

United States Version
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Unclassified



Lightning Safety For Kids

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Purpose

Teach Lightning Safety





Overview

- **LIGHTNING -- SIGNIFICANT HAZARD!**
- **LIGHTNING SAFETY PROCEDURES**



More Education
Needed!



Lightning -- Significant Hazard

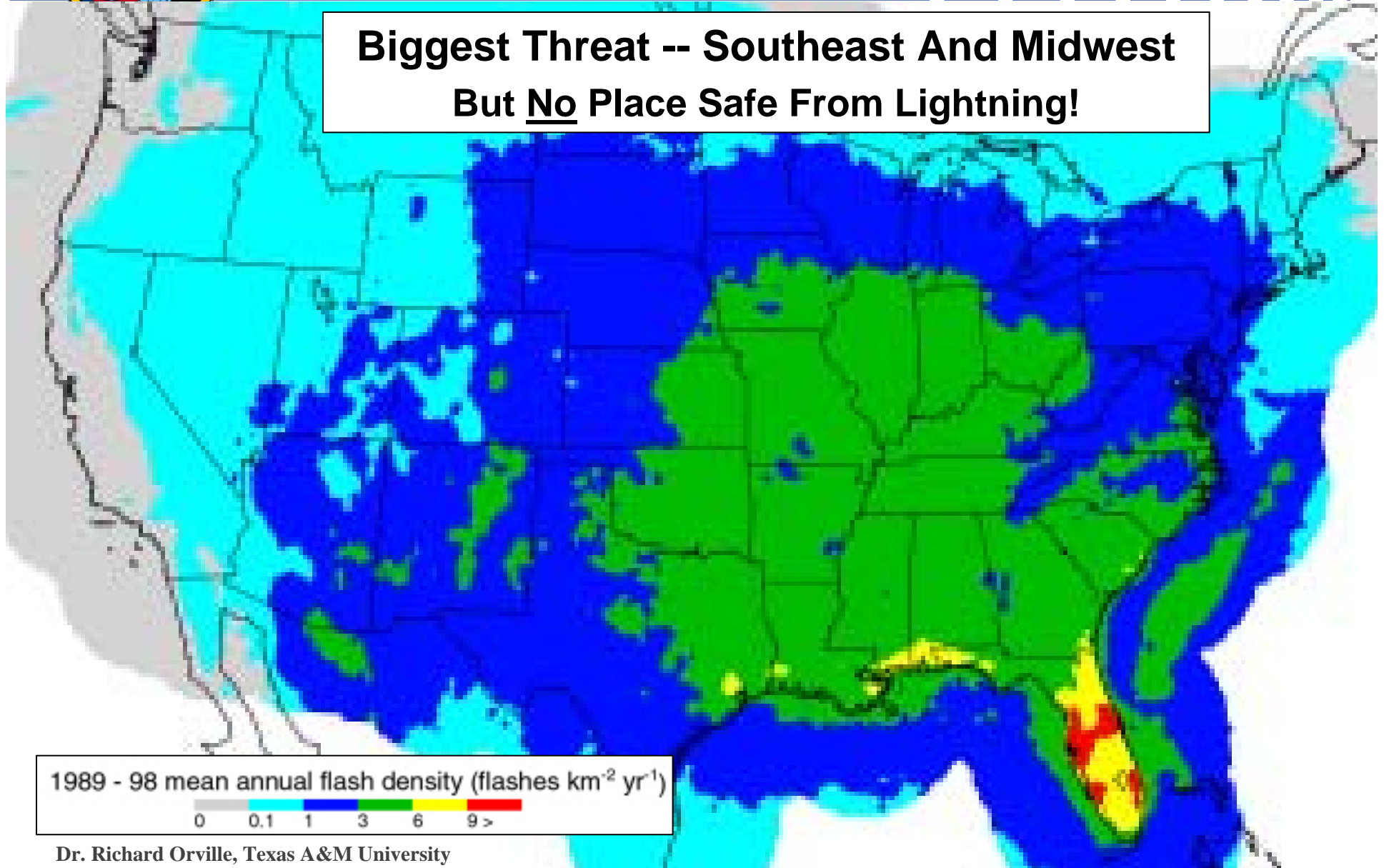
- **LIGHTNING: The Underrated Weather Hazard!**
 - **2nd Leading Cause Of Storm Deaths In U.S. (~ 100 / Year)**
 - **More Than Hurricanes And Tornadoes Combined!**
 - **Injures ~ 1,000 / Year In U.S.**
 - **Often Severe Life-Long Crippling Injuries**
 - **Lightning Causes \$5 Billion In Damage Each Yearly In U.S.**
 - **Yet Lightning Safety Receives Surprisingly Little Attention!**





