

# Lightning Safety



# Background in Australia

- Since 1803      5-10 deaths per year (x10 injuries)
- 70-90% survivors serious long term disability.
- 20% strikes are during recreational activities  
water sports, golf, cricket
- Cricket fatalities 1901, 24,25, 41 and 2004

# Background

**Lee Trevino 1975**

**Ted Dexter 1978**

**Miami 1995 10 injured “bolt from the blue”**

**Nowra 2004 1 dead** Several injured

**Merv Dillon & Fernix Thomas Oct 2003 Red Stripe Cup game Jamaica**

**England and USA 2009**



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## Lightning bolt kills batsman

By Marnie O'Neill and Danielle Teutsch  
January 25, 2004  
The Sun-Herald

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A lightning bolt killed a batsman during a game of cricket yesterday, the shock of electricity so intense it shattered his bat.

Fellow players watched in horror as the lightning struck 31-year-old David Evans on his helmet in a game at Bomaderry on the South Coast.

Bomaderry Cricket Club secretary Graeme Sawkins said: "It wasn't even stormy at the time. We all said before the game started that if it was stormy then we'd stop play, but it was quite clear.

"David got up to bat and suddenly, out of the blue, a lightning bolt came down and hit his helmet, went through his body and shattered his bat.

"It left a hole in the ground next to the wicket where he was standing. Six or seven other players got knocked down with the impact."


Two fielders, including a 13-year-old boy, were injured.

Two women were injured after they were struck by another bolt nearby.

The first bolt struck at Artie Smith Oval in Bomaderry about 5.30pm, killing Mr Evans and injuring the fielders.

Mr Sawkins's son Matt, who was playing a game on the ground below the oval, saw the bolt of lightning that struck Mr Evans.

"There were storms all afternoon. It was the first bolt of lightning," he said. "His cricket bat exploded. He was about to take strike."




David Evans in a photograph taken on January 25, 2004. Photo: Wayne Venables

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# SMH 25 Jan 2004

# The 30-30 Rule



See

**30 seconds**

then hear



**IMMEDIATELY** get **EVERYONE OFF** for  
minimum of **30 minutes**

# Clock reset: 30 sec gap or less

<u>Time</u>	<u>Gap</u>	<u>Return to Field?</u>
1.45pm	45 seconds	Keep watching, play on, covers nearby
1.55pm	39 seconds	Keep watching, play on, covers nearby
2.00pm	29 seconds	Immediately off till 2.30pm
2.05pm	25 seconds	<b>RESET</b> the clock , Off till 2.35pm
2.10pm	45 seconds	Storm going, Off till 2.35pm
2.25pm	35 seconds	Off till 2.35pm, fix covers, stumps
2.35pm	50 seconds	Play restarts

In the Premier Cricket (Grade) Handbook 2015-16 p36

[http://premier.qld.cricket.com.au/files/12832/files/  
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### 3.9 Suspension of Play in Dangerous or Unreasonable Conditions

The following shall apply in addition to Law 3.9:

[30/30 Rule] If thunder follows a lightning flash by thirty (30) seconds or less, play must cease immediately.

Players and officials must leave the field immediately and must not return until thirty (30) minutes after the initial lightning flash. If during the suspension of play thunder follows a lightning flash by thirty (30) seconds or less, the thirty (30) minute suspension period is to recommence.

