Amtrak Railway Improvement (Terrorism Prevention)

Group 7
Yongqi Teng
Aditya Uday Shankar
Ding Wang
Siqi Wang
Xiaoning Xue
Problem Statement
Process Flow Chart
Organization Chart
Cost of Poor Quality (COPQ)
Brainstorming and Affinity Diagram
Fishbone or Ishikawa Chart
Quality Function Deployment (QFD)
Terrorism is a big threat to the world, inefficiencies in the Amtrak Station security and intelligence can create chaos and our project is to address the dynamic threat keeping abreast with the latest technology and best practices.
Check ticket and ID

have problem

Get New tickets & ID

Machine Security checks

Alarm goes off

Person carries out body checks

Prohibited goods on person

Person Detained and loop closed

Luggage X-Rayed

Suspicious Goods in bag

Open luggage by Security Person

Prohibited Goods Found

Checking for Explosives

Suspicious goods

Permitted
Anti-Terrorism measures fails for these reasons

Baggage checks
- Lack of Employee Concentration
- Lack of Personnel Training
- Glitches in Technology
- Personnel Carelessness
- Inefficient Detection

Body & Health Screening
- Misleading Information
- Health Concerns due to radiation exposure from X-Rays
- Lack of Efficient Equipment
- Inability to Detect airborne diseases

Training of Personnel
- Poor Personnel Attitude
- Poor Training Program
- Insufficient Training Funds
- Lack of Training

Anti-Terrorism Prevention Failure
<table>
<thead>
<tr>
<th>Process</th>
<th>Internal Failures</th>
<th>External Failures</th>
<th>Appraisal</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baggage and carry on checks</td>
<td>Insufficient staff. Arms and weapons. Lack of quality equipment and funding for better machines.</td>
<td>No Prescreening done.</td>
<td>-</td>
<td>Better trained staff and create more funding for larger staff.</td>
</tr>
<tr>
<td>Body screening/frisking</td>
<td>Lack of quality machines for checks and low staff.</td>
<td>No Prescreening done.</td>
<td>Screening.</td>
<td>Investing in good machines and training staff well.</td>
</tr>
<tr>
<td>Personnel Training Practices</td>
<td>Lack of funding lack of good training programs.</td>
<td>Lack of recruitment.</td>
<td>Evaluating all employees involved.</td>
<td>Constantly improve the conditions and incentivise working in AMTRAK.</td>
</tr>
</tbody>
</table>
Brainstorming and Affinity

Training of personnel
- Lack of high level training
- Low investment in training
- Poor security development program
- Lack of retaining

Body & Health Screening
- No efficient equipment
- Poor investment in Health hazard detections
- Health concerns on Radiation
- Need of updated technologies

Customs & Cargo Checks
- Licensing and legal documentation
- Poor security and surveillance
- Obsolete technologies
- Lawsuits and reports
### Quality Function Deployment

<table>
<thead>
<tr>
<th>Engineer Recommendations</th>
<th>Importance</th>
<th>Security Guard</th>
<th>Checking</th>
<th>Staff Travel</th>
<th>Crew Directors</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice of Customers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>A</td>
</tr>
<tr>
<td>Process Education Program</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>C B C A</td>
</tr>
<tr>
<td>Security Check Training</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>B B B A</td>
</tr>
<tr>
<td>Funding Support</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>B B B A</td>
</tr>
<tr>
<td>Advanced Equipment &amp; Software</td>
<td>2</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>B B B A</td>
</tr>
<tr>
<td>Comfortable Environment expertise</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>3</td>
<td>A A A B B</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>B B B A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CTQ Priority Score</th>
<th>39</th>
<th>42</th>
<th>36</th>
<th>36</th>
<th>153</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>0.255</td>
<td>0.275</td>
<td>0.235</td>
<td>0.235</td>
<td>1</td>
</tr>
</tbody>
</table>

**Importance:** 1-Highest  
2-Medium  
3-Lowest  

**Relationship:** 9-Stronger  
6-Medium  
3-Small

- **Positive**  
- **Negative**  

**Relevance:**  
A-Stronger  
B-Medium  
C-Lowest
Thanks