Florida Lightning Threat

**Biggest Threat -- Southeast And Midwest
But No Place Safe From Lightning!**

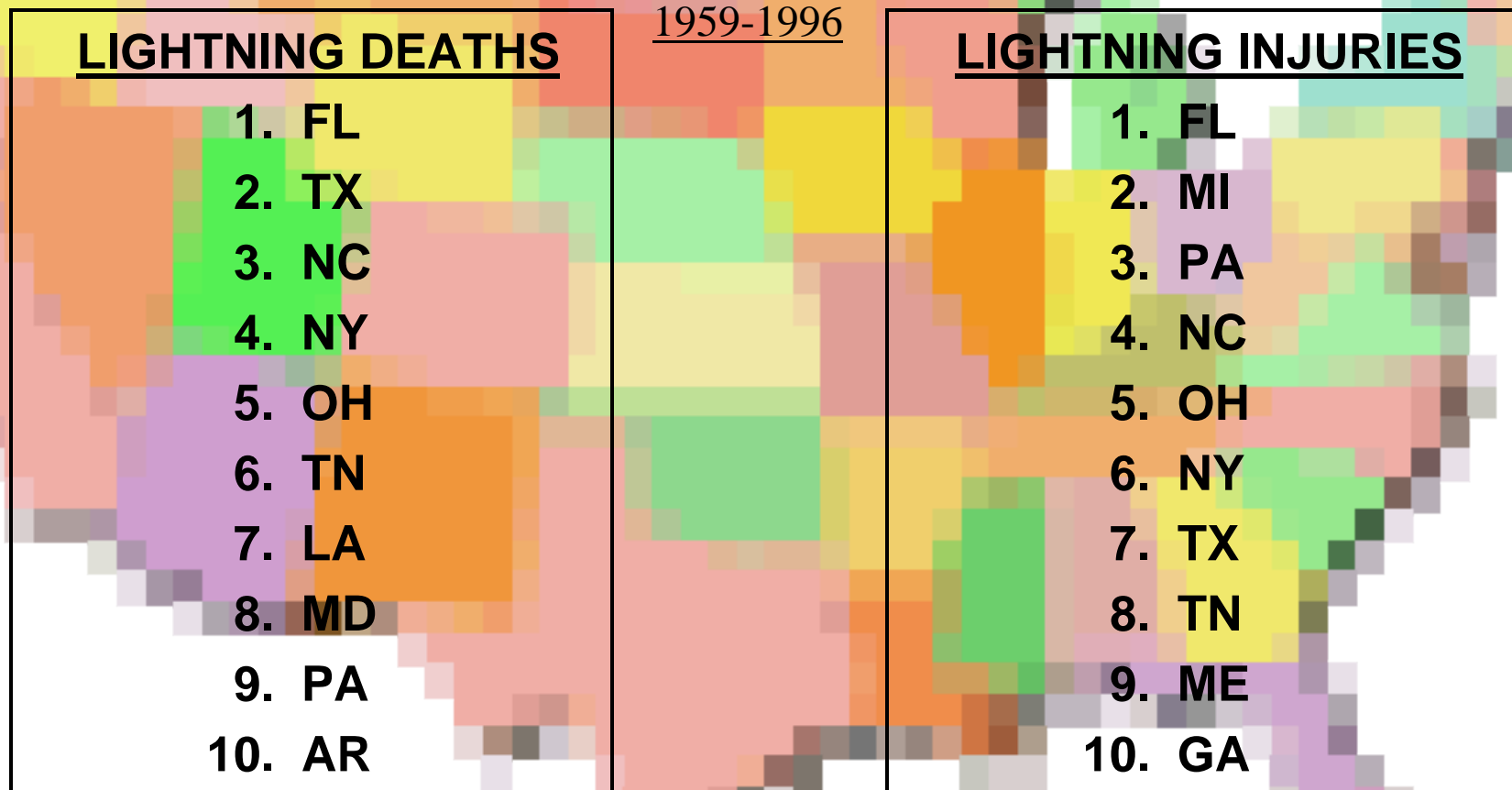


Dr. Richard Orville, Texas A&M University



Lightning Impacts (con't.)

Top States For Lightning Deaths And Casualties



Some States Larger In Area And Population. Beware Reporting Biases.



