V-22 FIRE PROTECTION UPDATE:
DRY BAY ACTIVE FIRE SUPPRESSION
AND SHIPBOARD FIREFIGHTING

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• Additional dry bays identified as candidates for active dry bay fire suppression
• V-22 Program “Way-Forward” efforts include:
  – Technology risk reduction & BHTI trade study
  – Fire suppression commonality emphasis
  – Potential technology candidates include:
    • Chemically active gas generators
    • Aerosol propellant gas generators
    • Simple Passive Extinguisher or “SPEX” concepts
• Block C Implementation Planned (Lot 10/2008)
V-22 Update: Shipboard Fire Fighting

Fire Fighting Complement:

- Flight deck & Catwalk station portables: one 18-lb PKP, one 15-lb CO2 with 7-ft wand.
- Previous V-22 Sea Trials: Concern raised as to suitability of wand for accessing nacelle and extinguishing a nacelle fire
- P-25 fire truck: AFFF & water (500-gpm), three 20-lb halon 1211 portables.
- NOT SHOWN: AFFF & water 1.5” and 2.5” handlines, 250-gpm and 95-gpm respectively.

V-22 Update: Shipboard Fire Fighting

Nacelle belly door fire fighter access panel (on fwd side).

IR Suppressor: not available for initial test series.

96.8” deck edge to nacelle CL
V-22 Update:
Shipboard Fire Fighting

• Results:
  – Existing shipboard wand determined to be unsuitable.
  – Tested representative nacelle fire threats (hydraulic fluid fires).
  – Over-the-Water: AFFF & Water from P-25, 2.5” & 1.5” Handlines.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>No/Moderate Wind</th>
<th>High Wind (30-35 knots)</th>
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<tbody>
<tr>
<td>Over-the-Deck</td>
<td>Tested agents: fire out, no relight</td>
<td>Only Halon 1211 100% successful; CO2 &amp; 1230 ext’d fire, relight followed</td>
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<tr>
<td>Over-the-Water</td>
<td>P-25: fire out, no relight</td>
<td>No fires extinguished, though P-25 (HL tests were 2.5” HL: opened door, exhausted available no-fire tests) 1.5” HL: door not opened</td>
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<tr>
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<td>2.5” HL: opened door</td>
<td>AFFF &amp; water to open door</td>
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• Follow-on test series - fleet shipboard firefighter(s) participation:
  – Qualify new wand; also plan to perform mid wing area tests
  – Retest nacelle fires under high winds
    • with IR suppressor
    • Planned discharge test of on-board nacelle HFC-125 extinguishing system