

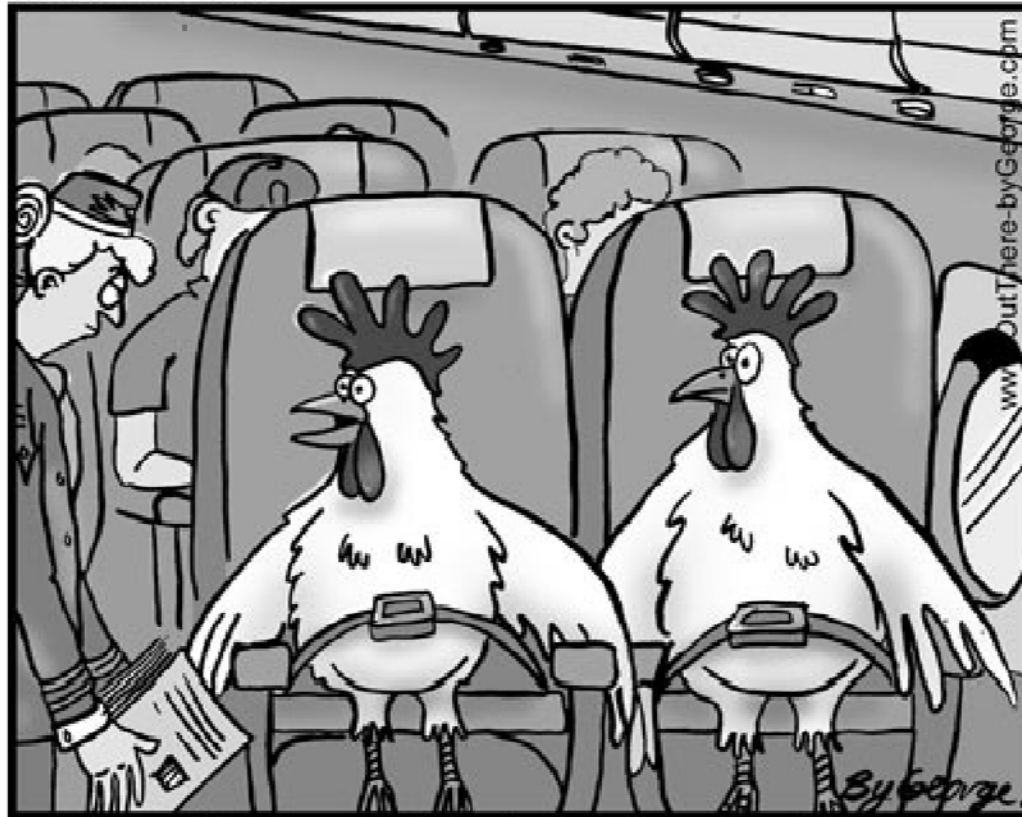
Cabin Safety seminar / Singapore 19-21 November 2013

Cabin Safety Certification

How an aircraft cabin is certified and what are the related safety aspects to take into account?

Presented by
Jean-Paul VIEU/ Cabin Operation Engineer

What does Cabin Safety mean?



"Can you run through the safety procedure again...this is our first time flying"

What does Cabin Safety mean?

Reduce fatalities and injuries resulting from an accident



Provide a safe environment IN and AROUND the aircraft



for crewmembers and passengers

Agenda

1

How do we Certify a Cabin?

- Type Certification
- Customized Cabin Certification

2

Specific Topics

- Minimum Required Cabin Crew / Rules & Airbus Policy
- Derating of Doors / Principles & Examples

Type Certification (TC)

The process demonstrating that the Aircraft design meets the Applicable Airworthiness Requirements



The Cabin is Highly Customized

Only standard Cabin parts are covered by the Type Certificate

Type Certification(TC)

Examples of Standard Cabin Parts covered by the TC



Door
Door lining,
Cabin crew seat



Evacuation Systems



Floor to floor: Floor,
dado, sidewall panels,
PSU, OHSC, Ceiling



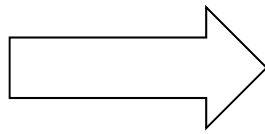
Cockpit door
module

For customized parts (seats, galleys,...), Standard Specifications are approved as part of TC

Type Certification (TC)