Lightning Safety Procedures

- **Lightning Safety Group Recommendations**





Lightning Safety Procedures (con't.)

***No Place Outside Is Safe
Near A Thunderstorm!***





Lightning Safety Procedures (con't.)

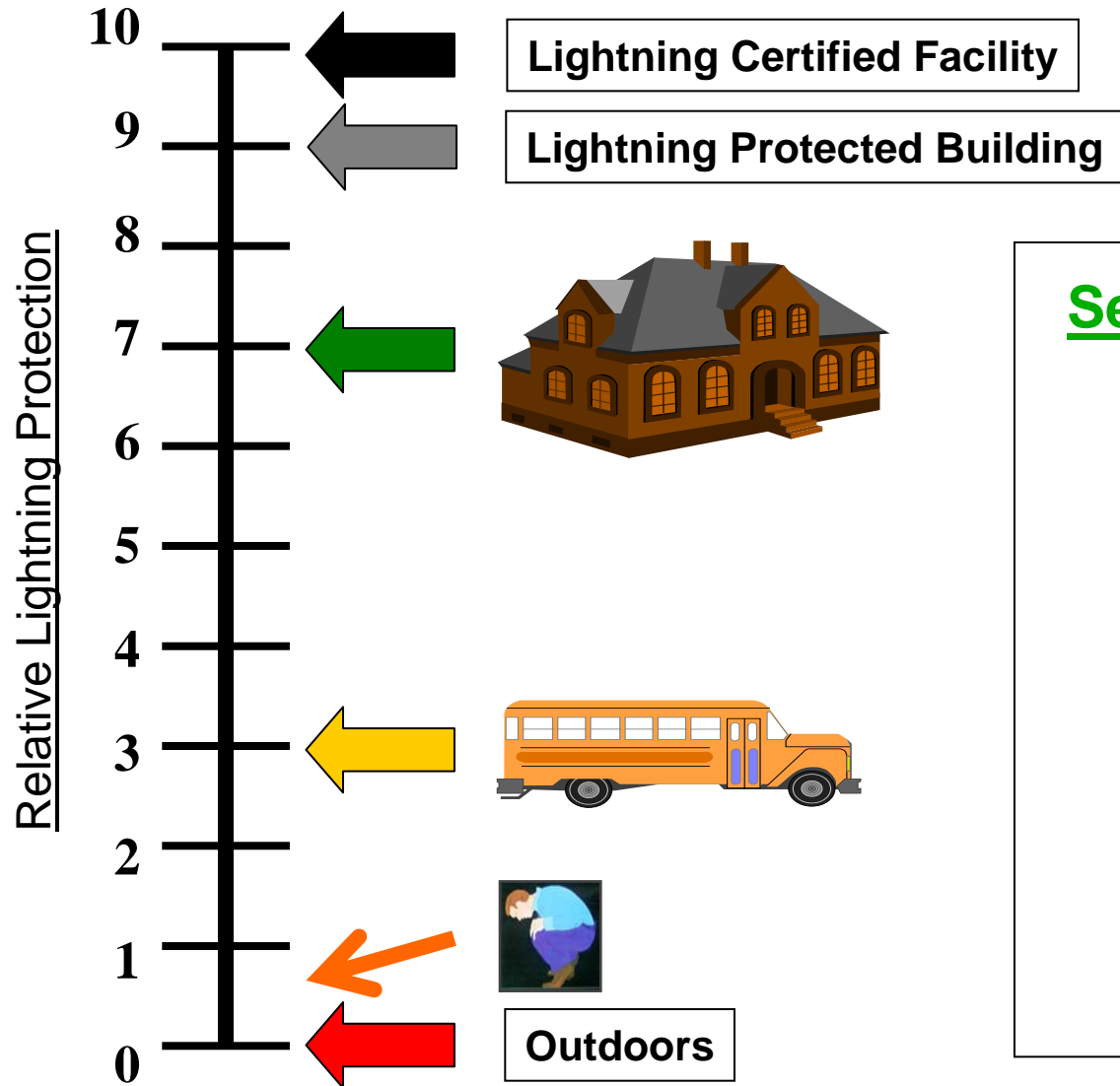
- **Lightning Can Strike Long Distances! Even Outside The Rain!**
- **If You Can Hear Thunder, Seek Shelter!**



