

Air Transportable Isolator (ATIsol)

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AIM

To outline the testing required in GBR for new acquisition of Medical Equipment:



HISTORY

- 1970 Department of Health (DoH) tasked the RAF to develop an Air Transportable Isolator (ATIsol) capability
- First built by Vickers
- 1996 re-contracted to Putlocks Chimneys (!); built 3 ATIsol
- Used for all British air-movements of highly infectious patients
- Managed and operated by RAF; owned by DoH
- Capability Reviewed 2001 & 2003



BACKGROUND

Used in '85, '00, '03, '06 & '12

... then we have...

EBOLA and Op GRITLOCK

...so far...

2014 1x confirmed Ebola + 2 'Cat 3' pts.

2015 2x confirmed Ebola + 3 'Cat 3' pts.



REQUIREMENT

- Assessment of need in light of Ebola crisis
- Requirement set for 28 ATIsol
 - 25 additional systems (including envelopes)
 - 25 spare ‘envelopes’
- Short Timelines – 4 months order to delivery



PROCUREMENT

- The original supplier was able to produce 15 new ATIsol + 15 spare envelopes in timeframe
 - Secondary Supplier required
- Liaison with other nations Med Procurement teams identified Italian supplier
 - 10x ITA ATIsol procured + 10 spare envelopes



PROCUREMENT

- ITA ATIsol Similar BUT NOT IDENTICAL to GBR ATIsol
 - HEPA Filters interchangeable
 - Frame Identical
 - ...but...*
 - Negative Air Pressure system DIFFERENT
 - Plastic Envelope DIFFERENT



ORIGINAL TESTING

DSTL/CR17950, Porton Down, December 2005

- Visual Assessment of the ATI
- Airflow delivery rate into the ATI
- Time to achieve operational pressure and the ability to maintain pressure
- Particulate filter efficiency and hermetic seal integrity test
- Ability to maintain operational pressure at simulated altitude and during rapid decompression



TESTING

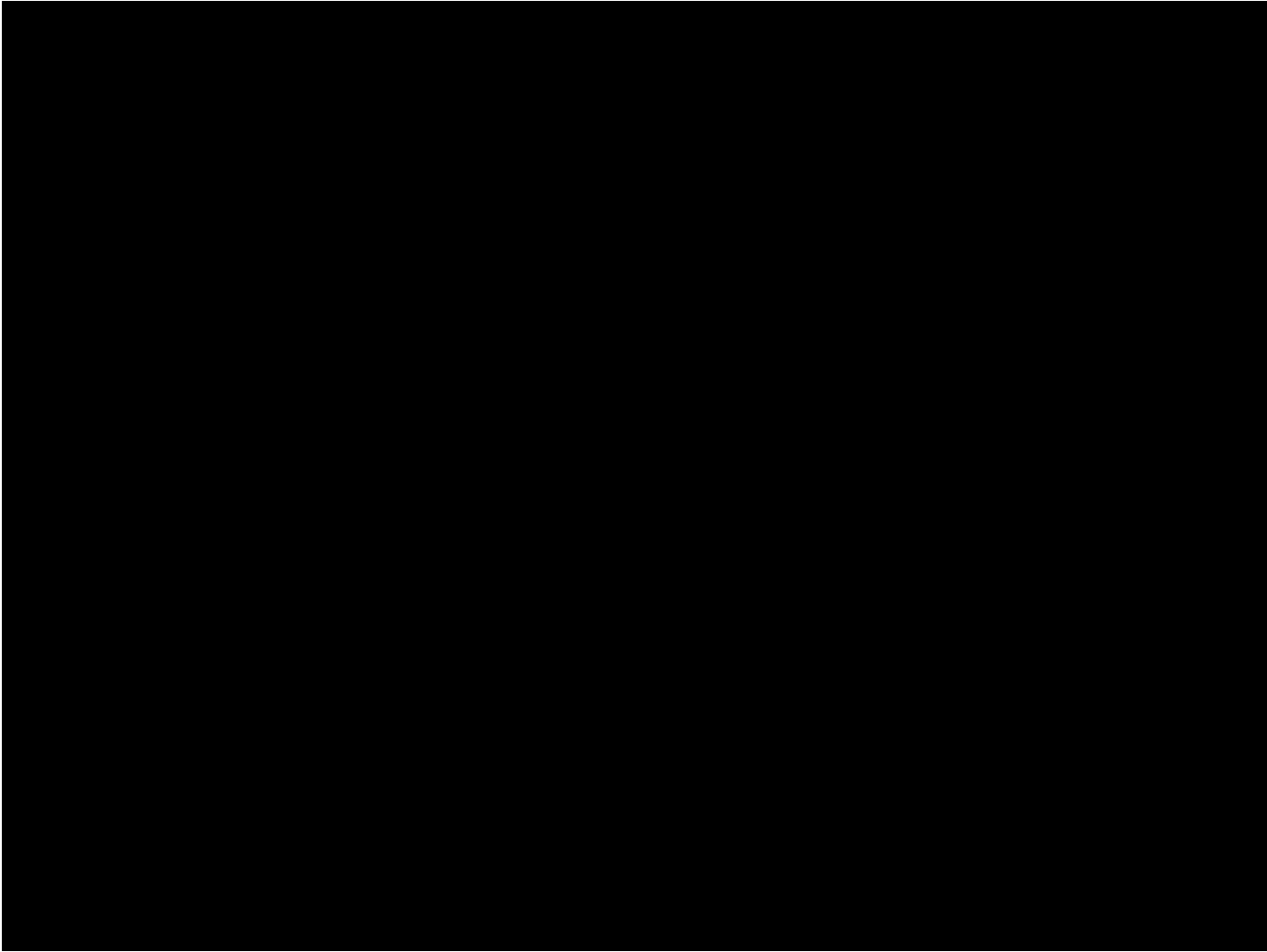
- ITA Supplier provided test reports for:
 - HEPA Filters Efficiency
 - Envelope Integrity
 - Envelope Plastic



