USHST All Hands Webinar
January 20, 2021

Helicopter Accident Data
With Personal/Private Focus

Lee Roskop, FAA

www.ushst.org
U.S. Helicopter 5 Year Average Fatal Accident Rate

Goal: 0.55 by 2025
4 years remaining to reach the goal
U.S. Helicopter
Key Fatal Accident Rate Metrics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal Accident Rate per 100,000 Hours</td>
<td>0.62</td>
<td>0.68</td>
<td>0.64</td>
<td>0.98</td>
<td>0.55</td>
</tr>
</tbody>
</table>
U.S. Helicopter Cumulative Monthly Fatal Accident Count

Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec
1.6  2   3   4   6   8.4  10  12  13  15  17  18.8  19.8

5 yr cumulative fatal acc count, avg 2014-2018
2020 fatal acc count
U.S. Helicopter Single Year Fatality Rates
Fatal Accidents by Industry (Jan-Dec, 2020)

- Personal/Private: 3, 16%
- Aerial Observation: 3, 16%
- Commercial: 1, 5%
- Law Enforcement: 1, 5%
- Aerial Application: 2, 11%
- Utilities Patrol/Construction: 2, 11%
- Instructional/Training: 2, 11%
- Firefighting: 3, 16%
- Business: 1, 5%
- External Load: 1, 5%
Accidents by Industry (Jan-Dec, 2020)

- Personal/Private: 25, 27%
- Aerial Application: 12, 13%
- Instructional/Training: 10, 11%
- Commercial: 6, 6%
- Emergency Medical Services: 7, 8%
- Utilities Patrol/Construction: 7, 8%
- Aerial Observation: 5, 5%
- Business: 5, 5%
- External Load: 5, 5%
- Law Enforcement: 4, 4%
- Firefighting: 4, 4%
- Unknown: 2, 2%
- Air Tour/Sightseeing: 1, 1%
- Logging: 1, 1%
Accidents by Industry, CY2010-2019

- Aerial Application, 17%
- Instructional/Training, 17%
- Law Enforcement, 6%
- Commercial, 5%
- Aerial Observation, 5%
- Utilities Patrol / Construction, 4%
- Air Tour / Sightseeing, 4%
- Personal/Private, 23%
- Electronic News Gathering, 0.4%
- Logging, 0.5%
- Unknown, 0.3%
- Firefighting, 1%
- Business, 3%
- Offshore, 2%
Flight Hours by Industry, CY2010-2019

- Personal/Private, 3%
- Firefighting, 3%
- Utilities
- Patrol/Construction, 4%
- Commercial, 4%
- Business, 4%
- Other, 5%
- Aerial Application, 5%
- Offshore, 8%
- Air Tour (Part 135), 8%
- External Load & Logging, 2%
- Sightseeing (Part 91), 2%
- Aerial Observation, Law Enforcement, ENG, 18%
- Helicopter Air Ambulance, 17%
- Instruction/Training, 16%
Fatal Accident Rate by Industry, CY2010-2019

- Personal/Private: 5.17
- Utilities Patrol/Construction: 1.74
- Aerial Application: 1.38
- Commercial: 1.21
- External Load & Logging: 0.82
- Business: 0.73
- Sightseeing (Part 91): 0.63
- Helicopter Air Ambulance: 0.55
- Aerial Observation, Law Enforcement, ENG: 0.43
- Offshore: 0.3
- Instruction/Training: 0.28
- Air Tour (Part 135): 0.15
- Firefighting: 0.1

≈ 3 times higher than next highest industry.
Accident Rate by Industry, CY2010-2019

<table>
<thead>
<tr>
<th>Industry</th>
<th>Rate per 100,000 Flight Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal/Private</td>
<td>27.62</td>
</tr>
<tr>
<td>Aerial Application</td>
<td>14.37</td>
</tr>
<tr>
<td>External Load &amp; Logging</td>
<td>6.58</td>
</tr>
<tr>
<td>Sightseeing (Part 91)</td>
<td>6.35</td>
</tr>
<tr>
<td>Commercial</td>
<td>4.63</td>
</tr>
<tr>
<td>Instruction/Training</td>
<td>4.6</td>
</tr>
<tr>
<td>Utilities Patrol/Construction</td>
<td>4.58</td>
</tr>
<tr>
<td>Business</td>
<td>3.21</td>
</tr>
<tr>
<td>Aerial Observation, Law Enforcement, ENG</td>
<td>2.51</td>
</tr>
<tr>
<td>Helicopter Air Ambulance</td>
<td>1.86</td>
</tr>
<tr>
<td>Firefighting</td>
<td>1.52</td>
</tr>
<tr>
<td>Offshore</td>
<td>1.22</td>
</tr>
<tr>
<td>Air Tour (Part 135)</td>
<td>0.73</td>
</tr>
</tbody>
</table>

≈ 2 times higher than next highest industry
Occurrence Category Analysis, CY2009-2018
Only Personal/Private Fatal Accidents

- Loss of Control - Inflight: 14
- Unintended Flight In IMC: 8 (50%)
- Abrupt Maneuver: 5
- Struck Object During Low Alt Ops: 3
- Controlled Flight into Terrain: 3
- Medical: 2
- Security Related: 2
- Fuel Related: 2
- Ground Collision: 1
- System Component Failure Non-Powerplant: 1
- System Component Failure Powerplant: 1

Percentage Breakdown:
- Loss of Control - Inflight: 32%
- Unintended Flight In IMC: 61%
- Abrupt Maneuver: 68%
- Struck Object During Low Alt Ops: 75%
- Controlled Flight into Terrain: 80%
- Medical: 84%
- Security Related: 89%
- Fuel Related: 93%
- Ground Collision: 95%
- System Component Failure Non-Powerplant: 98%
- System Component Failure Powerplant: 100%
USHST Helicopter Safety Enhancements (H-SEs) tied to Personal/Private Fatal Accidents

• Outreach
  • 19A: Safety Culture and Professionalism

• Policy
  • 30: Develop/Publish Airman Certification Standards, Rotorcraft-Helicopter

• Technology & Equipment
  • 81: Simulator Modeling for Outside-the-Envelope Flight Conditions
  • 82: Helicopter Flight Data Monitoring

• Training
  • 123: Increased Simulation/Education to Develop Safe Decision Making
  • 127: Training for Recognition/Recovery of Spatial Disorientation
  • 130: Education on Hazards of Over-The-Counter Medication