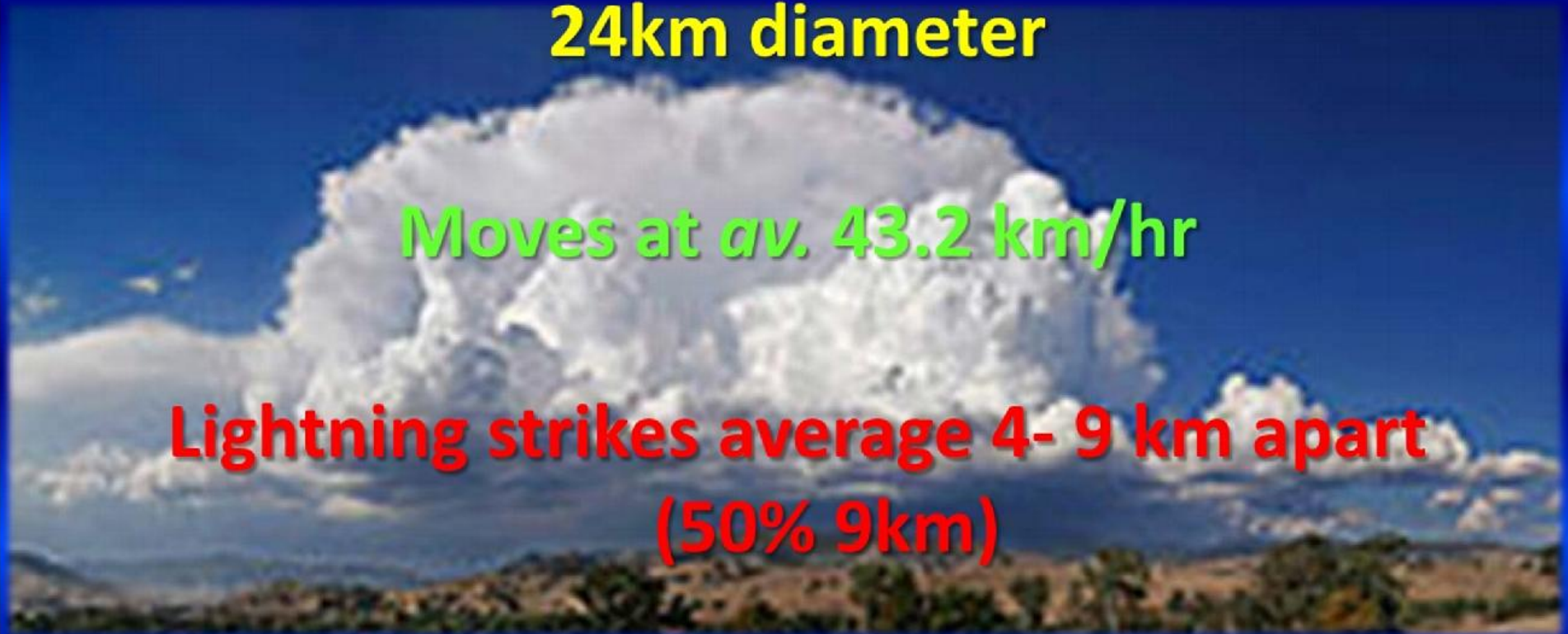


# Storm factors: The “Average Storm”

24km diameter

Moves at *av.* 43.2 km/hr

Lightning strikes average 4- 9 km apart  
(50% 9km)





