Use of Magnesium in Airplane Cabins—Updated 10/07

The FAA has had several recent inquiries regarding the use of magnesium in airplane cabins. Specifically, magnesium alloys have been suggested as substitute for aluminum alloys in seat structure, as well as other applications, due to the potential for weight savings.

The FAA's central concern regarding the use of magnesium in the cabin is flammability. The current regulations do not address the potential for a flammable metal to be used in large quantities in the cabin. Therefore, if such a material were introduced to the cabin, the FAA would have to be convinced that the level of safety was not reduced. Special conditions may be required to establish appropriate criteria. Different magnesium alloys have different susceptibility to ignition, however, magnesium remains a material that, once ignited, is very challenging to cope with using fire extinguishers currently available on aircraft.

The use of magnesium is currently the subject of a task group of the International Aircraft Materials Fire Test Working Group. Depending on the outcome of the task group's work, the FAA may support additional research in this area, to the extent industry can supply materials. This would likely include full-scale testing should the initial assessments suggest there is some potential for acceptable installations. Both the post crash, as well as in-flight, fire scenarios need to be addressed.