"Bolt From The Blue"



Lightning Safety Procedures (con't.)



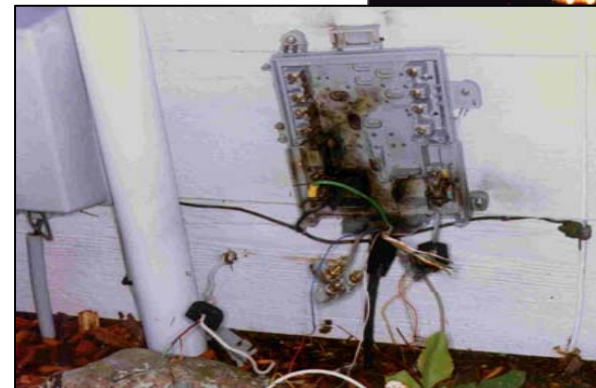
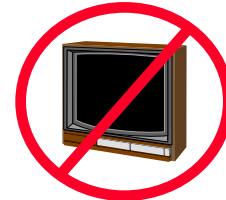
Seek Proper Shelter

- Buildings Much Better Than Vehicles
 - Large, Fully Enclosed, Substantially Built
- Vehicles Offer Some Safety
- No Place Outside Is Safe Near A Thunderstorm
 - Near \equiv 6 Miles



Lightning Safety Procedures (con't.)

- **Once In Proper Shelter, Avoid Conducting Paths To Outside**
 - Telephone (corded)
 - Electrical Appliances / Wiring
 - TVs, VCRs, And TV Cables
 - Computers
 - Light Switches
 - Electrical Outlets
 - Plumbing
 - Showers
 - Sinks
 - Rest Rooms
 - Pools (indoors too)
 - Don't Watch Lightning From Windows / Doorways
 - Indoor Rooms Are Better





Lightning Safety Procedures (con't.)

