

-

Fall Protection

How long does it take to fall

<i>Height</i> <u><i>(feet)</i></u>	<i>Time</i> <u><i>(seconds)</i></u>
<i>4</i>	<i>0.5</i>
<i>16</i>	<i>1.0</i>
<i>36</i>	<i>1.5</i>
<i>64</i>	<i>2.0</i>
<i>100</i>	<i>2.5</i>
<i>144</i>	<i>3.0</i>

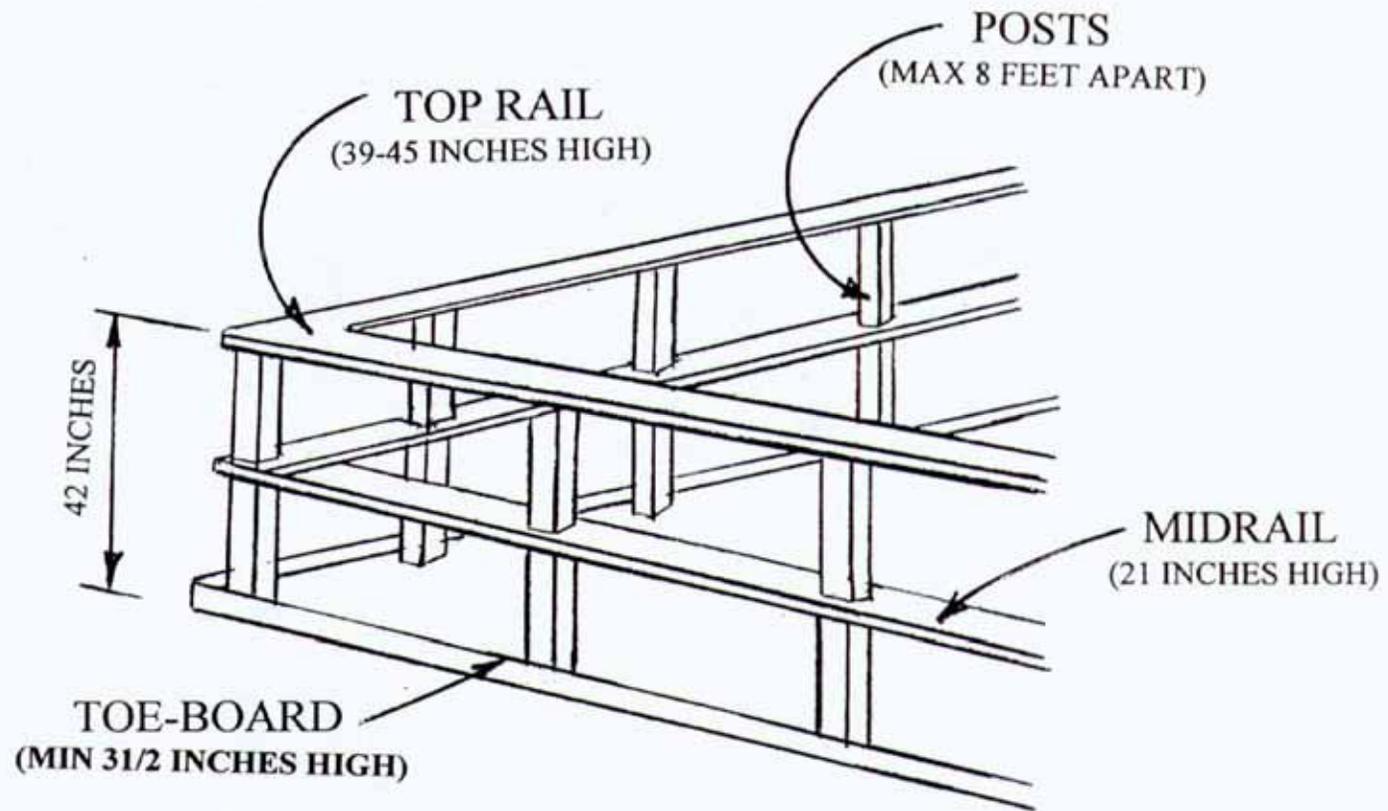
CONUS Fatal Occupational Injuries (BLS)