Emergency Evacuation Demonstration

Goal

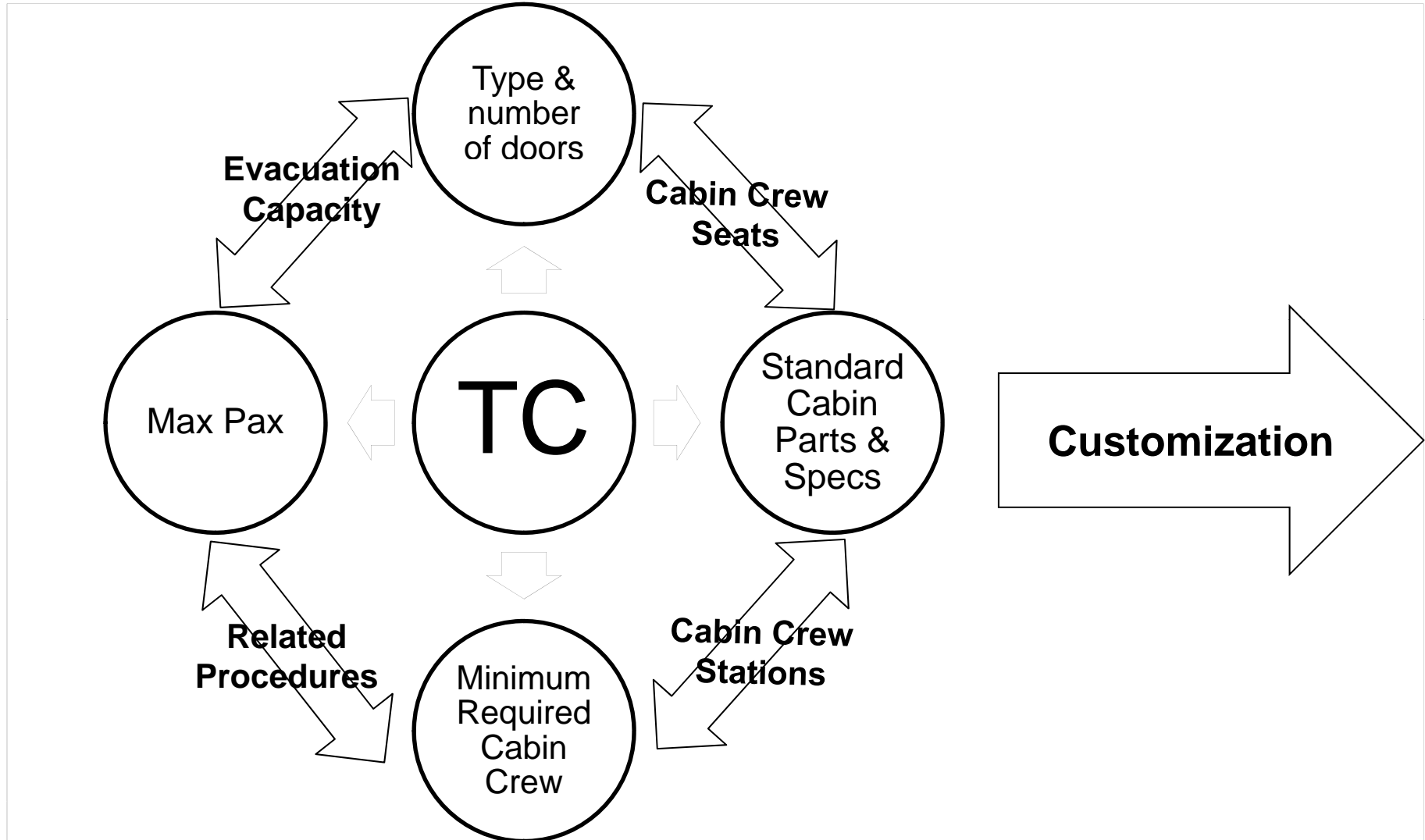


Emergency Evacuation Demonstration of the
Maximum Passenger Seating Capacity (MPSC) in
less than 90'' using half of the emergency exits



**Assessment of Evacuation
Means & Cabin Crew procedures**

How do we certify a cabin?



How do we certify a cabin?