• Unsafe Locations

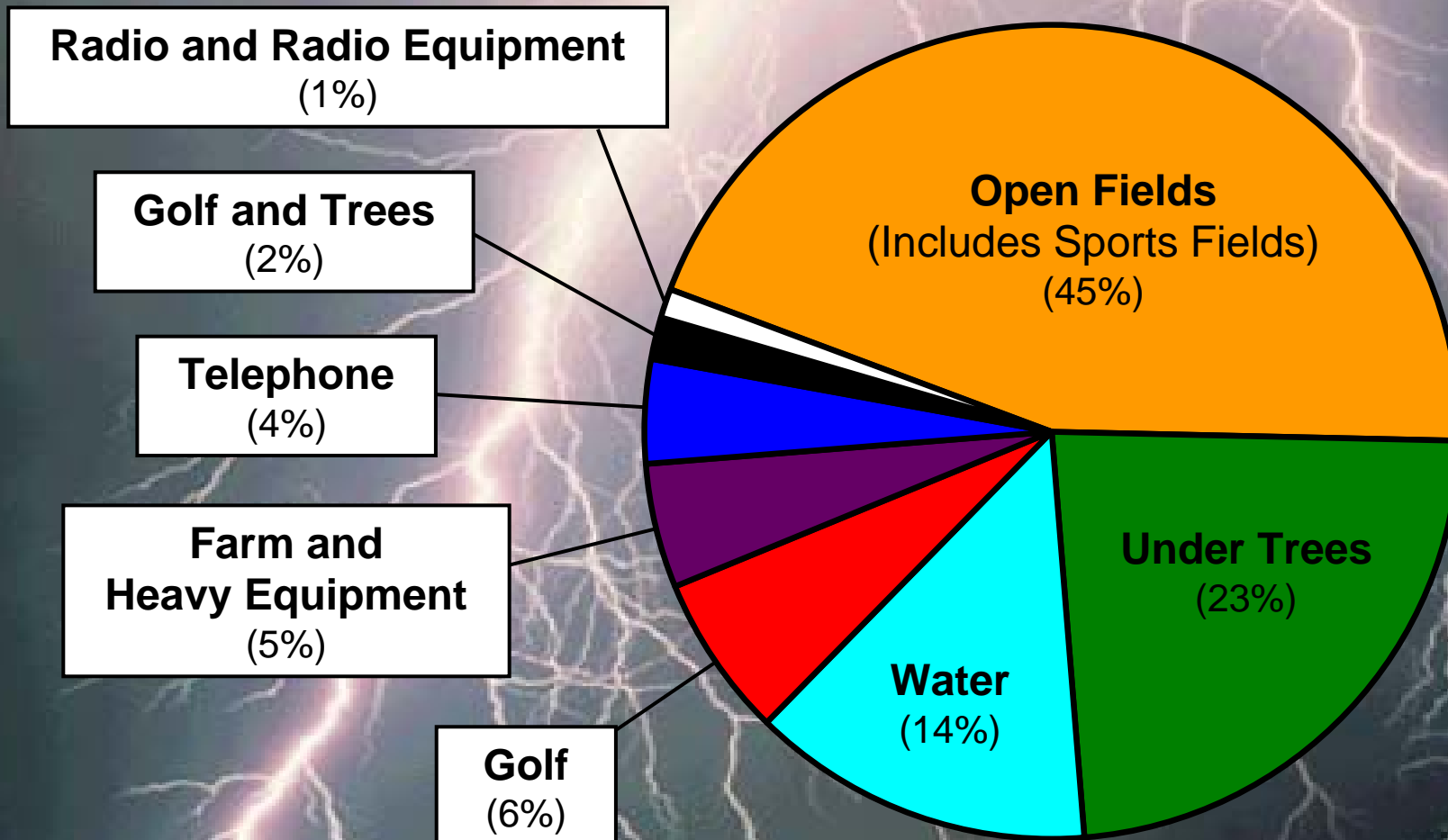
- High Places / Open Fields
- Isolated Trees
- Towers / Poles
(Light Poles, Flag Poles,
Telephone Poles, Etc.)
- Unprotected Pavilions,
Rain / Picnic Shelters
- Baseball Dugouts
- Convertible Cars
- Golf Carts
- Water (Swimming Pool, Ocean, Lake, Rivers, Etc.)
 - Indoor / Outdoor Pools
- Bleachers (Metal Or Wood)
- Metal Fences / Structures





Lightning Impacts (con't.)

**When Thunderstorms Nearby, Avoid These Activities
Like Your Life Depends On It -- It Does!**



Lightning Casualties In U.S. (1959-1994)
(National Severe Storms Laboratory)



Lightning Safety Procedures (con't.)

