Combination Respirator Unit (CRU) & The Homeland Security Market

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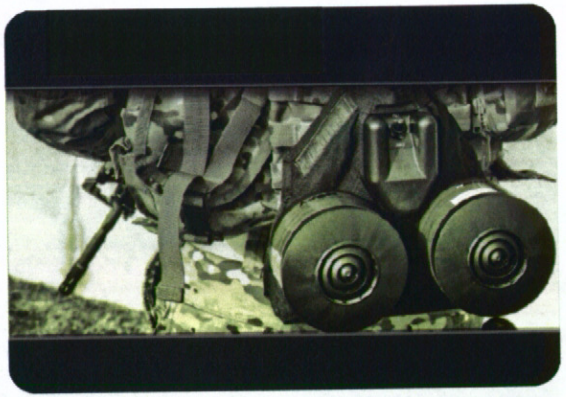
What is a Combination Respirator Unit (CRU)?

"A CRU may consist of a combination of different types of respirators"

- Open Circuit Self-Contained Breathing Apparatus (OC-SCBA)
- Closed Circuit Self-Contained Breathing Apparatus (CC-SCBA)
- Supplied Air Respirator (SAR)
- Powered Air-Purifying Respirator (PAPR)
- Air-Purifying Respirator (APR)



The end user…

Current User Groups

- DOD: USSOCOM, NAVY EOD, Air Force Fire/Rescue
- Local/State/Federal Law Enforcement agencies
- National Guard CST

ILEAS
Illinois Law Enforcement Alarm System

History of CRU

- 2001 DOD (US SOCOM) initiated development program
- Special users required multiple mode system
- Equipment developed:
  - *Combination APR (positive & negative pressure operation)*
  - *Multi-functional PAPR module*
  - *Stripped down SCBA*

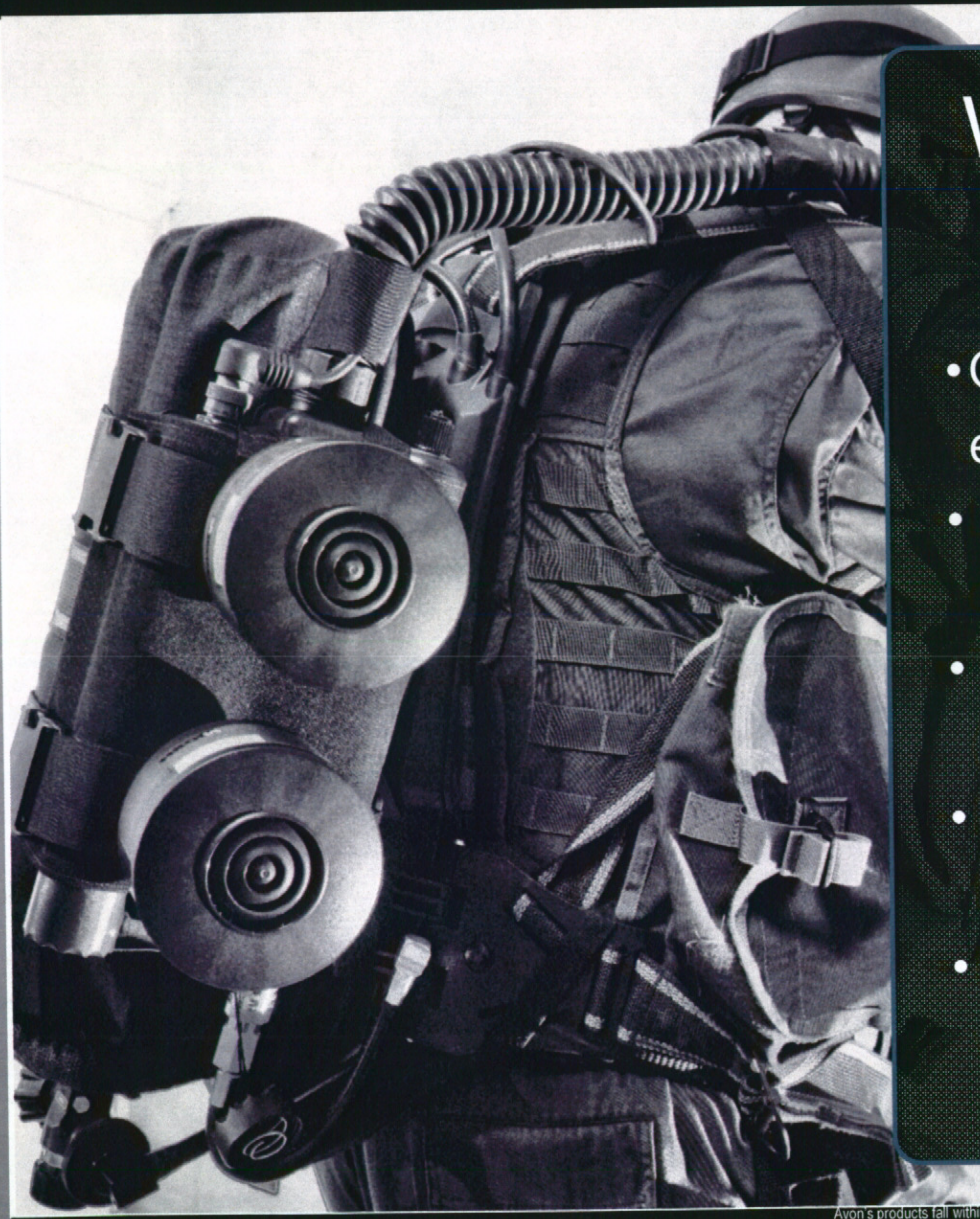
Combination Respirator Unit vs. Hybrid Breathing Apparatus

1) Combination System

- A combination of several respirator components (modular platform)

2) Hybrid System

- A system developed with integrated components



Why a Combination Respirator Unit?

- Operational flexibility– changing environments/situations
- Longer operational time (SCBA only 30-40 minutes)
- Tailored to meet specific threats (user configurable)
- Product familiarity, thus reducing training time
- Proven operation and technology within DoD

Certification challenges

- No published standard for combining RPE at present
- Users:
  - *Who are they?*
  - *Who may need it?*
  - *How should they use it*
- NIOSH 42 CFR 84 vs. NFPA 1981, 2007 *Edition (LE requirements differ from Fire)*
- Procurement method *(DHS funding)*

Operational Considerations

1) Determining when the user must change modes

- *Integrated gas detection (O2, CO)*
- *User awareness of environment (Heads Up Display)*
- *Stealth operation (no whistle)*

2) Switching from APR/PAPR to SCBA and back to APR/PAPR

- *Filter contamination can occur during SCBA mode*
  - *Need to cover filters when using SCBA?*
- *No reversionary mode?*
- *Auto switching between modes?*

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