Each Customized Cabin is Certified as a Modification to TC

TC

**Adapted
to Layout**



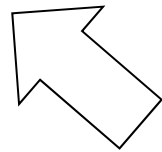
Requirements to be met in the cabin:

- Emergency Exits
- CC Seat location
- Standard Parts&Specs
- Passenger seat layout
- Direct View
- O2 masks
- Mini Required CC
- Emergency Equipment
- Evac Procedures

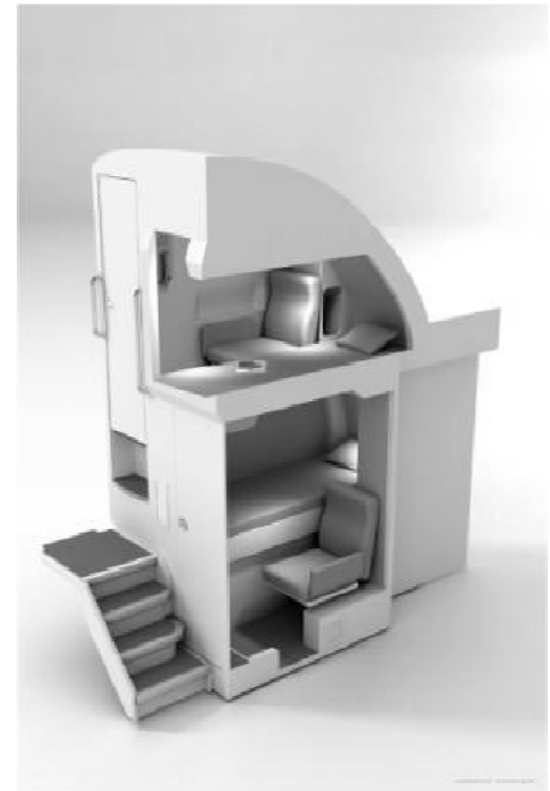
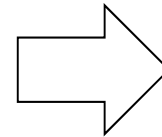
**Operational
Rules**

How do we certify a cabin?

Special compartments / cabin areas

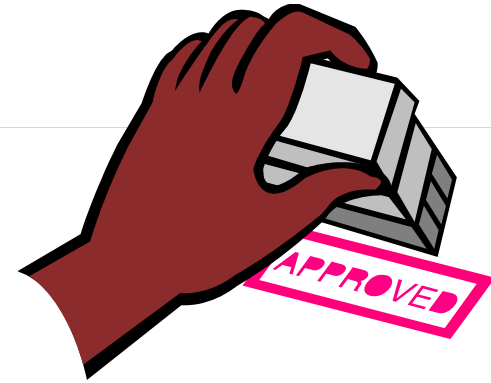


**Are Certified by
Special
Conditions**



How do we certify a cabin?

The customized cabin is certified once the Modification is Approved by EASA.



Mandatory prior to Airplane delivery



The CCOM conveys information to the Operator

Agenda

1

How do we Certify a Cabin?