<u><i>Type of Exposure</i></u>	<u><i>1997</i></u>	<u><i>1998</i></u>
• <i>1. Transportation Incidents</i>	<i>2,599</i>	<i>2,630</i>
• <i>2. Assault & Violent Acts</i>	<i>1,103</i>	<i>960</i>
• <i>3. Contact w/Objects & Equipment</i>	<i>1,034</i>	<i>914</i>
• <i>4. Falls</i>	<i>716</i>	<i>702</i>
• <i>5. Exposure to Harmful Substances</i>	<i>550</i>	<i>572</i>
• <i>6. Fires and Explosions</i>	<i>196</i>	<i>205</i>
• <i>7. Other Events or Exposures</i>	<i>21</i>	<i>16</i>

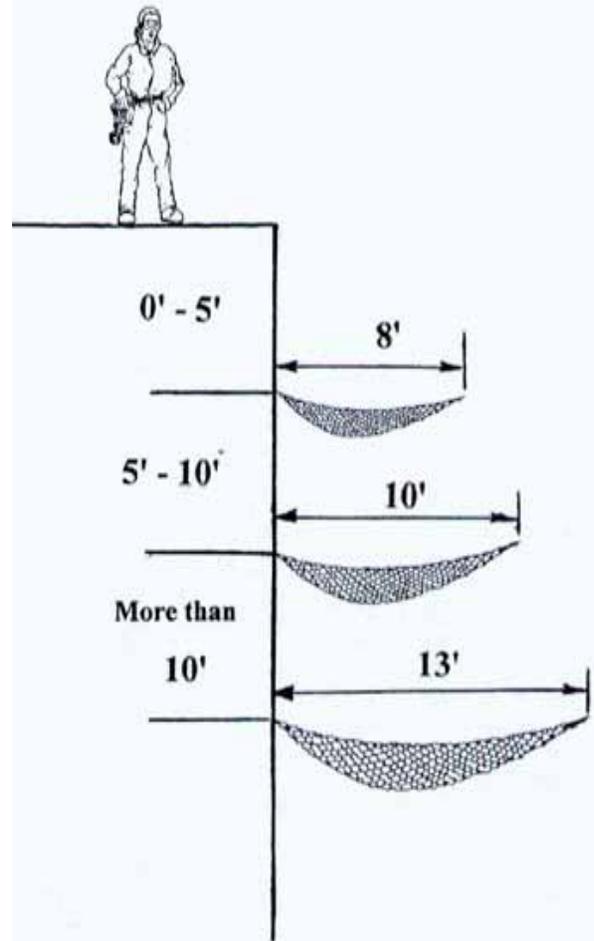
Fall Protection Systems

- *Guard Rails*
- *Safety Nets*
- *Fall Arrest Systems*

Guardrail



Safety Nets

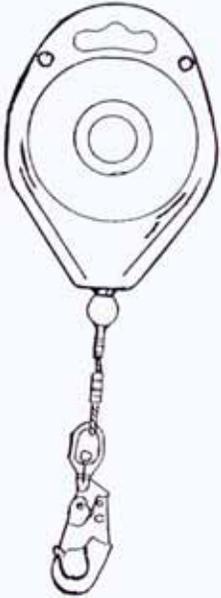


Safety net extension

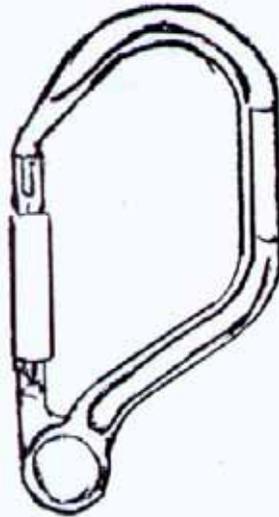
Connecting Means



Shock Absorbing Lanyard



*Self retracting
Lanyard*

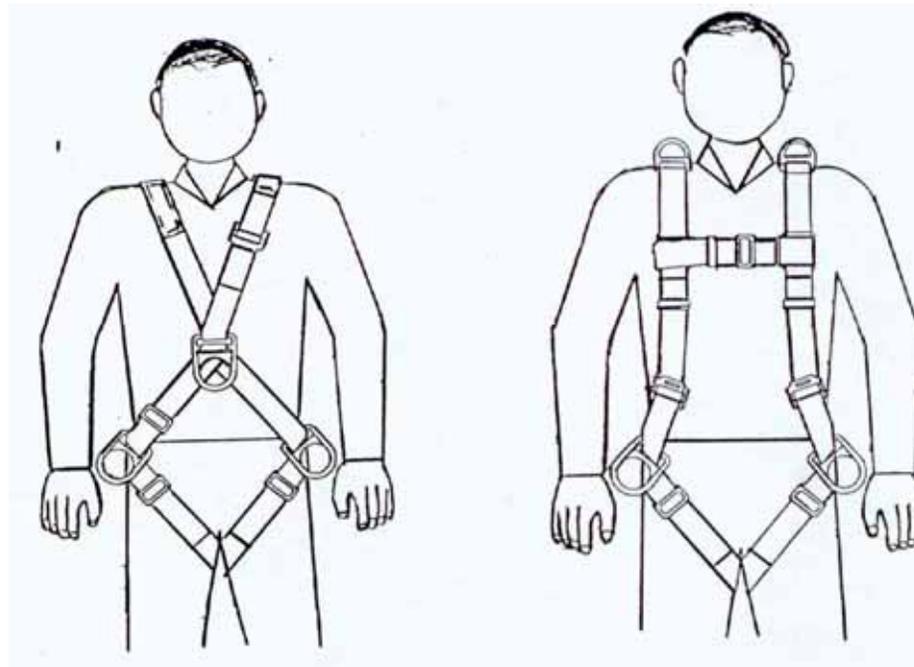


Carabiner



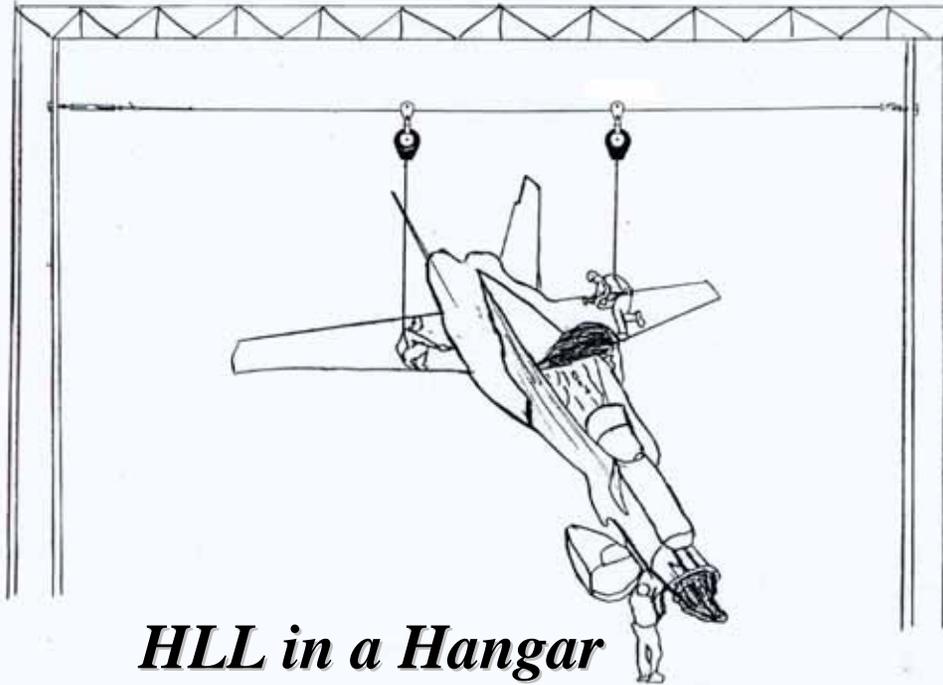