TESTING

- Air Pressure Testing from Original ATIsol
 - Could not be 'read-across' with new system
 - New aircraft C17 has different requirements
- C17 Aircraft profile requires a...
 - Altitude test (0-8000ft)
 - Rapid Decompression 8k to 40k in 3 secs





Example of Rapid Decompression
8000ft to 40,000ft pressure over 3 seconds

RAF CAM TESTING

- Visual Assessment
- Time to achieve operational pressure and the ability to maintain pressure
- Ability to maintain operational pressure at simulated altitude and during rapid decompression



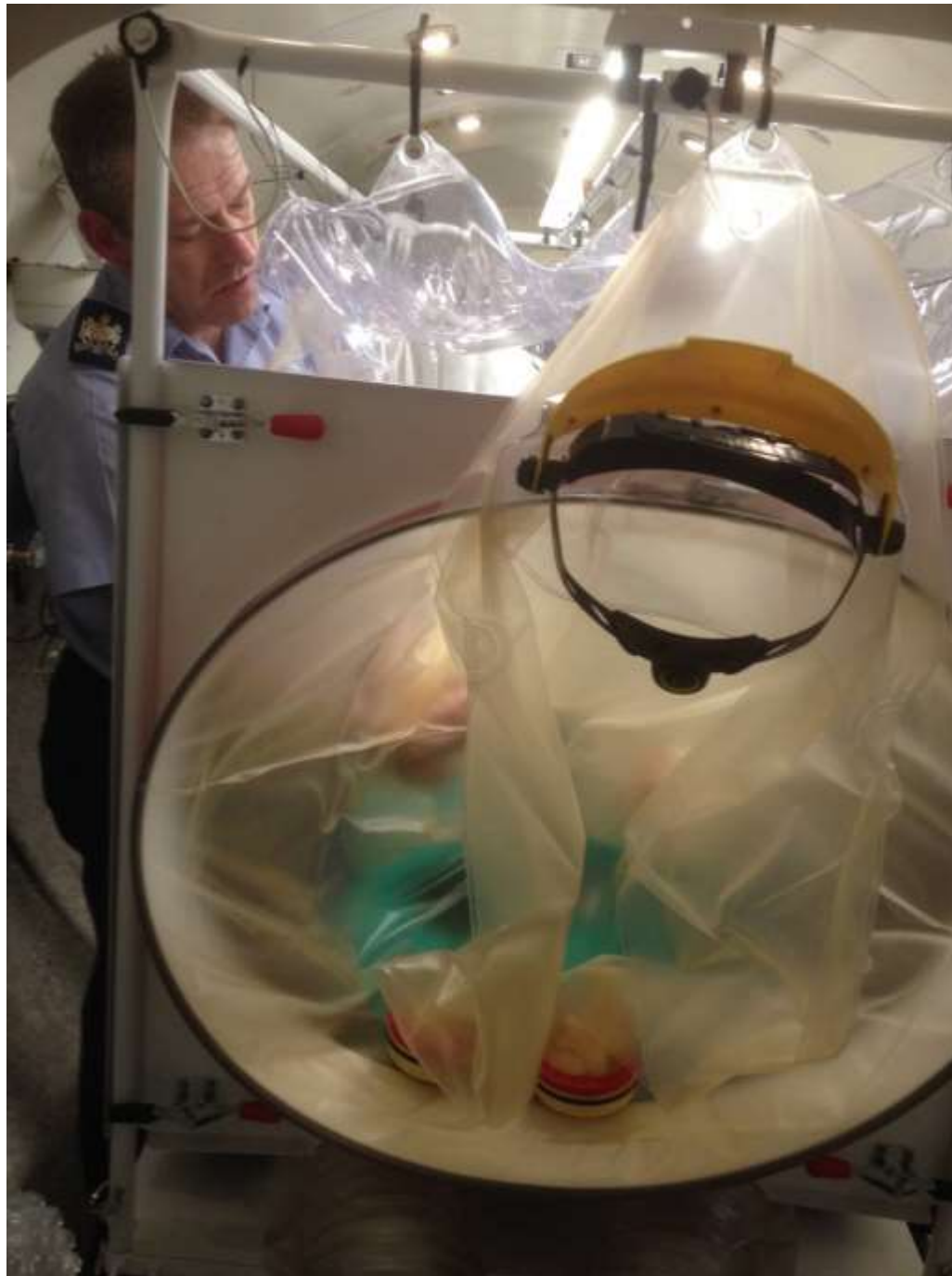
Measuring up to ensure it fits
in decompression chamber.



