
Mr. Ray Carter and Capt Curt Lalonde
Crew Systems - AETE
Outline

- Aim
- Aviation Life Support Equipment (ALSE) Failures
- Incompatibilities
  - Other ALSE
  - Cockpit/Cabin
- Training Requirements
- Hazardous Flight Test – ALSE Requirements
- Conclusion
Aim

- To present some of the unique hazards and risk mitigation associated with testing ALSE.
Sources of Risk

- ALSE Failures
- Incompatibilities
- Training Requirements
- Using ALSE on an airframe it is not designed for, in order to mitigate other test flight risks
ALSE Failures

- When introducing prototype ALSE equipment failures must be expected and mitigated
  - Helmet Comm Failures
  - O2 Concerns
  - Inadvertent Ejection
ALSE Failures

- O2 Concerns
ALSE Failures

- O2 Concerns
ALSE Failures
Mitigation

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Incompatibility

- Functional and serviceable ALSE may still create hazardous conditions if it is not compatible with the aircraft or in-service ALSE.
- Although a build up approach is important, ground testing may not always reveal an incompatibility or its extent.
Incompatibility

- Inadvertent Ejection
Incompatibility

- Inadvertent Ejection
Incompatibility
Incompatibility
Incompatibility
Incompatibility
Incompatibility
Aircrew receive intense and recurring training in the use of ALSE.

This training leads to habits and muscle memory that can be difficult to overcome when introducing prototype ALSE.
Training
Training

- SCF Egress.mpg
- External View Dunker.AVI
Some test flights require ALSE to mitigate high risks.

Integrating ALSE not common to the airframe requires evaluation to ensure risks are at an acceptable level.
In-flight ejection testing with a seat that has its certification pulled.

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Hazardous Flight Test – ALSE Requirements

- Hawk One
- Desk Top Analysis combined with limited T & E
Introducing prototype ALSE presents a myriad of hazards that must be identified and mitigated to ensure safety during flight testing.
Questions

Experto Crede

“Believe Those Who Know”