If You Can Hear Thunder, Seek Shelter!

- **Avoid Wide Open Areas**
 - **Sports Fields**
 - **Playgrounds**
 - **Parking Lots**
 - **Beaches**
 - **Others**



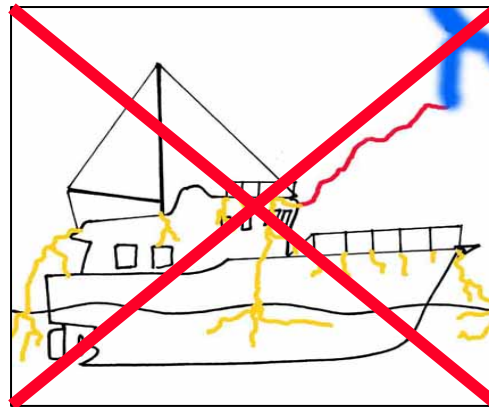


Lightning Safety Procedures (con't.)

If You Can Hear Thunder, Seek Shelter!

- **Avoid Water Activities**

- **Swimming**
- **Boating**
- **Beaches**
 - **Doubly Dangerous!**
- **Fishing**
- **Others**





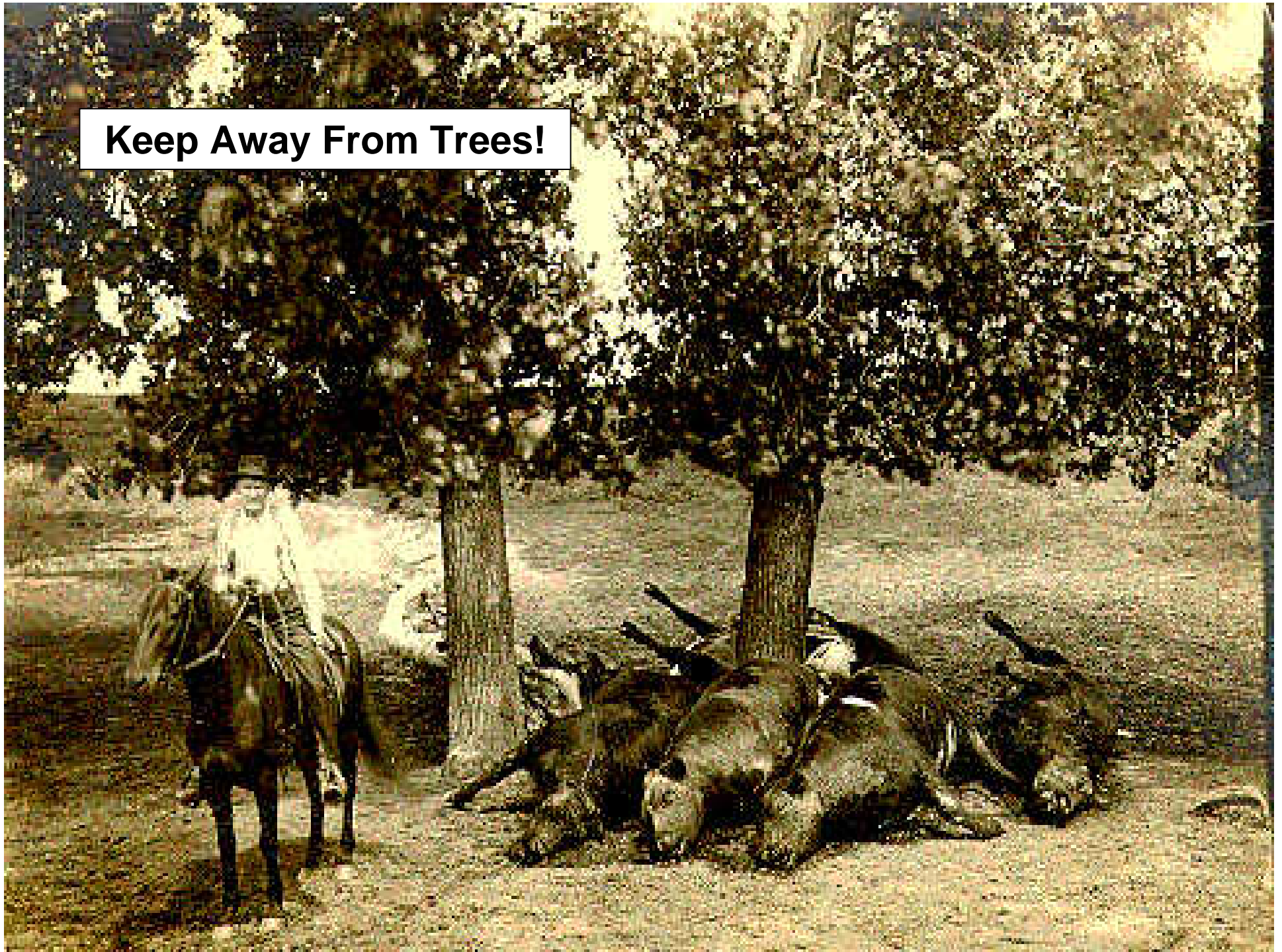
Lightning Safety Procedures (con't.)

