



Multifunction Powered Air Purifying Respirators

*** Report Summary ***

Frank Koh



Future Studies

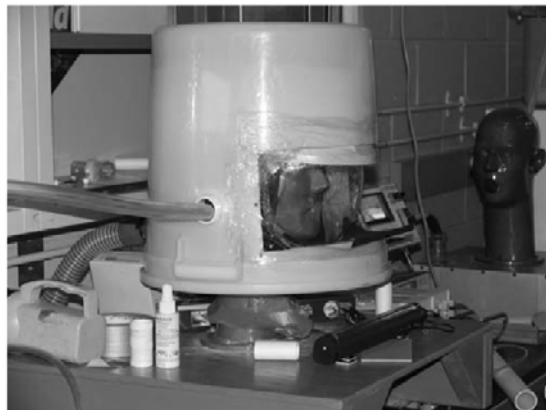
- Identify the leak flow path when inhalation flow $>$ PAPR blower
 - Human testing with incense
 - Breathing machine simulation
- Determine the tidal volume of contaminated air while wearing the PAPR

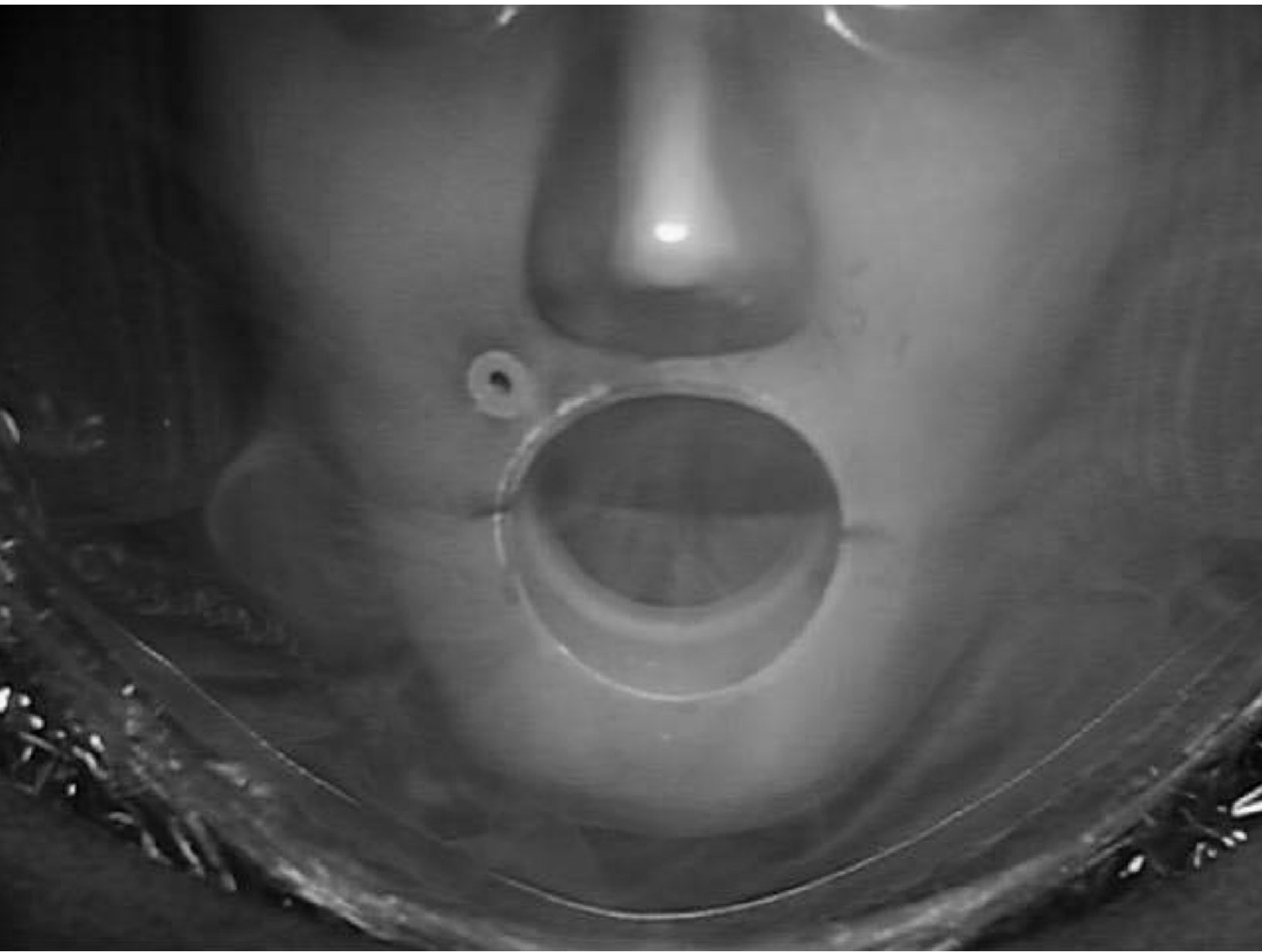


Current KRUG Steady State

Vacuum flow rate $>$ PAPR blower

- When PAPR was maxed, flow pathway was too quick to capture.
- But, if the PAPR Blower is slowed, easier to see the flow pathways.



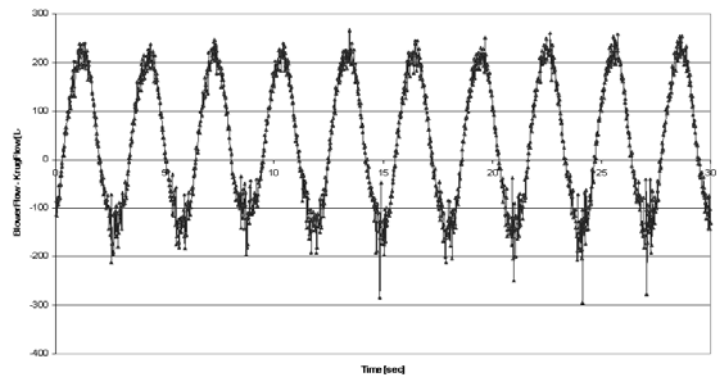
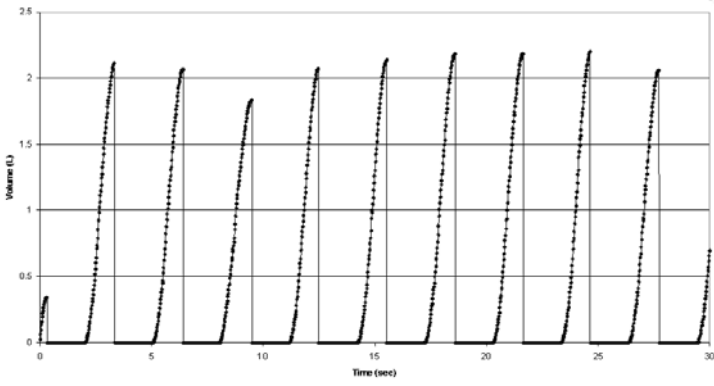




KRUG Breathing

- Net max inhalation rate is about 200 LPM.
- Most of the leak points are between the scarf and lower jaw and around the ears.







Future Studies

- CO₂ build up and re-breathed.
- Are the leak flow pathway found during inhalation similar to the pathway of exhaled air?
- If so, the blower intake location may be too close to the exhalation pathway.
- A method to determine the tidal volume of contaminated air while wearing the PAPR.