Snap Hook

Body Support



Full Body Harness

Horizontal Lifelines

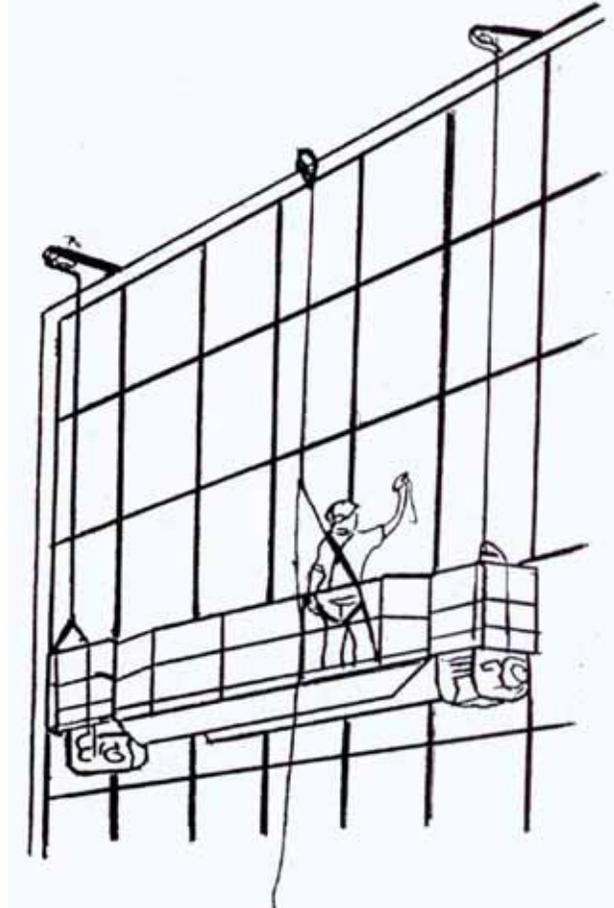


HLL in a Hangar



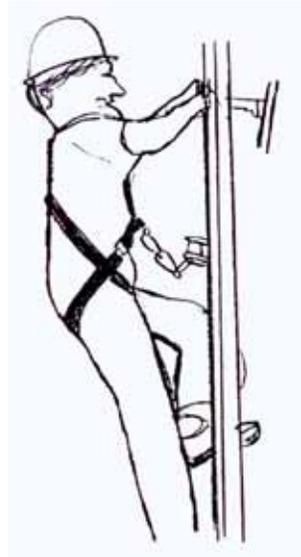
Typical HLL

Vertical Lifelines

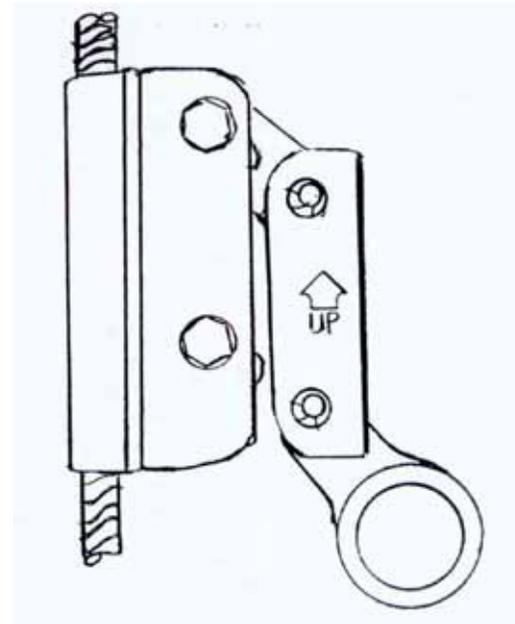


*Suspended
Scaffold
w/Independent
Vertical
Lifeline*

Ladder Climbing Devices

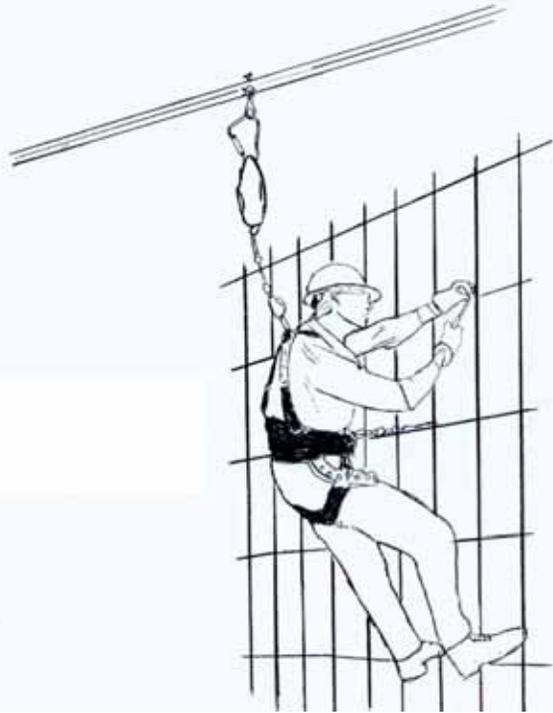


***Ladder Climbing
Device System***



Rope Grab

