

**Docket No. SA-522**

**Exhibit No. 7-Z**

**NATIONAL TRANSPORTATION SAFETY BOARD**

**Washington, D.C.**

Compliance with FAR/JAR 25.571

(6 Pages)

# **A300-600R**

## ***Compliance with JAR/FAR 25.571 'Damage tolerance and fatigue evaluation of structure'***

Damage tolerance has to be demonstrated to avoid catastrophic failure due to fatigue, corrosion or accidental damage.

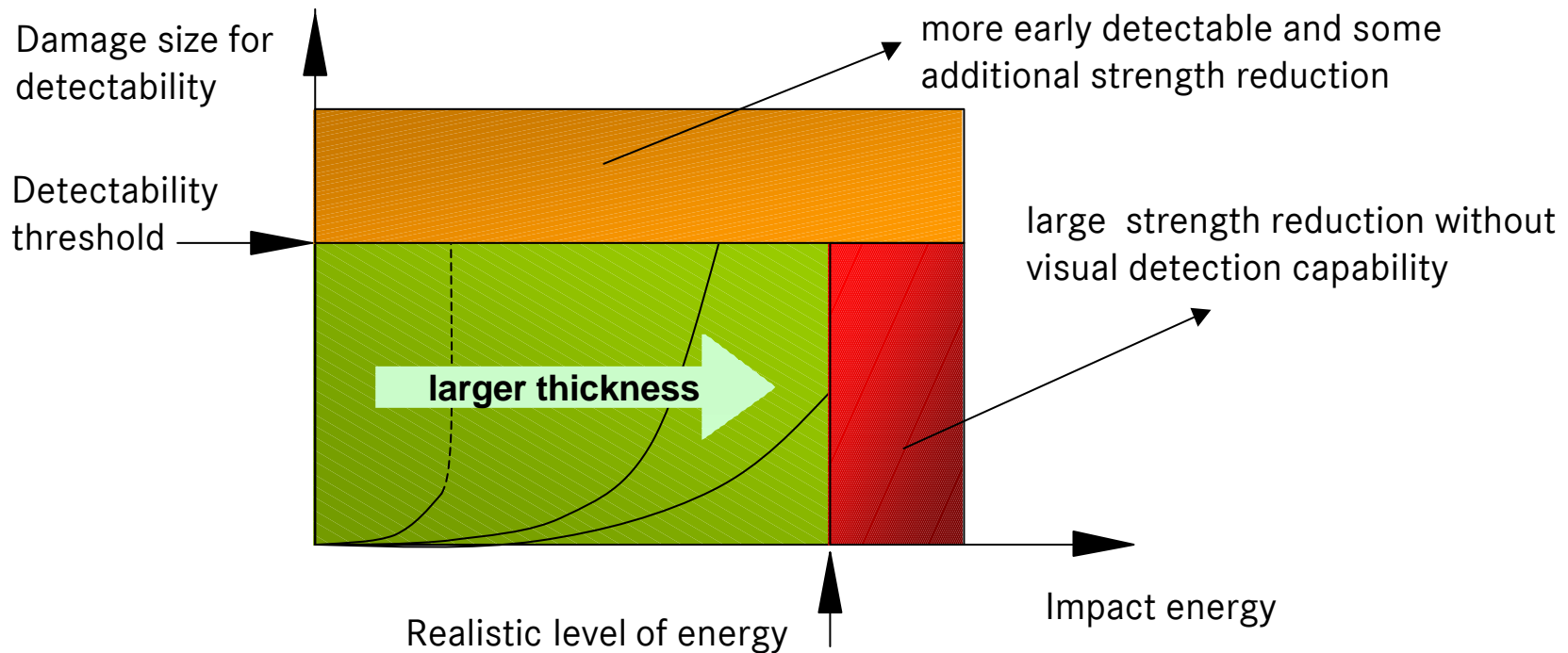
As far as accidental damage is concerned, two situations have to be considered:

- 1) Damages meeting JAR/FAR 25.305 static strength requirements which might grow during fatigue but still remaining undetectable with the selected inspection method**

# A300-600R

## Compliance with JAR/FAR 25.571 'Damage tolerance and fatigue evaluation of structure'

- 2) Damages beyond the established threshold of detectability for the selected inspection procedure or damages resulting from higher energy levels than the level that can be realistically expected from manufacturing and service



# **A300-600R**

## **Compliance with JAR/FAR 25.571 'Damage tolerance and fatigue evaluation of structure'**

Depending on the detectability a different JAR/FAR 25.57 sub-paragraph will apply:

- ✍ For visually detectable impact damages compliance is demonstrated according to JAR/FAR 25.571 (b)
- ✍ For non-detectable damages JAR/FAR 25.571 (b) is not applicable. Those damages already accounted for in static strength requirements and those with increased energy are to be demonstrated according to JAR/FAR 25.571 (c), fatigue (safe) life evaluation

# **A300-600R**

## **Compliance with JAR/FAR 25.571 'Damage tolerance and fatigue evaluation of structure'**

For both types of damages 2 thresholds have to be defined:

- 1) An upper limit energy cut-off level that is assumed to be extremely improbable (less than  $10^{-9}$  per flight hour)
- 2) A new detectability threshold above which damage becomes obvious (detectable by walkaround inspection within a limited number of flights)

# **A300-600R**

## ***Compliance with JAR/FAR 25.571 'Damage tolerance and fatigue evaluation of structure'***

The residual strength requirement for sizes below this new threshold (obvious damages) is according to JAR/FAR 25.571 (b) limit load up to  $V_c$ .

For accidental damages which are noticed immediately (referred as discrete source) JAR/FAR 25.571 (e) applies where the residual strength requirement is linked to the capability of successfully completing the flight under consideration of corrective action taken by the crew following the incident.