



Magnesium Elektron

SERVICE & INNOVATION IN MAGNESIUM

SAE Aircraft Seat Committee Magnesium Working Group

International Aircraft Materials Fire Test Working Group

Boeing

Seattle, Washington

March 3 & 4, 2010

Bruce Gwynne – VP Divisional Strategic Development



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Magnesium Usage in Aircraft Cabins - Regulations

SAE International Aerospace Standard – AS8049

“Performance Standard for Seats in Civil Rotorcraft, Transport Aircraft and General Aviation”

Para 3.3.3 “Magnesium alloys shall not be used.”

SAE Aircraft Seat Committee: Custodian of Standard AS8049

FAA Position Statement – “Use of Magnesium in Airplane Cabins”

“FAA has had several recent inquiries regarding the use of magnesium in airplane cabins. Specifically, magnesium alloys...in seat structure”

“FAA’s central concern...is flammability”

“FAA...to be convinced...level of safety not reduced”

“Magnesium is currently the subject of a task group.”

“FAA...research in this area...would likely *include full-scale testing.*”

FAA – TSO-C127, Rotorcraft and Transport Airplane Seating Systems



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Magnesium Usage in Aircraft Cabins - SAE

SAE Aircraft Seat Committee , Tucson January 22 - 24, 2008

Questions for SAE Aircraft Seat Committee: Changing AS8049

How do we change the language in AS8049 prohibiting Mg?

- What mechanism for changing the standard: scheduled revision?
- Can TSO-C127 disregard Para 3.3.3 by exception?
- Para 3.3.3 is based on conjecture, speculation, no consensus of origin, presumed to be flammability.
- Can an SAE Standard exist without corroborating data back up?
- Can we form a Magnesium Working Group?



Magnesium Usage in Aircraft Cabins - Regulations

SAE - Magnesium Working Group Formed

- First meeting January 20, 2010
- Two issues: 1) Para 3.3.3 restriction of magnesium, AS8049 revision
 2) Need for design criteria, best practice
- SAE is industry group, establishes industry standards. Adoption by FAA is not obligatory.

AS8049

- Five year scheduled revision now due.
- Can't we just take out the 'no magnesium' paragraph? No!
- White paper requested in form of Aerospace Information Report (AIR)
- AIR to contain details of flammability testing and results.
- Circulate in committee for comment and criticism.
- Basis for change to AS8049.
- Alterations to AS8049 go to committee for balloting process.
- Process can take up to two years!



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SAE - Magnesium Working Group

Design Criteria

- Request for magnesium design details, do's and don'ts.
- Aerospace Recommended Practices (ARP) document format.
- Address various alloys, specifications, mechanical/physical properties, flammability considerations.
- Also corrosion prevention, joining, machining, recycling, etc.

Questions for FAA

- Does TSO – C127 have to specify Para 3.3.3?
- More expedient route to removing Magnesium prohibition?
- Mechanism/process for changing TSO?

SAE – Aircraft Seat Committee, next meeting:

May 25 - 27, 2010 San Francisco



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The End

Thank you for your kind attention



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