFR 25.853(h)

All Waste Compartments, Meal Trolleys & Waste Trolleys must be substantiated by Test or Analysis.

Industry/Regulators lack harmonized published methods of compliance (MOCs) to substantiate by analysis.



# Waste Compartment Fire Containment

Where are we now?

The task group team reported out in March a proposal to update Chapter 10 of the Fire Test Handbook for fire containment testing (see March ppt)

We also began to focus and reviewed our 26 proposed substantiation MOCs for a future Policy Statement or AC.

**Then the Pandemic...**



# Waste Compartment Fire Containment

- 1/ Redline proposal on Chp 10 is still pending.
- 2/ Fleshing out similarity substantiation MOCs stalled.
- 3/ And now.....more interest in  
**TOUCHLESS WASTE FLAPS**



## Touchless Waste Flaps Discussion

Currently most lavatory cabins do not have touchless waste flaps.

Most germophobes (or health conscious folks like me) simply open the waste flap with the waste paper towel used to dry our hands, but how to certify an electronic touchless waste flap? Below are a number on risk considerations that Safran has developed with Airbus & EASA:

1/ Powered uncommanded opening during a fire event- Will the flap open during a fire event? Or sometime thereafter? Will heat or fire affect flap performance?

2/ What features of the electronic waste flap will ensure the flap does not open during a fire event?

3/ Unpowered condition is “closed” should power be lost.

## Touchless Waste Flaps Discussion

Below are a number of test considerations that Safran has developed with Airbus & EASA:

- 1/ Test with flap powered- demonstrate flap is functional before test. Flap shims should not be conductive- or may cause the flap to open...
- 2/ Video the test showing the flap.
- 3/ Uncommanded opening during the test is unacceptable.
- 4/ Validate the flap stays closed for up to 2 hours after passing the test (after temperature falls below 150 F).

# Waste Compartment Fire Containment- Similarity MOCs

Next Focus of the Task Group will be to revisit and flesh out Similarity MOCs. Several are already approved per FAA AC25-17A Other proposals have been organized as aspects related to FAA PS-ANM-25.853-01-R2. Others from test experience.

Fire Containment Methods of Compliance (MOCs & Design Requirements)

| ITEM # | MOC Type   | MOC Description   | Actions   | Comments   |
|--------|------------|---|---|--|
| 1      | Approved   | Greater compartment volume substantiates lesser volume. [FAA AC25-17A]  |   |  |
| 2      | Approved   | Greater air gap substantiates lesser air gap. [FAA AC25-17A]  |   |  |
| 3      | Approved   | Designs with a metal waste can: Testing without the waste can substantiates with waste can installed. [FAA AC25-17A, Appendix 8, par. 4.1a.]. An agreed upon corollary, testing a compartment with a non-metallic waste bin can substantiate a waste compartment with a metal waste bin (with the same or lesser volume). | Installers may add a metallic container to the compartment if the original design was tested without a container. Additionally, installers may substitute a metallic container, of equal or less volume, in a compartment if the original design was tested using a nonmetallic container- AA | Would also need to verify the fit of a replacement container would ensure trash can not fall between the container and compartment walls. Scott<br>Can we simplify to be a material substitution metal for non-metal container?- Jeff G. |
| 4      | PS Related | Thinner core panels substantiate thicker core panels (same materials) for the same application (sides ceilings, etc).   | Scott / Tom (Boeing)  |  |
| 5      | PS Related | Less skin plies substantiate more skin plies (same material) for the same application (sides, ceilings, etc)  | Scott / Tom (Boeing)  | Door panels are more critical than compartment panels for thickness, skin plies, etc.- Tom (Boeing)  |
| 6      | PS Related | Nomex and Kevlar core are interchangeable and can substantiate aluminum core.   |   |  |
| 7      | PS Related | Thinner aluminum skins substantiates thicker aluminum skins.  |   |  |
| 8      | PS Related | Waste door with edge cast can substantiate waste door with aluminum edge trim.  |   | non-metallic substantiates metallic feature.   |
| 9      | PS Related | How to substantiate a change in panel skin adhesive films? What about structural joint adhesives? (no failures noted through mortise and Tennon joints.)  |   |  |
| 10     | PS Related | All material substitutions related to fire containment must also pass a 45-degree test.   |   | Concur with the exception that there may be other considerations such as panel stiffness that also need to be taken into account. - Gulfstream   |



# Purpose of the Waste Compartment Fire Containment Task Group

Harmonize Test Aspects

Harmonize and publish industry and regulator accepted 25.853(h) Similarity requirements & MOCs for waste compartments and galley trolley carts.

Develop new MOCs as needed.

Always looking for more participation!





