

Rebuild of the Cargo MPS Test Article

International Aircraft Systems
Fire Protection Working Group

Presented to: IASFPWG Meeting

By: Dhaval Dadia

Date: Oct 31, 2018



Federal Aviation
Administration



Background

- Cargo MPS test article developed a lot of natural leaks from repeated fire tests.
- Concerns with containment of agent and smoke from future test campaigns.
- Opted to reskin the inside of the cargo compartment with 16GA sheet metal.
- Re-instrument the compartment to a newer DAQ system.

Gutting and Framework



AFT Compartment



FWD Compartment

Reskin Progress



AFT Compartment

FWD Compartment

Air Exchange Mechanism



Cargo MPS Test Article Specs

- ~2000 cu.ft., Air leakage rate of 48 cfm.
- Instrumented with K-type Thermocouples, Pressure Transducers.
- 4 gas analysis sample probes capable of measuring CO, CO₂, O₂, Halon in each line.

Cargo MPS Task Group

International Aircraft Systems
Fire Protection Working Group

Presented to: IASFPWG Meeting

By: Dhaval Dadia

Date: Oct 31, 2018



Federal Aviation
Administration

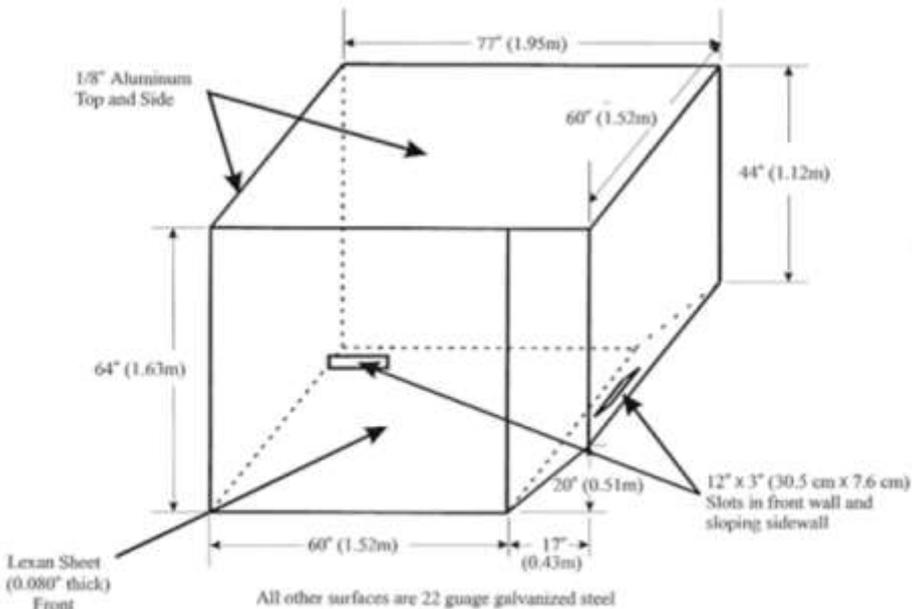


Background

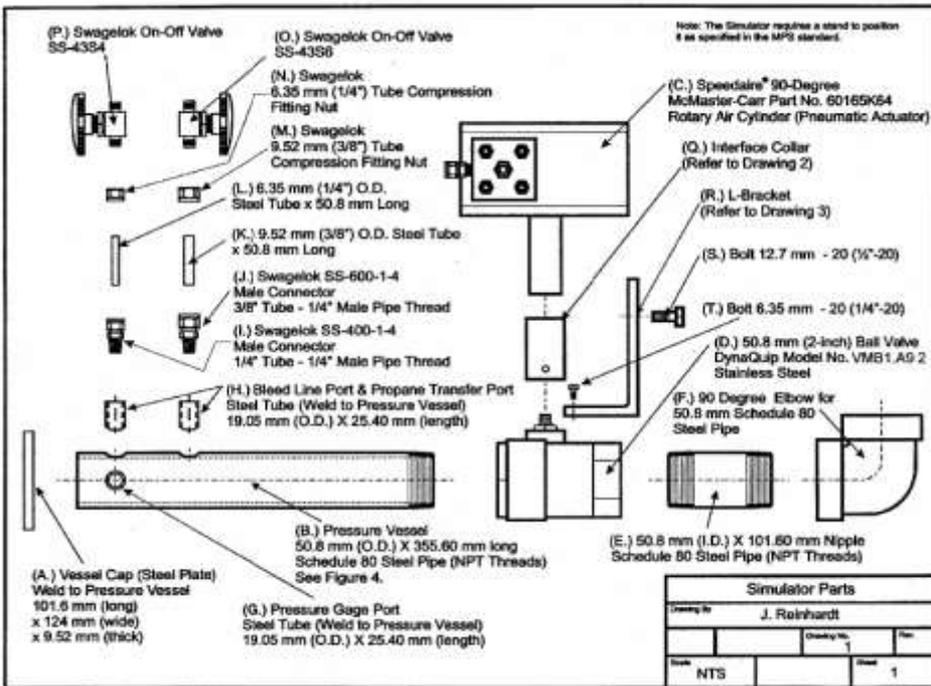
- During the rebuild process, several questions and concerns regarding certain specifications in the MPS materialized.

Concerns

- Galvanized steel used on 5 faces of the LD3 container.
- Concerns of toxic zinc fumes when temperatures reach above 392°F



Concerns



- Ball valve specification to be capable of opening in less than 0.1 seconds.
- The pneumatic actuator specified in the MPS is not capable of opening the ball valve at that rate.

Task Group Meeting

- 5:00 PM Wednesday Oct 31, 2018





Contact:

Dhaval Dadia

E-mail: Dhaval.dadia@faa.gov

Phone: 609-485-8828