If You Can Hear Thunder, Seek Shelter!

- Avoid Trees!
 - Do NOT Go Under Trees To Keep Dry!



Keep Away From Trees!

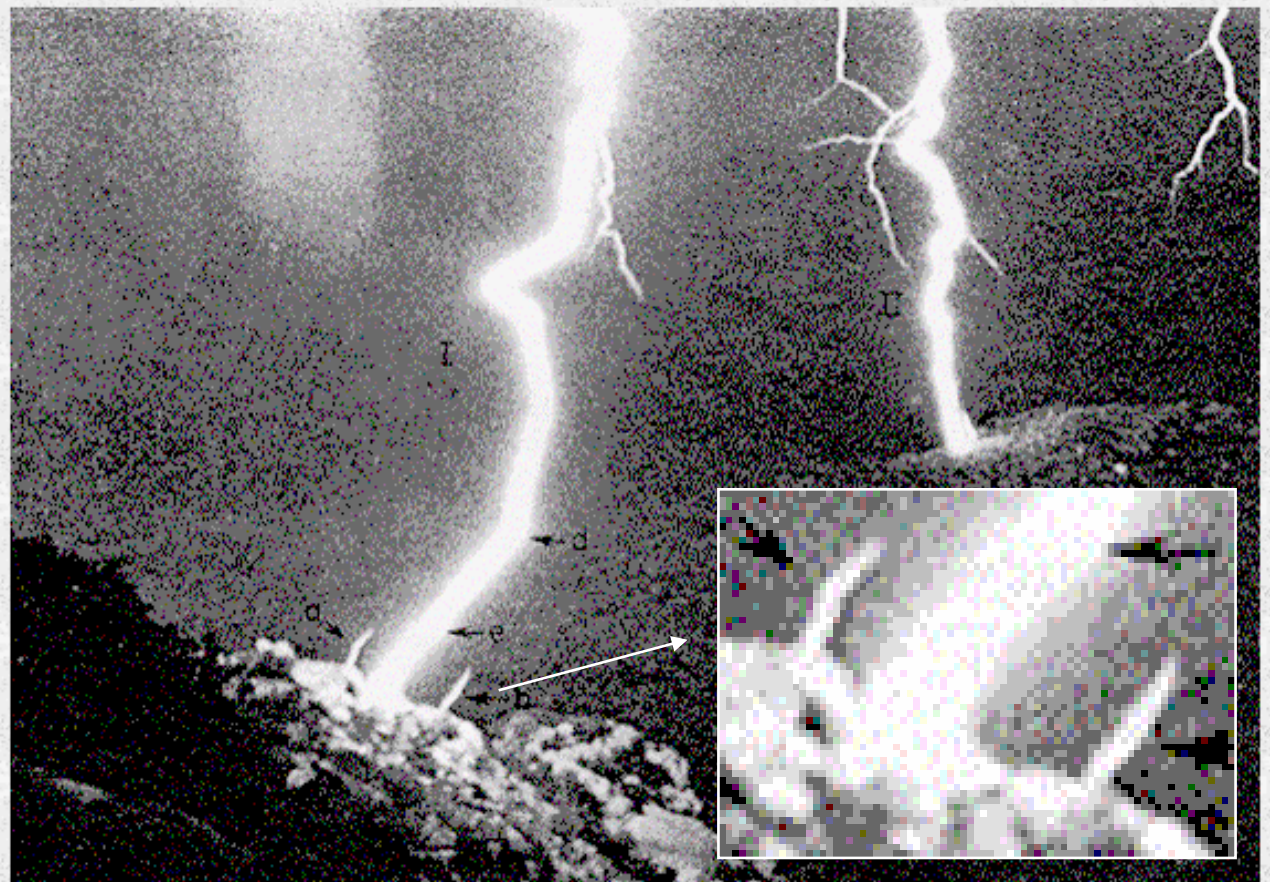




Keep Away From Trees!



Keep Away From Trees!



Photograph of upward streamers near strike points of two flashes in mountainous terrain. Point d: striking distance; e: junction between the connecting discharge and the leader; a, b, and c: upward discharges that did not contact the leader (Krider and Ladd, 1975).

Keep Away From Trees!



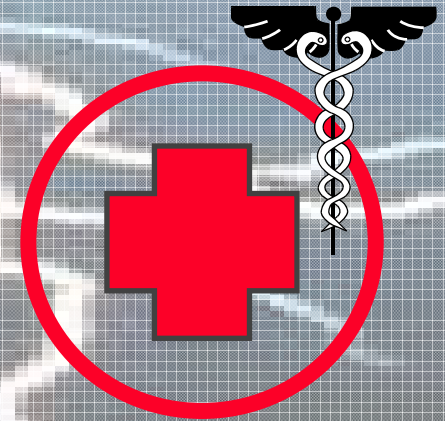
Lightning Safety Procedures (con't.)

- **First Aid For Lightning**

- **Call 911**

- **Apply CPR / Mouth To Mouth Resuscitation**

- **All Deaths From Stopped Heart / Stopped Breathing**





Lightning Safety Procedures (con't.)



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Summary

If You Can Hear Thunder, Seek Shelter!

- **Lightning Is Extremely Significant Hazard, Especially In Southeast And Midwest, But Far Too Often Underrated**
- **Lightning Safety Group Recommendations Can Help Improve Your Lightning Safety**
- **'Go Inside' -- Now How Tough Is That?**



Lightning: A deadly killer

Review

In the USA, lightning is the second biggest weather killer next to floods, claiming an average of 85 lives a year. Most victims are struck in the open, such as on beaches or golf courses, or when they take shelter from the rain under a tree. Floods kill an average of 136 people a year.

Staying out of lightning's path

1 If you're outdoors, seek a safe place at the first flash of lightning or crack of thunder.

2 Never take shelter under a tree.

3 Cars offer some safety. When lightning strikes a car, it flows through the metal shell and jumps from the wheels to the ground, sometimes blowing out tires.

If You Can Hear Thunder, Seek Shelter!

4 Buildings offer the most safety, but lightning can reach inside to kill.

5 If it strikes a house lightning can flow through plumbing or electric and telephone wires.

6 People have been killed while taking a bath or shower or while talking on the phone.



Lightning Safety

- **Questions?**
- **www.patrick.af.mil/45og/45ws/LightningSafety/index.htm**
- **For Lightning Safety Briefings, Call . . .**

- **William P. Roeder**
- **william.roeder@patrick.af.mil**
- **(321) 853-8410, DSN 467-8410**

If You Can Hear Thunder, Seek Shelter!