## Last average

## 30-60 minutes

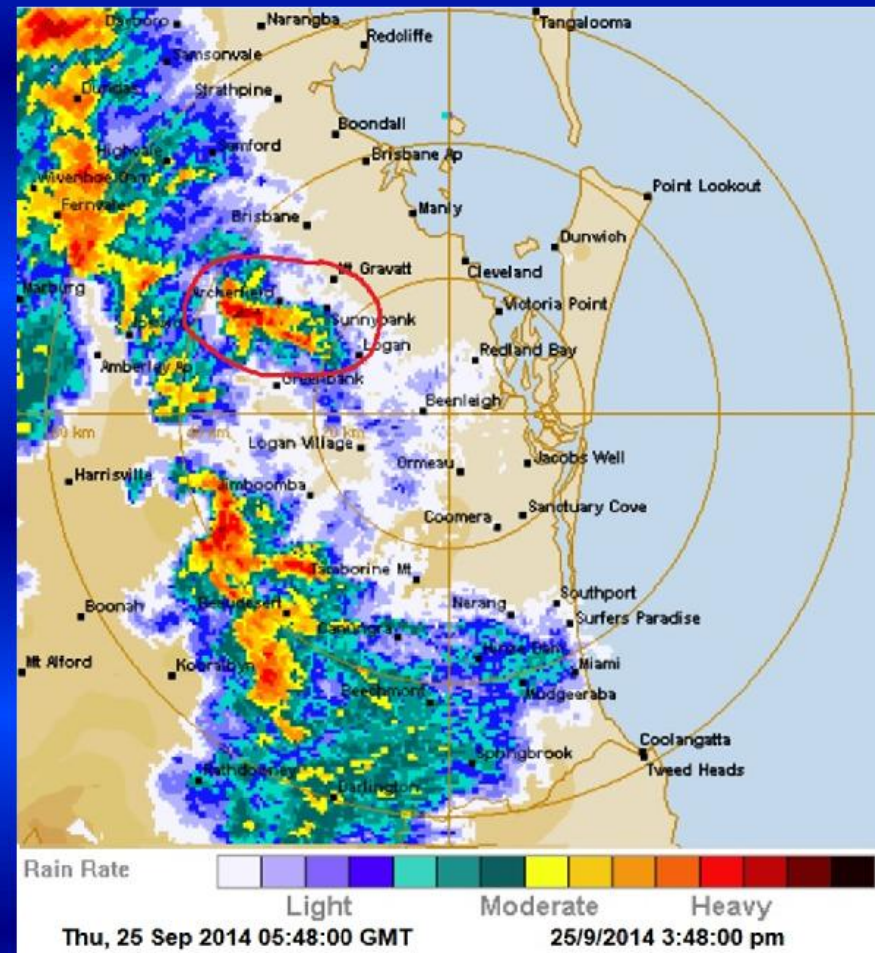
# Flash Bang Gap

**3 seconds = 1km**

# 10km is the danger zone for lightning

**So 30 seconds is about  
10km distance**

## Often storms in Brisbane come in groups



# A Lightning Strike

- |                  |                     |
|------------------|---------------------|
| 1. Direct hit    | 3-5%; usually fatal |
| 2. Contact       | 20%                 |
| 3. Side splash   | Trees etc. 40%      |
| 4. Ground Strike | 35%                 |
| 5. Blast effect  |                     |



