BLAST AND FRAGMENT LOADING TO CONTAINERS FROM A STRUCTURAL REACTIVE MATERIAL CHARGE

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Effects of fragments on target structures (like components of an aircraft, Figure 1) can be distinguished between hole-perforations with inert fragments and structural blast damage with reactive material fragments. To measure the perforation and blast effect of fragments at the same time empty but closed containers were attacked by detonating charges with *Structural Reactive Material (SRM)* casings. Both controlled and natural fragmenting charges were investigated. After the tests the containers were evaluated by blackening and taking photographs of the internally illuminated containers. An in-house software (EDI Edge Detection in Images) was applied to count the holes, measure their sizes and size distribution (Figure 2 left). Depending on the reaction rate and the material type of the fragments the containers were slightly or totally damaged or torn open on the front (Figure 2 right) or rear side. The experimental results will be reported. The trials were supported by numerical simulations with reactive burn models.

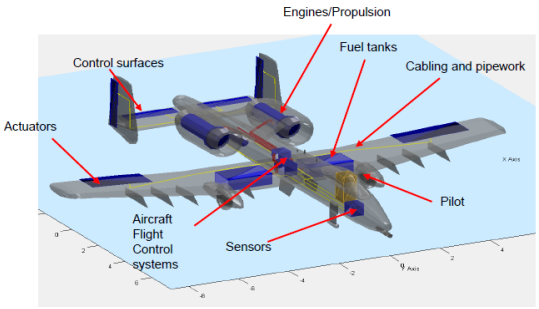

Figure 1: Vulnerable boxes in an airplane.

Figure 2: Evaluation procedure of perforated containers (left). Torn open containers on the front side (right).