

A River Runs Through It: Bridge Jumpers in Spokane County, WA

Spokane County Medical Examiner | Sally S. Aiken, MD

- 2017
- "She was dead before she hit the water"
- "Military take-down injuries"
- "Naked, ligature mark, and grab marks"
- Bringing dead bodies to river and dumping them







Monroe Street Bridge, Spokane's Suicide Bridge



SUICIDE BRIDGE: A bridge used frequently to die by suicide, most typically by jumping off (Wikipedia)

Washington Suicide Bridges

- George Washington Memorial Bridge, Seattle (Aurora Bridge)
- 3.9 Jumpers/year



USA Suicide Bridges

- Golden Gate Bridge, San Francisco
- 20 jumpers/year



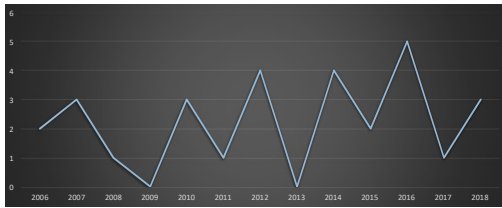
Spokane Bridges 2.4 jumpers/year



Charleston Harbor Bridges, South Carolina, 6 jumpers/year



Bridge Jumpers/year Spokane County
Average = 2.4/year



International Suicide Bridges



- Canada: Bloor Viaduct Toronto, rivaled Golden Gate 500 until 2003 (barrier completed)
- Australia: Westgate Bridge, barrier completed, reduced 85%
- South Africa: Van Stadens Bridge, now has barrier
- South Korea: Mapo Bridge, nicknamed "suicide bridge"



UK Clifton Suspension Bridge: > 500 deaths, halved since 1998: suicide barriers

Why do jumpers choose a "Suicide Bridge"

- "I was attracted to the bridge—an affinity between me, the Golden Gate Bridge and death—there is a kind of form to it, a certain grace and beauty."
- 4/6 said they would not have used any other method or bridge
- One associated the Golden Gate Bridge with entering "golden doors" into a new spiritual realm
- Easy and a sure thing. Notorious fame of the bridge, easy access

Observed Falls from the Golden Gate Bridge: Body Orientation lateral or transverse (Aerospace Medicine V 38, No. 8, 1967

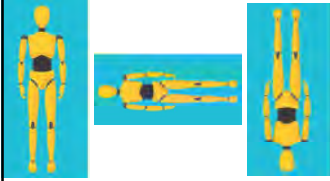


- 85.2% of 169 jumpers had crush injuries to the thoracic cage
- A minority drowned (8), but drowning may have contributed in 25%
- 25 % had skull fractures

Christensen A. The Influence of Behavior on Freefall Injury Patterns: Possible Implications for Forensic Anthropological Investigations. J Forensic Sci 2004;49(1):5-10



Fire truck ladder: 77 degrees, 74 feet

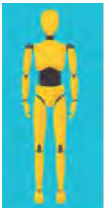


- 3/3 dropped feet first, landed horizontally
- 3/3 dropped horizontally, landed horizontally
- 3/3 dropped head first, landed horizontally

Impact Velocities

Bridge	Height to Water	Impact Velocity	Velocity corrected for drag
Golden Gate Bridge	260-261 feet	87 mph	74-75 mph
Aurora Bridge	164 feet	70 mph	
Charleston Harbor Bridges	155-186 feet	68-74 mph	
Brooklyn Bridge	134-160 feet	62-69 mph	
Monroe Street Bridge	135 feet	63 mph	56 mph

Critical survival velocity striking water



100-116 feet/second
(smaller surface area, longer deceleration)



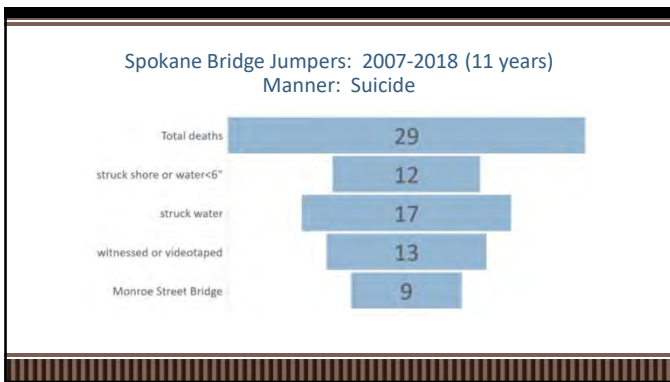
88 feet/second

Acapulco divers: 63 miles/hour



Rib fractures are a common hallmark of bridge jumpers with velocities over 63 mph

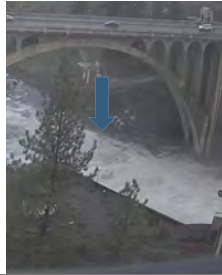
Abel SM, Ramsey S. Patterns of skeletal trauma in suicidal bridge jumpers: A retrospective study from the southeastern United State. For Sci Int 2013;231:399e1-399.e5





Time to Discovery of 13 Witnessed/video-recorded jumpers

- Time to discovery of the body ranged from immediate to 10 days. Most found within hours
- 2 jumped after dark, both found the next day
- 2 found close to the bridge. 11 were 40-6,000 yards from bridge
- Poor correlation between river flow volume (cubic feet/sec) and both time to discovery, and distance of travel
- River has currents, eddies, debris, obstacles



INJURIES IN BRIDGE JUMPERS LANDING IN WATER

- | | |
|---|--|
| <p>Golden Gate Bridge
(J of Trauma;21:612)</p> <ul style="list-style-type: none"> • 87% Chest organ injuries • 84% abdominal injuries • 14% extremity fractures • 77% multiple trauma • No skull fractures, 24% SAH • 12% drowning as cause of death | <p>Charleston Harbor Bridges
(For Sci Int 2013; 231)</p> <ul style="list-style-type: none"> • 87% trauma to chest or abdomen • 15-18 % extremity fractures • 56% multiple trauma • 30% head or face trauma • 67% drowned |
|---|--|

13 witnessed/videotaped jumpers Spokane

- 13/13 jumpers had injuries
- 8/13 or 61% had rib fractures
- 7/9 (78%) who jumped from Monroe street bridge had rib fractures, lung contusions common
- One extremity fracture, two with spine fractures
- Skin contusions frequent
- Drowning caused or contributed in 100%
- Hypothermia



Sally S. Aiken MD

Former Career Lifeguard



Loss of Clothing in witnessed/videotaped Spokane bridge jumpers landing in water



- 6/13 had loss of clothing
- 2 others had extensively torn pants
- One who lost clothing from the upper body, had pants down around ankles
- One lost all clothing
- In some witnessed jumps, clothing re-surfaced before jumper



Bridge jumpers into Water, Spokane County



- Humans in free fall land horizontally
- Impact velocity is 63 miles per hour, injury is expected
- Most injuries are to the torso (horizontal impact)
- Drowning is common, partly due to incapacitation from injuries
- Clothing loss is not alarming



Answer:
NO