Fully disassembled, ready to go
inside chamber

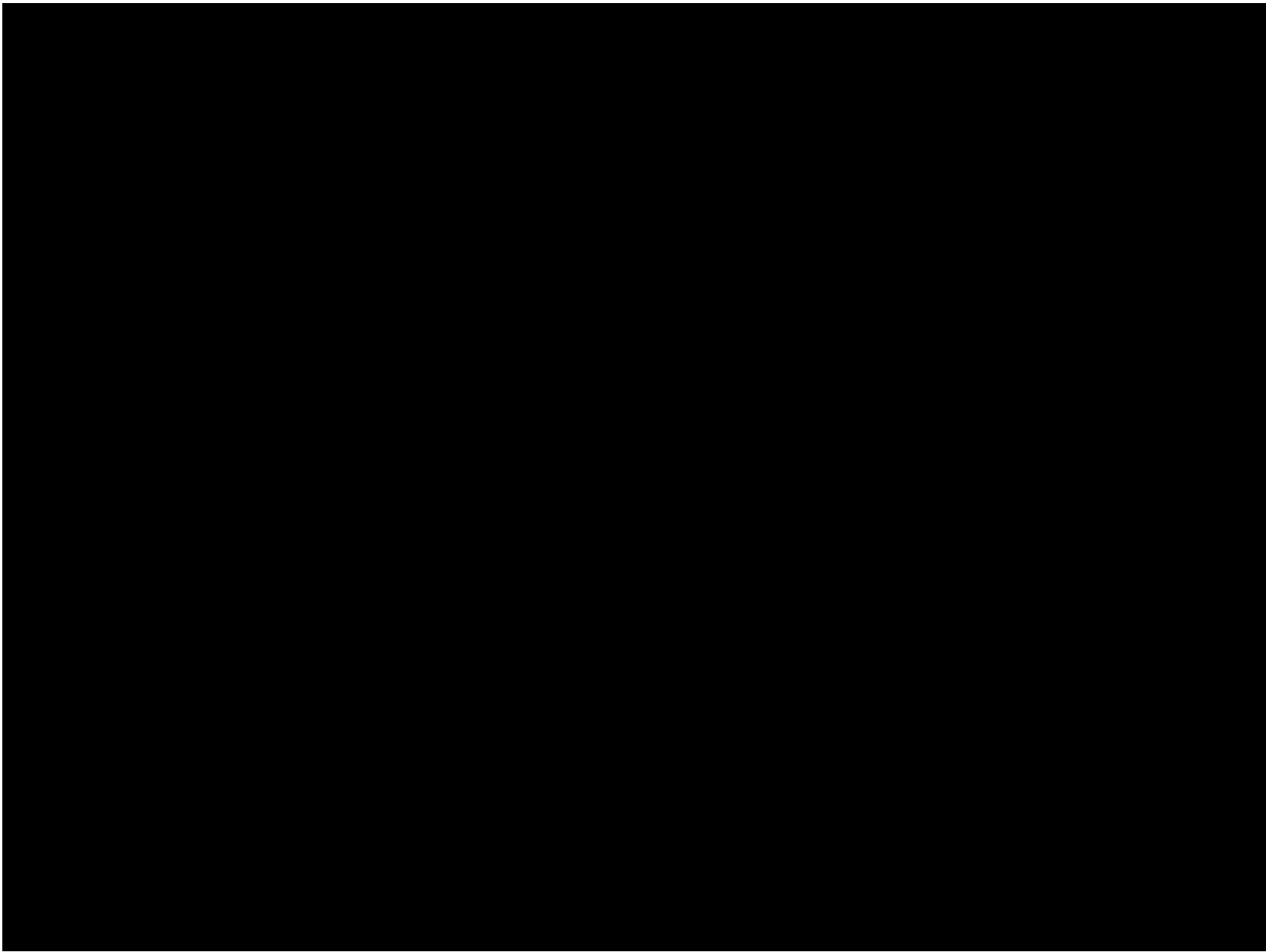


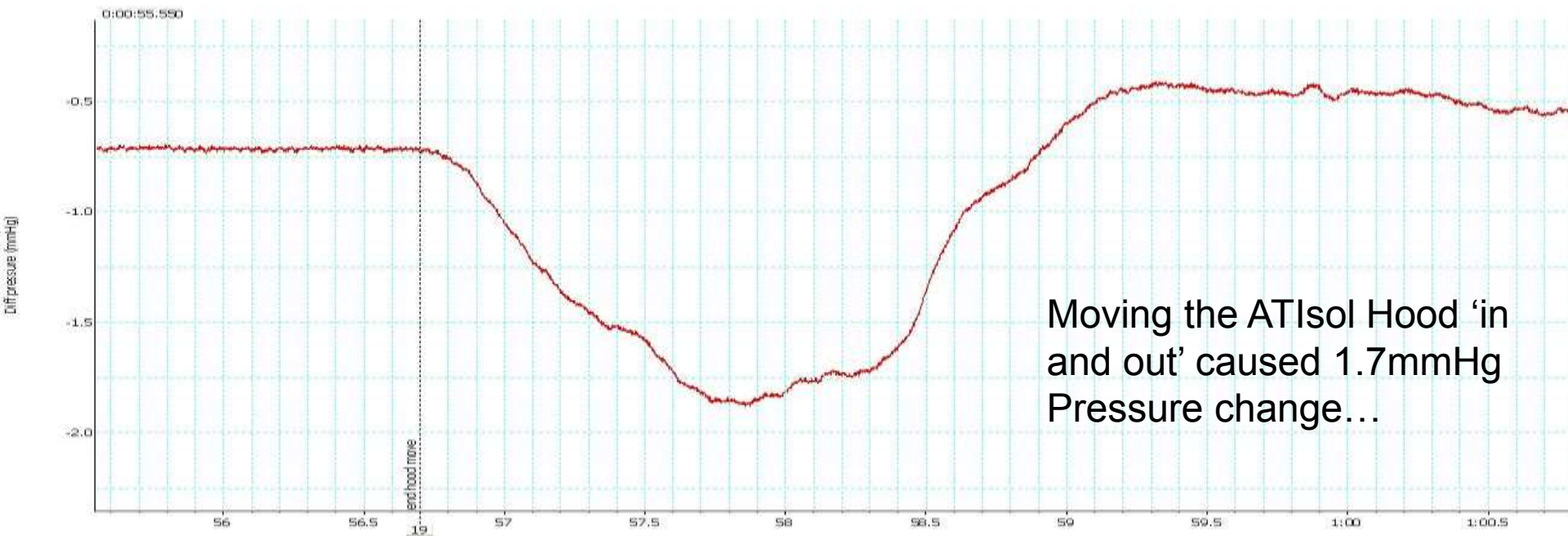
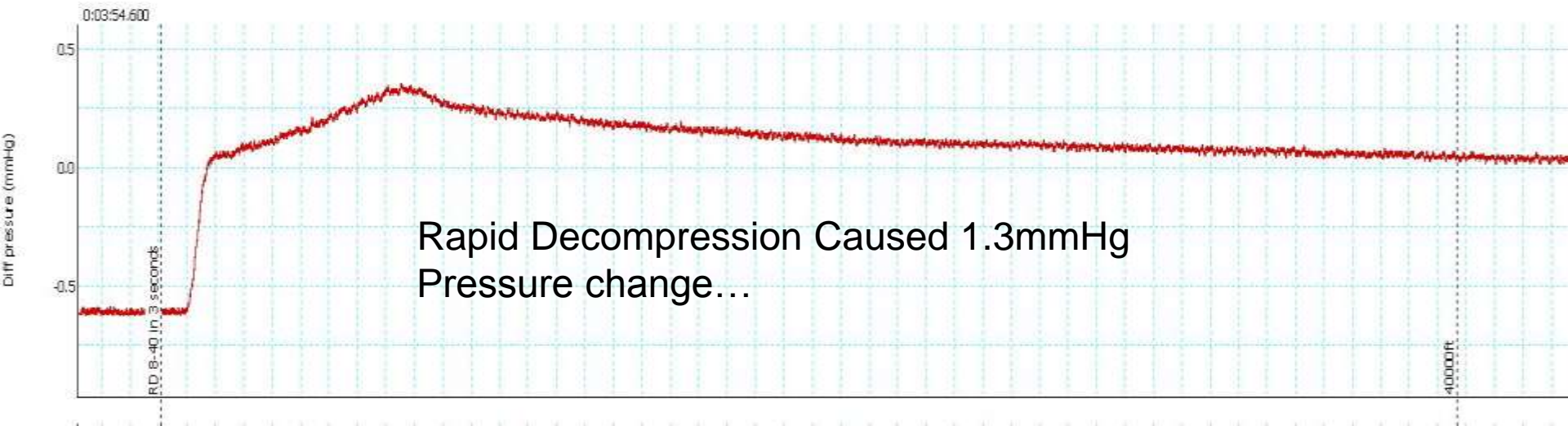
Reassembly
for testing



ATIsol under normal operating pressure
Not a very pleasant environment for the patient!







RAF CAM TESTING

Unable to perform, in the timeframe available:

- Airflow delivery rate into the ATI
- Particulate filter efficiency and hermetic seal integrity test (ITA test acceptable)



SUMMARY

- Urgent Operational Requirements enhance risk
- Wide range of Expertise needed to ensure equipment is both safe and fit for purpose
- Hazard Identification Meeting early in process helps to mitigate risk



Toodle Pip

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