Interspiro Chemical Warfare Kit:

Combination Filter and SCBA Device

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WMD Threat Profile

• Agent exposure level?
  – Acute exposure, short duration
  – Low threat exposure, long duration

• Workload Issues?
  – Standby (advanced notice of threat)
  – High Workload (Active intervention)
  – Low Workload (Rehab/De-con)

• Exposure Term? Minutes to Hours
## WMD Respirator Options

<table>
<thead>
<tr>
<th></th>
<th>SCBA</th>
<th>APR</th>
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</thead>
<tbody>
<tr>
<td>Agent Exposure</td>
<td>Acute</td>
<td>Low</td>
</tr>
<tr>
<td>Event Duration</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Workload level</td>
<td>High</td>
<td>Low</td>
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</tbody>
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- The WMD threat defies **advanced** definition:
  - What about primary/secondary targets? Decoys?
- Respiratory protection should “shift” as threat profile, and the first responder’s role, shifts
The Responder’s Dilemma:

• “What equipment do I need to manage the threat?”
• “If the threat shifts, can I still manage the threat?”

A Combination Filter/SCBA provides options for the first responder.
Interspiro CW Kit

- SCBA accessory mask switches automatically from filtered air to positive pressure, and back
- Switch operating mode without ambient air exposure
- Uses Mil-Std C-2 canister
- Developed for USAF.
- Over 10,000 in use by Military, FBI and Secret Service
Interspiro CW Kit (con’t)

• Tested extensively in live agent.
• Available in butyl hood version (shown) or JLIST configuration
• Metal to metal Quick coupling allows for quick change
• Not approved by NIOSH for use in IDLH because of switch mode operation
Key Features

- Allows three modes of operation:
  - Stand-By (Filter)
  - Active HI flow/ HI PF (SCBA)
  - Rehab/De-con (Filter)

- Switch mode without exposure
  - Change cylinders “live”
  - Change filters “live”

- Hydration via drink tube
- Communication via speech diaphragm and radio interface
Tactical Operations

- Plenum/hose:
  - Balances mask load
  - Increases filter bed residence time
  - Fits AARF exposure ensemble
  - Allows for easier weapons sighting
- Secret Service HAMMER
- FBI Hostage Rescue Team
- Marine Corps CBIRF
General Conclusions

• Combination devices (SCBA/APR, SCBA/PAPR) can provide the first responder with more options when facing the WMD threat.

• Municipal use is compromised by lack of NIOSH approval.

• NIOSH should provide (encourage) a means for approving user selectable respiratory protection devices.
Soap Box Conclusions

• These features should be required of all combination devices:
  – Obvious means of switching mode,
  – Obvious means of knowing current mode
  – Mode switch does not allow ambient exposure

• NIOSH should approve user-selectable devices for first responders, as the WMD threat environment will be unpredictable, highly variable, and evolving by the moment.

• First responders need “flexible” WMD protection