



Thunderstorm Risk Assessment

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Introduction

This guidance has been provided to assist the Safety Officer in deciding whether or not a game should be delayed or suspended in the event of a thunderstorm. The decision should be made with regard to the safety of players, officials and spectators.

Pre Match Planning

The likelihood of thunderstorms occurring should be considered as part of pre match planning. Check the weather forecast a few days in advance as they are readily available for several days ahead on many web sites including the Met Office (www.metoffice.gov.uk/weather/forecast). A further review of the weather should take place on the day of the match.

Consultation and Communication

If pre match planning identifies the probability of thunderstorms occurring consultation must take place with match officials (referee and EFL/FA) and agreement made with regard to delaying the kick off or suspending the match. Ultimately the Match Referee will make the decision to delay or suspend a match.

The possibility of thunderstorms should be included in the match day pre match briefing along with probable action to be taken (storm damage may affect the action to be taken).

Other key personnel should be informed of the possibility of delays or suspension including the PA Announcer who may have to inform spectators of the reasons for the delay or suspension.

Match Day Risk Assessment

Thunderstorms should be included in the Safety Officer's match day risk assessment. As with all risk assessments, if a significant risk is identified controls must be put in place to reduce risk to an acceptable level. When undertaking the assessment the following are included: -

- Those at risk (players, officials, spectators, match day staff)
- Hazards (the lightning)
- Risk (likelihood x severity)
- Controls (action to be taken to prevent injury)

Those at Risk

All persons within the stadium are potentially at risk but those in open spaces more so. Players and officials are particularly at risk both during the warm up and the game. While open terraces are obviously exposed covered terraces also offer little protection meaning that the majority of spectators are at risk. Stewards and other staff who work in the open must be considered.

Hazards Arising From Lightning

Hazards arising from lightning include being struck by the lightning, either directly or indirectly, damaged weakened structures or fire.

Being struck by lightning can occur by:-

- A Direct Strike – the lightning strikes someone and goes to earth through the person;
- Side Flash – the lightning hits an object and 'bounces' off it striking a person (or persons);
- Ground Strike – lightning strikes the ground, travels through the ground hitting a person (or persons).

Falling debris from damaged structures may cause injuries as may fires caused by damage to electrical systems or igniting combustible materials.

Likelihood of Being Struck by Lightning

It is not very likely that people on the footprint will be hit by lightning.

While the Met Office says it is estimated that there are nearly 1.4 billion lightning strikes every year, an average of between 30 and 60 people are struck by the lightning with two to three people being killed. The majority of those struck, 72%, occurred during outdoor activities. The British Medical Journal reports that the odds of being struck by lightning are around one in 10 million.

Injuries Arising From an Incident

Immediate injuries arising from a lightning strike include:-

- Cardiac arrest
- Respiratory arrest
- Seizures
- Severe burns – internal and external
- Muscle pains
- Broken bones
- Ocular cataracts
- Loss of consciousness

Longer term effects could include neurological symptoms:-

- Muscle weakness
- Sensory loss,
- Spinal cord weakness
- Difficulty thinking and concentrating

Additionally, there could be:-

- Memory loss
- Dizziness
- Weakness,
- Numbness

Death is also a possibility but around 90% of people who are struck by lightning do survive.

Monitoring

Where the weather forecast identifies there is a possibility of thunderstorms and persons identified as being at risk are present in the stadium the Safety Officer will continually monitor for the approach of thunderstorms.

If thunder then the Safety Officer should apply 'flash to bang' or the 30/30 rule.

Flash to Bang - to check if a storm is getting closer or further away from the stadium apply the flash to bang principle by counting (or using your watch) as soon as the lightening flash is seen until the thunder is heard. 'Flash to bang' is based on the following facts:

1. Sound travels at 330 meters per second or at 1 km in 3 seconds. (Approximately 1 mile every 5 seconds).
2. Light travels at 300,000 km per second.
3. Lightning will always be seen before thunder.

To calculate the distance between yourself and the storm divide the number of seconds by 3 to find the distance in kilometres or divide by five to find the distance in miles.

Obviously, if the distance between the thunder and lightning increases over a couple of strikes, the storm is moving away from you and if it decreases, it is coming towards you.

Lightning Apps are another way of keeping track of thunderstorms. These can be downloaded from Play Store, Galaxy Store or Apple. There are several free ones (e.g., My Lightning Tracker and Alerts, Live Lightning, Lightning Alarm) and they constantly update the position of storms and provide regular notifications.

Decision to Delay or Suspend

If the gap between the lightning and following thunder is 30 seconds or less (within six miles of the stadium) play should be suspended with players and match officials return to the changing rooms. Should this occur before kick-off it may be necessary to delay the kick off and / or suspend warm ups.

If the Safety Officer believes that play should be suspended for the safety of all present or planning on attending, s/he will ask the referee to suspend play and will make an announcement to the crowd to explain the decision and the potential length of the delay and offer any safety advice available to him.

Precautions / Action To Take

Continue monitoring.

Players and officials should return to the changing rooms.

Where possible spectators should be removed from the stands. Move as many as possible onto concourses or other enclosed structures.

If it is not possible to move spectators the following may reduce the risk of them being struck by lightning: -

- Crouch down in a ball-like position with the head tucked in and hands covering ears, keeping as small as possible and down low with minimal contact with the ground;
- Spread out as much as possible, avoid standing in large groups, this will reduce the number of injuries if lightning strikes the ground
- Avoid tall structures, such as floodlights, lightning tends to strike the tallest object around
- Keep away from objects that can conduct or attract lightning, for example, perimeter fences or umbrellas;

First Aid for Anyone Struck by Lightning:

As with any emergency situation assess for any danger to yourself before commencing first aid. Anyone who has been struck by lightning does not retain an electrical charge so it is safe to touch them.

Ensure you have appropriate protective clothing /equipment (e.g., nitrile gloves, resuscitation shield). Commence first aid but be aware that casualties: -

- may not be breathing or heart may have stopped;
- may have injuries as a result of being thrown by the lightning;
- may have burns;
- may suffer temporary blindness or deafness making communication difficult;
- may be suffering from shock, confusion, nauseousness or temporary memory loss.

References:

Met Office

WeatherandRadar.co.uk

RoSPA – Lightning at Leisure

PLASA – Lightning Guidance for Outdoor Events

Cumberland FA – Thunderstorm Guidance