



Engineering Sciences Section – 2007

C46 Government Certification: Truth or Dare?

Ira J. Rimson, MS, 2120 Kirby Street, NE, Albuquerque, NM 87112-3476*

After attending this presentation, attendees will understand the need for forensic mishap investigators to examine government certification criteria and their acceptance practices, and uncover enhancements to mishap probabilities that bureaucrats overlook.

This presentation will impact the forensic community and/or humanity by generating skepticism among those forensic practitioners who are tempted to accept uncritically certification to standards by government regulatory agencies, and motivate them to explore in depth the details of the agencies' actual certification practices.

U.S. Federal Aviation Regulations (Title 14, US Code of Federal Regulations, Parts 1 – 199) are among the most highly detailed specifications in the federal regulatory compendium. Nonetheless, fatal aviation accidents continue to occur which are traceable to incompetent federal regulators, regulations and/or regulatory processes despite investigative attribution to other "causes."

Cases of fatal accidents will be presented involving a single airplane model to which the US FAA improperly issued certification, after the agency's certification managers had accepted uncritically a faulty affirmation by the UK CAA that the airplane met applicable US certification criteria.

The aircraft was bought by the US Air Force from a UK manufacturer. Contractual specifications required that the airplanes be granted certification under US civil aviation regulations (Title 14, USCFR Part 23). After three fatal accidents resulted in six fatalities in two years' operation, a detailed review of the design by an independent contractor to the USAF revealed more than a dozen exclusive instances in which it failed to meet US certification criteria. *Post-facto* discovery revealed that the FAA had based its certification on assurances by the UKCAA that the airplane met US requirements. The USAF trainer was a "derivative design" significantly modified from prior models. Because it was "derivative," the UKCAA accepted the manufacturer's assertions that the design modifications had been tested and found to comply with the US certification criteria. In fact, they were based on "analyses" by persons who had not previously designed *ab initio* a powered airplane, and despite warnings by the manufacturer's Chief Test Pilot that the derivative design had serious failings.

Government certification cannot be accepted uncritically as assurance that an approved product actually complies either with regulatory criteria, or that regulatory specifications fulfill real-world performance requirements. Competence, both of the specifications and of the persons who draft and apply them, must be subjected to critical examination after mishaps, and precedent to litigation.

Government Certification, Latent Hazards, Mishap Investigation