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### **Magnesium Alloys in Army Applications: Past, Current and Future Solutions**

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Since the 1940's Mg-alloys have been used for military applications, from aircraft components to ground vehicles. The drive for usage was largely availability and lightweighting of military systems. But the promise of widespread usage has not been met. With recent fuel costs and logistical burdens has come increased recognition of the need to develop and implement lightweighting strategies for the full range of weapons platforms (land, sea, and air) without a loss in platform functionality. The potential for significant improvements in the mechanical and physical properties of lightweight metals will drive design of ultralightweight metal structures and components, thus reducing large logistical burdens, minimizing operational constraints and liabilities, and reducing vulnerabilities. This lecture will cover past, present and future Mg-alloy applications with a focus on scientific barriers relevant to integration of Mg-alloy, and solutions which are currently being developed to address these issues.