Pilot Decision-making

- Module 5-
Risk Management
Outline

• Definitions
• Goal
• Risk Management Process
• Risk Assessment
• Risk Scoring
• Risk Criteria
• Options
Definitions

• **Hazard**
  – something can cause harm

• **Risk**
  – the probability or likelihood the hazard will cause harm

• **Risk management**
  – reduce likelihood of a hazard from occurring or minimize its consequences
Goal

• The elimination, reduction and/or control of pure risks; or
• The enhancement utility/benefit and avoid detriment from speculative risks.
Risk Management Process

- hazard/threat identification
- analysis/assessment
  - estimation
  - evaluation
  - decision
- risk strategies
  - Terminate
  - Treat
  - Tolerate
  - Transfer

Prevent/control
- engineering
- organizational
- procedural
- behavioral
- PPE
Risk Assessment

\[ R = P \times C \times E \]

Where…

- \( R \) = Risk
- \( P \) = Probability
- \( C \) = Consequence
- \( E \) = Exposure
## Risk Scoring

<table>
<thead>
<tr>
<th>Consequences</th>
<th>Exposure</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = minor injury</td>
<td>1 = rare/never</td>
<td>1 = very unlikely (1 in 10 years)</td>
</tr>
<tr>
<td>2 = serious injury</td>
<td>2 = infrequent (1-3 months)</td>
<td>2 = unlikely (one in 1-5 years)</td>
</tr>
<tr>
<td>3 = major injury</td>
<td>3 = frequently (weekly)</td>
<td>3 = likely (one in next 12 months)</td>
</tr>
<tr>
<td>4 = multiple casualties</td>
<td>4 = high (daily)</td>
<td>4 = very likely (one this moth)</td>
</tr>
<tr>
<td>5 = at least 1 death</td>
<td>5 = constant</td>
<td>5 = inevitable</td>
</tr>
</tbody>
</table>
## Risk Criteria

<table>
<thead>
<tr>
<th>Risk Score</th>
<th>Action required</th>
</tr>
</thead>
<tbody>
<tr>
<td>High – 75 or over</td>
<td>Top priority, action now</td>
</tr>
<tr>
<td>Med – 27-75</td>
<td>Deal with – weeks/months</td>
</tr>
<tr>
<td>Low – below 27</td>
<td>Deal if necessary</td>
</tr>
</tbody>
</table>
Risk Options

- Terminate - risks unacceptable
- Treat - risks acceptable if mitigated
- Transfer - risk acceptable if we share risks
- Tolerate - risk acceptable
Risk Management for Pilots

• Pre-flight yourself
• The “I’m SAFE” Checklist
• Decide ahead
• Apply a general rule
• Aircraft, environment, operation, situation
Risk Management for Pilots (cont’d)

• A matter of probabilities
• Identifying areas of risk
• Leave an “out”