# A Lightning Strike; Blast Effects





# A Lightning Strike Direct hit, side splash

**First Aid measures**  
**CPR etc**



# A Lightning Strike; Contact



**Especially metal !!**



# A Lightning Strike; Ground strike

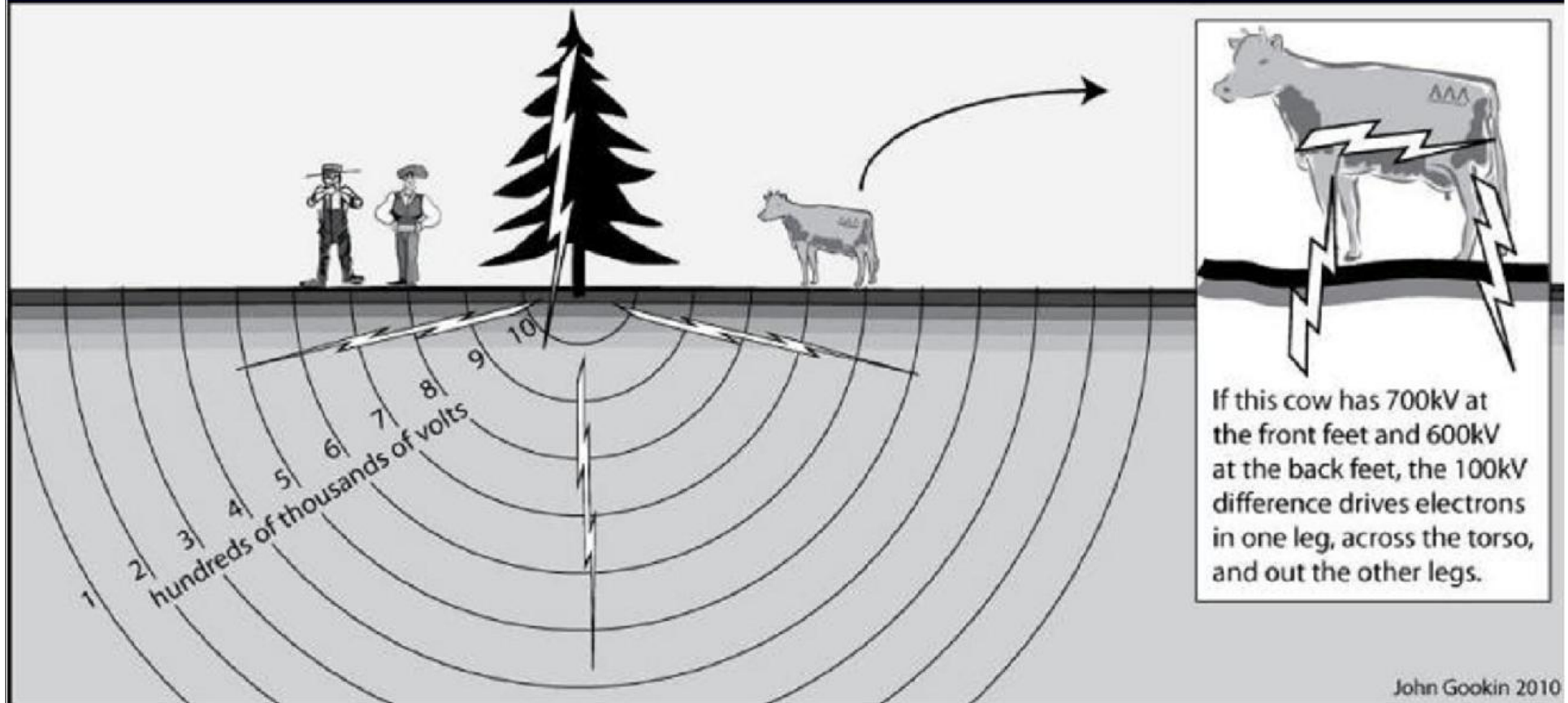


Fig. 3: **Ground current** causes roughly half of all lightning injuries to humans. The difference in voltage between one foot and the other drives current through us. In this simplified illustration the cow has a 100kV (100,000 volts) differential, one farmer has a 50kV differential, and the other farmer has her feet together so her voltage difference is close to zero. See Uman's book (2008, ch.5) for a more precise representation of ground current distribution.



# “Lightning Position”

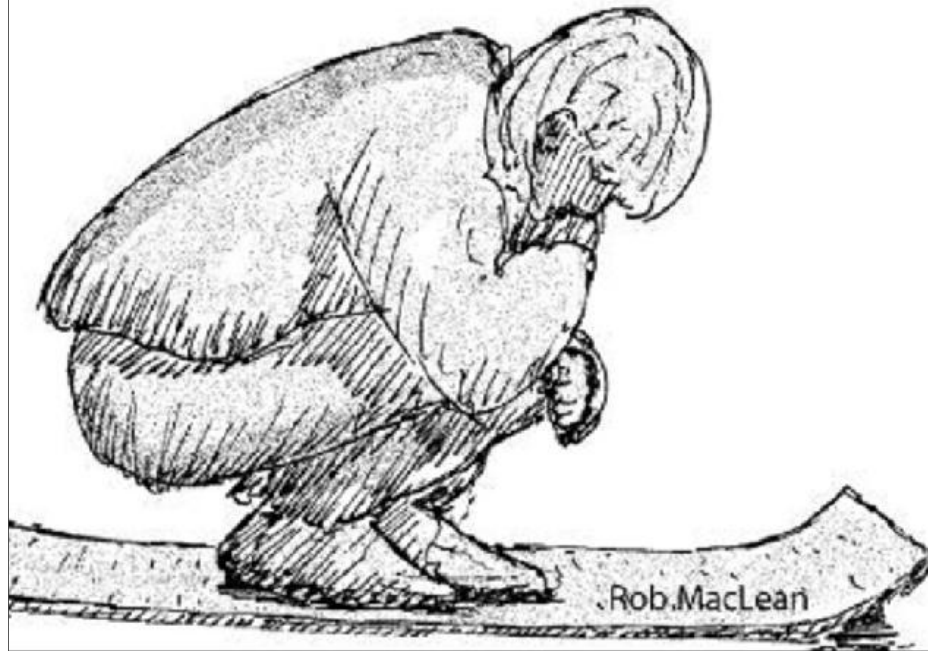


Fig. 8: **the lightning position** is for waiting out storms in stationary situations when it is impractical to move to a safer location.