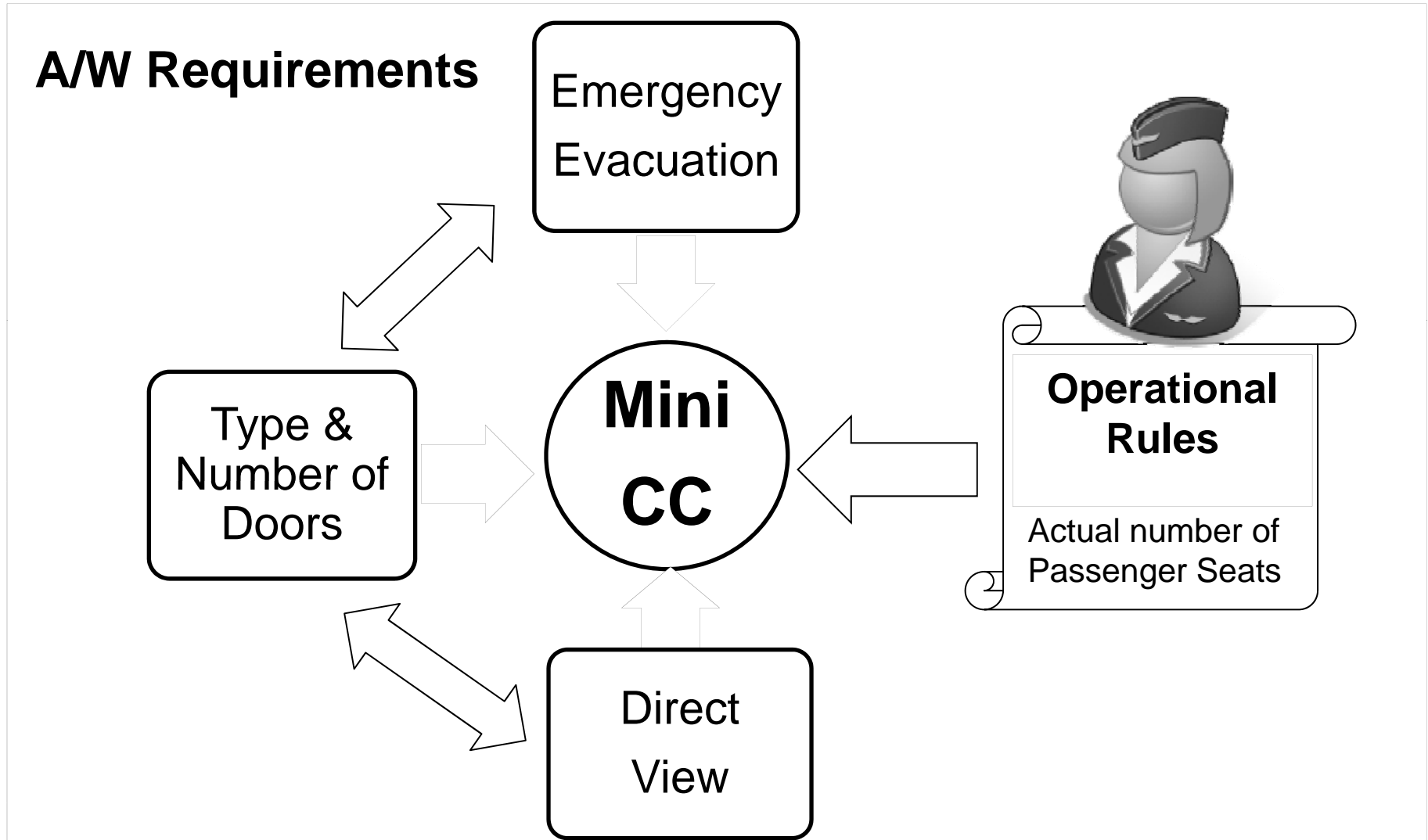
- Type Certification
- Customized Cabin Certification

2

Specific Topics

- Minimum Required Cabin Crew / Rules & Airbus Policy
- Derating of Doors / Principles & Examples

Specific Topics – Minimum Required Cabin Crew



Specific Topics – Minimum Required Cabin Crew

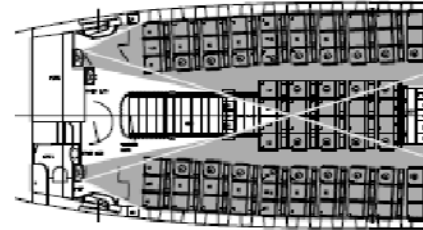
Airbus policy for Twin Aisle Airplanes:

- Not less than One CC per type A or I Exit



Reasons:

- **Emergency Evacuation Procedures**
 - Keep control of the evacuation and of the passenger dual flow
- **Operation of Exits**
 - Be at the door before the passengers
- **Direct View Requirements**
 - Full length of both main aisles



Airbus policy for Single Aisle Airplanes:

- Not less than One CC per pair of exits
- Study upon customers' request (A320: 150 seat → 3 CC)

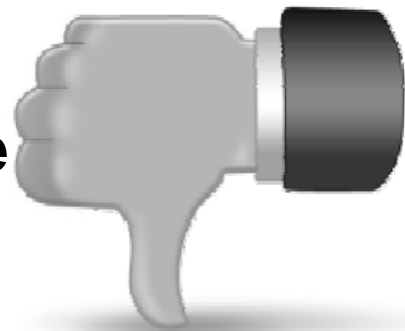
Specific Topics – Minimum Required Cabin Crew

Airbus policy for Twin Aisle Aircrafts: Evolution?

