

## Engine/APU Halon Replacement Efforts for Commercial Airplanes

Boeing has worked diligently to find an alternative agent for commercial jetliner engine and auxiliary power unit (APU) fire extinguishing systems. This Halon-1301 replacement effort has continued for over a decade, including two industry surveys and significant internal testing within the last decade. Separately, other parts of the industry have done the same thing – Eclipse Aviation introducing PhostrEx on the Eclipse 500 and Airbus selecting FK-5-1-12 for use on the A350 – both discussed in this forum in the past.

One promising agent was disqualified for this application following unsatisfactory test results at the FAA Tech Center, while a second new agent is currently undergoing testing to determine the concentration requirement to match Halon performance. Determining that concentration requirement, however, is only one part of fielding a new agent. Many airplane compatibility aspects must also be considered – such as toxicity, shelf life, temperature range and other design considerations.

Once these items are all known, a certification program must be devised with the regulatory authorities which satisfies all parties that airplane safety and regulatory compliance is not being compromised. This is a time- and labor-intensive effort which requires the coordination and scheduling of many different groups with a wide range of expertise.