- 1) **Put your feet together** to *significantly* reduce the effects of ground current which causes about half of lightning fatalities.
- 2) **Crouch** to *slightly* reduce the effects of side flash and upward leaders which together cause ~40% of lightning fatalities.
- 3) **Don't touch** long conductors to avoid contact voltage which causes ~20% of lightning fatalities.

# Lightning DO s

- **Get INSIDE A BUILDING OR CAR**
- **Do not touch metal**
- **Stay away from power lines, metal fences, pipes**
- **If caught in open**
  1. **Remove metal sprigs**
  2. **Squat in hollow**
  3. **Minimise ground contact**

# Lightning DONTs

- Shelter under a tree
- Shelter in an open pavilion
- Have a bath or shower
- Use a landline phone

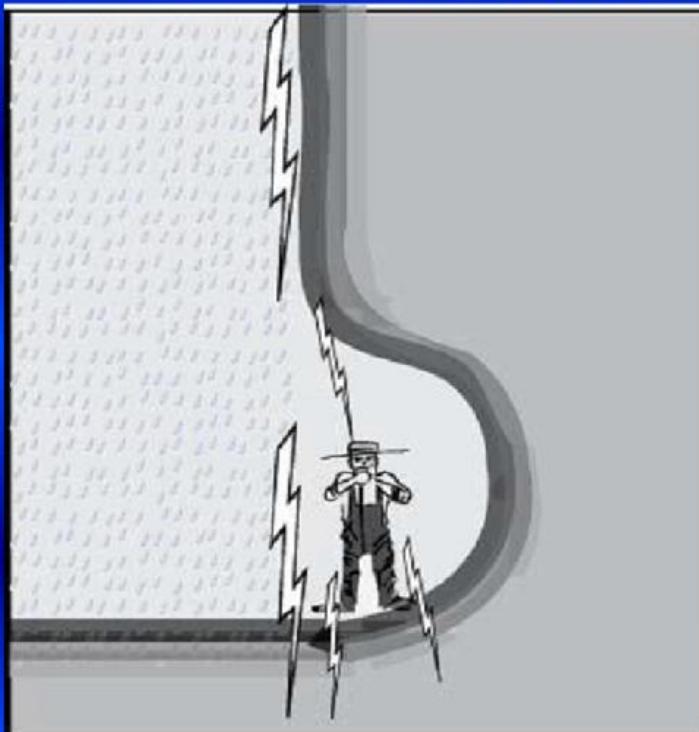


Fig.6: Rock shelters, cave entrances, and overhangs are especially hazardous because lightning travels along vertical surfaces to seek the ground. When lightning needs to jump a gap, any object bridging that gap can help conduct the current. Standing near the edge of an overhang is extremely dangerous during a thunderstorm. This even includes standing on the porch of a building where you could help conduct current across the open gap.



# The 30-30 Rule



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**30 seconds**

then hear



**IMMEDIATELY** get **EVERYONE OFF** for  
minimum of **30 minutes**

**Common Sense prevails??**

**Be prepared; are storms predicted?**

**Tell the Captains and ground officials the  
plan**

**Have covers ready to go.**

**4- 10 minute window**

**Common Sense prevails??**

**NOT just an umpire's responsibility**

**ANYONE can/should make the call!**

**ONE OUT ALL OUT**

**DON'T ARGUE THE TOSS**



# Common sense

Most people are hit either

i) Early in the storm

“it’s not here yet”

Yes, it is!

ii) Late in the storm

“it’s gone now”

No, it isn’t!

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