- Upon customer request
- New Cabin Modification necessary
- Highly layout dependant
- Series of tests required
- Dialogue with EASA necessary



So far EASA says NO in Principle



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Specific Topics

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Specific Topics – Derating of doors for cabin flexibility

Definition / Principles:



Unchanged:

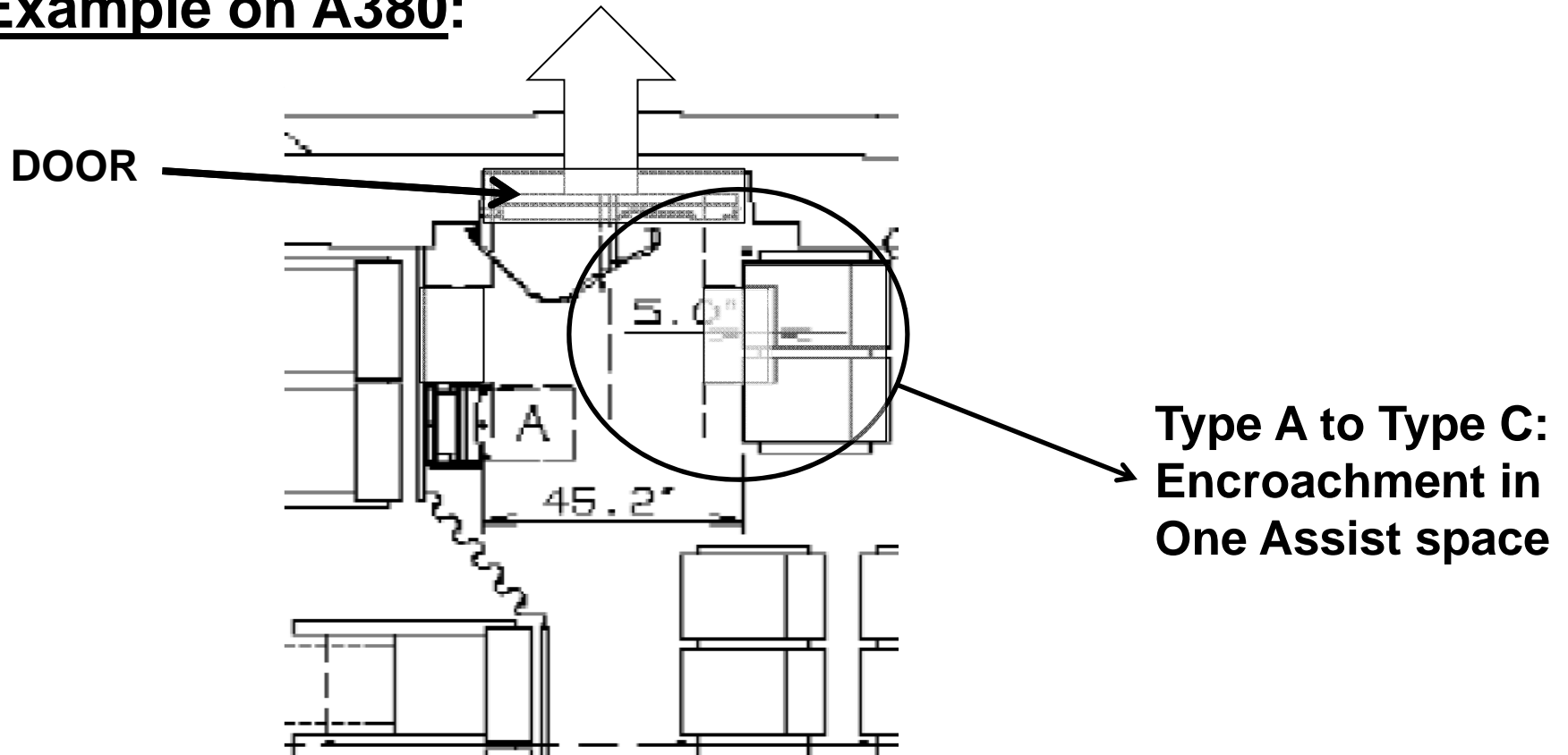
- Physical appearance
- Technical performance
- Associated evacuation system
- Identification means
- Operation process

Changed:

- Access to the exit
- Passageway width
- Assist spaces

Specific Topics – derating of doors

Example on A380:

