

910AWI91-100

BY ORDER OF THE COMMANDER 910 AIRLIFT WING

910 AIRLIFT WING INSTRUCTION 91-100

12 April 2000

Safety

LIGHTNING DETECTION SYSTEM

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1. The lightning detection system (LDS) will primarily be managed by the 910th Airlift Wing Command Post when it is open, fully manned and workload allows. It will be managed by 910th Airlift Wing Fire Department all other times. Secondary management procedures are established for Fuels Management and Maintenance Control as their personnel traditionally have the most lightning exposure on the flightline. Secondary management procedures are contained in section 4.2.

1.1. Six computers have access to the LDS information. They are located at:

1.1.1. 910th Airlift Wing Fire Department (FD) dispatcher's desk

1.1.2. 910th Airlift Wing Command Post (CP) console

1.1.3. 910th Airlift Wing Supervisor of Flying desk

1.1.4. 910th Airlift Wing Fuels Management Office

1.1.5. 910th Airlift Wing Maintenance Control console

1.1.6. 910th Airlift Wing Safety Office

2. Terms Defined: (Source AFOSHSTD 91-100, *Aircraft Flight Line – Ground Operations and Activities*)

2.1. Lightning Watch: A condition that is in effect 30 minutes prior to thunderstorms being within a 5 nautical mile (NM) radius of any predetermined location or activity as forecast by the Base Weather Station (BWS). **NOTE: Youngstown ARS has no base weather station. The office with primary responsibility will perform Lightning Watch/Warning duties.** Lightning is a direct result of a thunderstorm. During a lightning watch, accomplish the following:

2.1.1. Operations or activities may continue; however, all personnel must be prepared to implement Lightning Warning procedures without delay.

2.1.2. Be alert for any lightning activity, to include audible thunder, and advise supervisory personnel of any observations.

2.2. Lightning Warning: A condition that is in effect whenever any lightning is occurring within a 5 NM radius of the predetermined locations and activities. Personnel in affected areas or engaged in affected activities will take the following actions:

2.2.1. Cease all outside activities and seek shelter.

2.2.2. Go to one of the recommended locations, as listed below, that provide safe shelter and locations to avoid.

3. General Lightning Safety for all AF activities and operations:

3.1. When lightning is detected or observed within the immediate vicinity of any activity or operation, do not go out of doors or remain out unless it is absolutely necessary.

3.1.2. Seek shelter as follows:

3.1.2.1. Dwellings or other buildings that are protected against lightning;

3.1.2.2. Protected underground shelters;

3.1.2.3. Large metal-framed buildings;

3.1.2.4. Enclosed automobiles, buses, aircraft, and other vehicles with metal tops and bodies;

3.1.2.4.1. Streets that may be shielded by nearby buildings;

3.1.2.5. Certain locations are extremely hazardous during thunderstorms and should be avoided:

3.1.2.5.1. Hilltops and ridges;

3.1.2.5.2. Areas on top of buildings;

3.1.2.5.3. Under isolated trees;

3.1.2.5.4. Near electrical appliances, telephones, plumbing fixtures, and metal or electrically conductive objects; and

3.1.2.5.5. Aircraft dry bays, tanks, and wheel wells.

4. AFOSHSTD 91-100 directs each Air Force installation to develop a local procedure to ensure key personnel and agencies involved in high weather risk activities and operations are notified according to the installation support plan. Normally, these agencies are those having aircraft, POL facilities, open-air work and recreational activities, and underground utilities work. Key personnel, in turn, will advise all on-duty supervisors to take proper precautions and timely actions. The following procedures will be used at Youngstown Air Reserve Station.

4.1. 910 AW/CP will have primary responsibility for operating the LDS when the CP is open and workload allows them to perform these functions. Primary responsibility for the LDS will be passed to the 910 AW/FD at all other times. CP will establish and maintain procedures for passing control between CP and FD. The section with primary responsibility will monitor the LDS at all times that lightning is considered possible.

