



National Aeronautics and
Space Administration



Emergency Locator Transmitter Survivability & Reliability (ELTSAR) *Phase 3: Helicopter Crash Test*

Briefing to SC-229/WG-98
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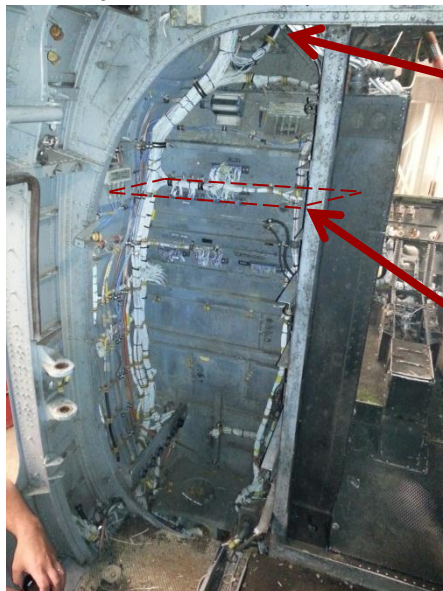
Second Transport Rotorcraft Airframe Crash Testbed (TRACT 2)

TRACT 1, 2013



Another CH-46E Sea Knight fuselage will be used for TRACT 2 on 24 Sept 2014

Cockpit Bulkhead Cabinet



GoPro Camera & Mount



View of ELT Shelf Installed from Overhead Camera

➤ Planned Impact Conditions

- 35-ft/s longitudinal and 26-ft/s vertical, ~ 15-20 G's average

➤ Data Recording

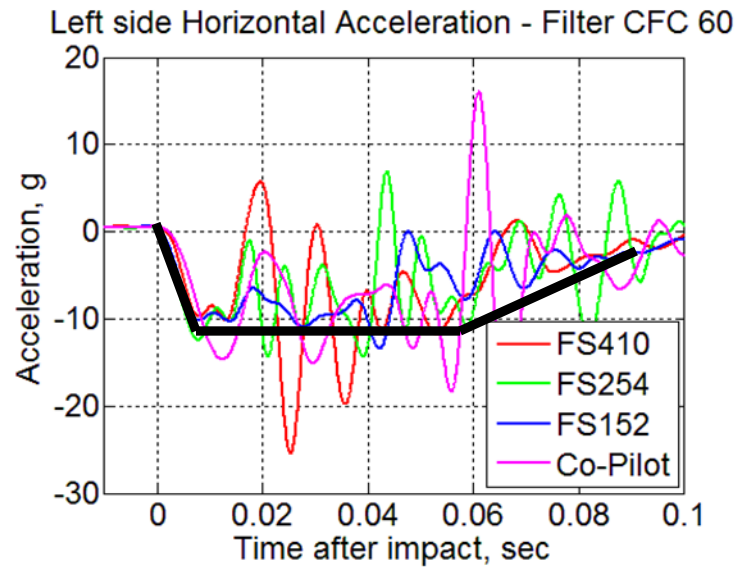
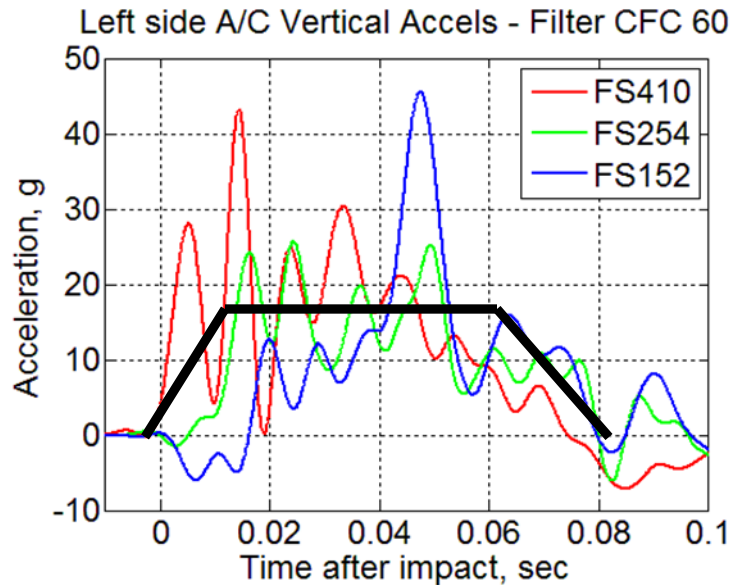
- Longitudinal & vertical acceleration of ELT shelf + video

➤ Minimum of 2 Live ELTs Installed

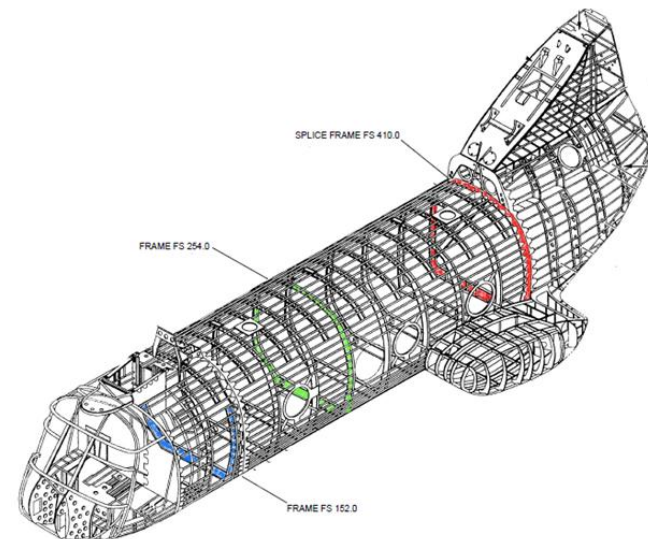
- Complete systems with external antennas
- Final installation orientation details pending results of crash safety (drop tower) testing

ELTSAR is one of 18 different experiments on board TRACT 2, which is primarily focused on occupant loads, restraint systems and energy attenuating subfloor designs

TRACT 1 Results



- Black line is trapezoidal “fit” overlay - looks pretty good
- Produced spinal injuries in test dummies
- [TRACT 1 Video & Story](#)





Results



➤ TBD

- Testing to be conducted 24 September 2014



Summary



- **ELTSAR will piggy-back on the TRACT 2 test on 24 September 2014**
- **Cockpit bulkhead cabinet is the only available space for ELT testing and has been outfitted with an aluminum shelf for ELT fitment**
- **Complete ELT systems will be installed, including externally mounted antennas and associated cabling**
- **Final installation scheme is pending crash safety test results**
- **Results will include acceleration time histories, video and whether the ELTs successfully activated and transmitted a distress signal**
- **Lessons learned will be used to support airplane crash testing**





BACKUP