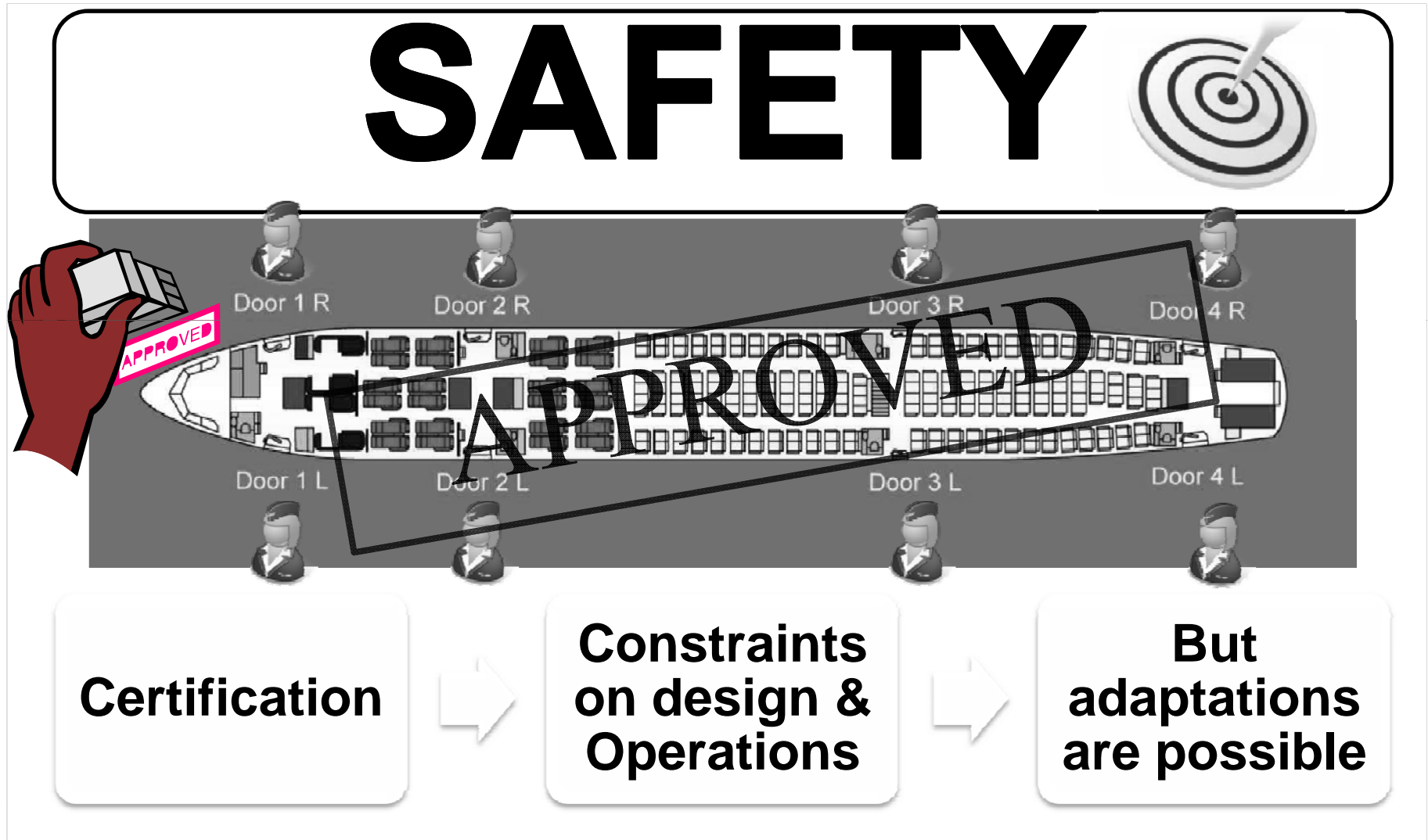


Specific Topics – derating of doors

Restrictions:

- **Seating capacity in the zone must be compatible with the derated exit type**
- **Only seats may encroach into the projected exit opening (no monuments)**
- **Seats may not breakover into the passage way**
- **Operating handle must be visible from the aisle**
- **Door operation should not be degraded**

Conclusion



Conclusion

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