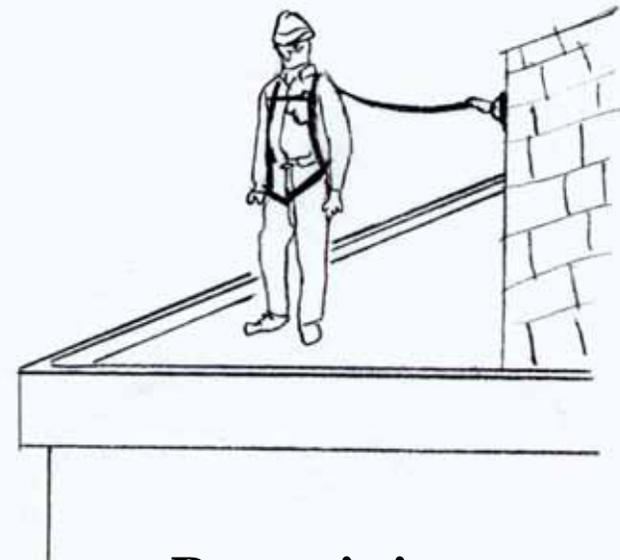
Positioning and Restraining Systems



*Positioning
System
W/Vertical
Lifeline*

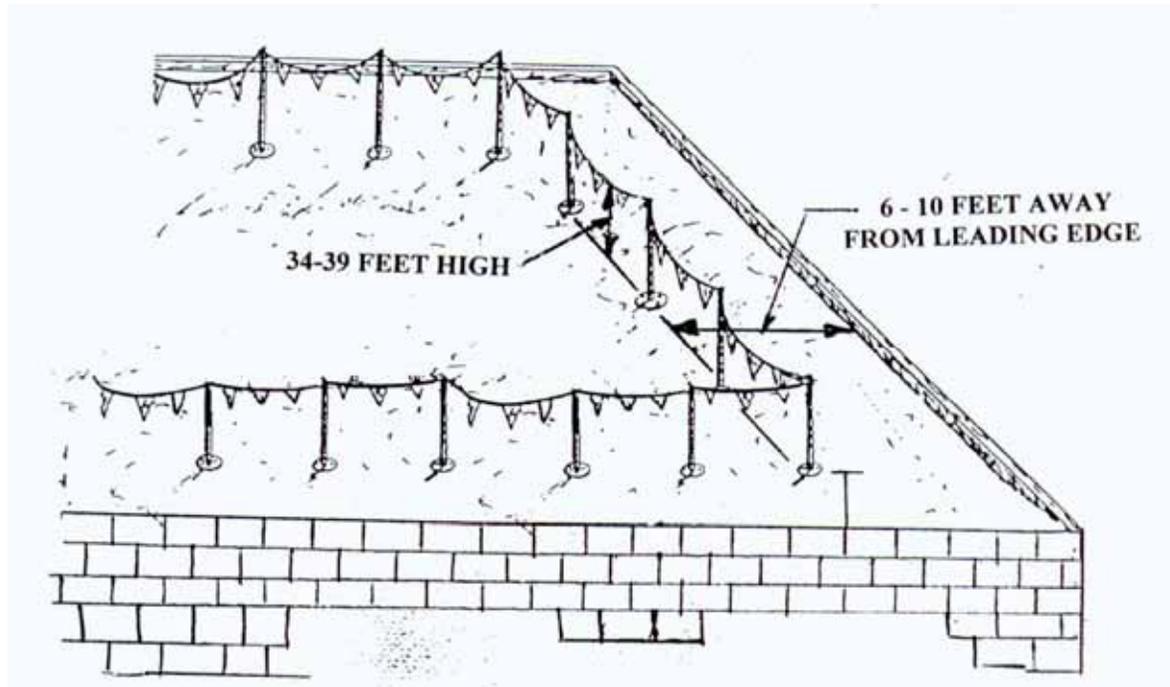


*Positioning
System*



*Restraining
system*

Warning Line System



FP Importance During Planning and Design

Fall Protection Cost Profile

- *Conceptual design* *\$1*
- *Final drawing stage* *\$10*
- *Construction modification* *\$100*
- *Startup & testing* *\$1,000*
- *Maintenance* *\$10,000*