COURSE OBJECTIVE

Since the inception of the ICSE in 1969, more than 6,500 students have completed crash survival design and crash investigation courses. The latest ICSE course has been prepared and is presented by BAE Systems' Protection Systems business. The course objective is to give personnel a better understanding of the basic principles of crashworthiness and the ability to evaluate system upgrades. Both rotary-wing and light fixed-wing aircraft are covered.

The ultimate goal of the training is to provide tools and knowledge that can lead to increasing the survival rates for aircrew and passengers in the event of a crash.

CLASS CURRICULUM

The current crashworthiness course, which is presented over four days, covers the physics of crashes and energy-absorption, human tolerance to injury and injury mechanisms. It describes the operational principles of crash mitigation technologies, such as energy-absorbing landing gear, energy-absorbing seats, restraints and crashworthy fuel systems. And, it provides insight into elements of airframe design that indirectly mitigates crash injury and talks about aspects of post-crash survivability, such as egress and water survival.

The course concludes with a practical exercise where small groups of students each evaluate a current aircraft according to a course-supplied rating system.

The class comprises of approximately 20 lectures presented by three or four instructors. The instructors also supervise the aircraft evaluation practicum if aircraft are available for review. The low number of instructors provides the benefit of minimal lecture content overlap, reducing course cost and allows the course to be presented at your facility.
STANDARD FEATURES

- Review of basic crash physics and impact kinematics
- Overview of existing crash safety standards and specifications
- Human tolerance and injury mechanisms due to the crash environment
- Human tolerance to fire environment
- Post crash fire reduction and crash-resistant fuel system design basics
- Crashworthy structure design fundamentals
- Energy-absorption and management techniques
- Crashworthy energy-absorbing seat design principles
- Evacuation considerations and hazards
- Occupant restraint design and limitations
- Overview of emerging crash safety technologies
- On-site crashworthiness review of actual aircraft (requires access to aircraft)

APPLICABILITY

Overall, the course is intended to enable personnel to recognize potential shortcomings in existing aircraft, intelligently evaluate retrofit alternatives and evaluate safety systems for future acquisition. An entry level crash safety system designer can also benefit from the course and learn the importance of an overall systems approach to improving occupant crash survivability.