4.1.1. The LDS will give notifications of lightning at the following distances: 50 NM, 30 NM, 10 NM, and 5 NM.

4.1.1.1. The office of primary responsibility will follow the following procedures. **Note: Repeat all messages twice prior to commencing the roll call.**

4.1.1.2. When the LDS detects lightning at 50 NM, the controller will actively monitor the display i.e., the display will be kept on the screen and watched as much as possible.

4.1.1.3. When lightning is detected at 30 NM, the controller will activate the Base Notification System and give the following statement, "The base is on a lightning watch. All personnel should be ready to terminate outdoor activities and take shelter within 30 minutes."

4.1.1.3.1 The LDS is a highly sensitive piece of equipment capable of picking up 100% of lightning and, in some cases, high amounts of electro-magnetic energy that may not actually be lightning. If the LDS display suddenly shows lightning in the 10-30 mile range that has not been detected previously, the controller will attempt to correlate the detected lightning with Doppler radar or other local radar data before declaring a Lightning Watch. If the radar shows no precipitation, the situation should be monitored, but no Lightning Watch declared until such time as the controller sees some correlation. If the controller does not have the capability to correlate the LDS with radar, a Lightning Watch should be declared.

4.1.1.4. Once a Lightning Watch has been initiated, it will be in force for at least 30 minutes. If lightning is still in the area but not within 5 NM at the end of that time, the Lightning Watch should be continued for at least another 30 minutes. As a minimum, the Lightning Watch status will be updated once per hour until an all clear is given.

4.1.1.5. When lightning is detected at 5 NM, the controller will activate the Base Notification System and give the following statement, "This is a Lightning Warning. Lightning is within 5 NM of the base. All outside activities should cease immediately and any personnel outside should take shelter."

4.1.1.5.1 Although it is the intention of this instruction to provide maximum protection to the base populace and to fully comply with AFOSHSTD 91-100, occasionally thunderstorms with associated lightning will form over or nearly over the base. In those cases, the controller will give as much warning as possible, but, any Lightning Watch may be less than 30 minutes or the base may be put directly into a Lightning Warning.

4.1.1.6. When the lightning is no longer detected within 5 NM the controller will do one of two things:

4.1.1.6.1. If no lightning appears to be approaching the base, the controller will activate the Base Notification System and give the following statement, “This is a lightning all clear. No new lightning is expected within 30 minutes. All personnel may resume normal outdoor activities.”

4.1.1.6.2. If there appears to be additional lightning approaching, the controller will activate the Base Notification System and give the following statement, “The lightning warning is canceled. Personnel may resume outside activities. However, more thunderstorms may be in the area within 30 minutes. Therefore, the base is on a ‘Lightning Watch’; all personnel should be ready to seek shelter from lightning within 30 minutes.”

4.1.1.7. If a Lightning Watch has been declared and the lightning does not come within 5 NM of the base, the controller will continue to watch the LDS. Once the lightning has moved past the base with no new lightning approaching, the controller should declare an “all clear” over the Base Notification System using the terminology above.

4.1.1.8. Security Forces on the flightline will notify Maintenance night shift personnel of the proper lightning status at times when the Maintenance Dispatcher is not on duty.

4.1.1.9. Maintenance night shift personnel will keep Security Forces informed of their intended work locations so that lightning conditions can be relayed to them without undo delay.

4.2. The Fuels Branch office and Maintenance Control will have secondary responsibility for operation of the LDS. These sections will give lightning warnings to their own sections only. This is done because of the degree of exposure to the risk of lightning strikes experienced by personnel from these sections. Lightning watches and all clear advisories will be declared by the office with primary responsibility only.

4.3. Responses to declared lightning conditions. Offices/sections receiving a lightning condition advisory over the Base Notification System should disseminate the information as rapidly as possible and follow the instructions they received.

4.3.1 Aircrew/Flightline personnel in an aircraft, crew bus, or other flightline vehicle will not exit that vehicle during “Lightning Warning” conditions.

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