



LIGHTNING HAZARD PREVENTION FOR MILITARY APPLICATIONS

ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

Military facilities, due to their characteristics and location, are exposed to a high risk of direct lightning strike due to:

- Their location in extended, flat, open areas
- Their location in elevated areas, where they become a very prone element to be impacted



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

Lightning Injures 10 Soldiers at Ft. Drum



Associated Press

FORT DRUM, N.Y. - Military officials say a lightning strike has injured 10 soldiers from a New Jersey Army National Guard unit who were training at Fort Drum in northern New York.

First Sgt. David Moore tells The Associated Press that the soldiers from the Lawrenceville-based 50th Infantry Brigade Combat Team were on a training ground on the Army post when the lightning struck around 8:30 p.m. Tuesday.

Moore says six of the soldiers were checked out by medical staff and have returned to duty. He says the other four are under the care of the unit's medics and are expected to resume their duties.

About 2,000 members of the 50th Infantry are at Fort Drum for its annual 15-day training exercise that began last weekend.

Fort Drum is home to the 10th Mountain Division.

6 Soldiers Hurt by Lightning Strike at Fort Drum



Associated Press

FORT DRUM, N.Y. - Army officials say six Fort Drum soldiers are recovering from injuries suffered when lightning struck while they were conducting a field exercise at the northern New York military post.

A Fort Drum spokeswoman tells local media that the soldiers were training on a range near the Jefferson-St. Lawrence County border when lightning hit the area around 9:15 p.m. Thursday.

Officials say six soldiers were taken to a hospital for treatment of non-life-threatening injuries. The nature of the injuries and details of the lightning strike haven't been released.

The soldiers are members of the 10th Mountain Division's 4th Battalion, 31st Infantry Regiment, 2nd Brigade Combat Team.

In August 2012, a lightning strike injured 10 New Jersey National Guard soldiers who were training at Fort Drum, 70 miles north of Syracuse.

Lightning Strikes 44 Soldiers and Instructors at Army Ranger School



U.S. Army Soldiers participate in waterborne operations training during the Ranger Course on Camp Rudder on Eglin Air Force Base, Fla., Aug. 04, 2015. (U.S. Army photo by Staff Sgt. Scott Brooks)

Military.com | By Matthew Cox

Forty students and four Ranger instructors in the swamp phase of Ranger School were struck by lightning Wednesday afternoon.

ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

One Marine Brain-Dead After Lightning Strikes MV-22 Osprey



Cpl. Skyler James, a tiltrotor mechanic assigned to Marine Medium Tiltrotor Squadron 261, and another Marine, whose identity was not released, were both injured in a lightning strike while working on an [Osprey](#) on the flight line at New River, according to 2nd Marine Aircraft Wing. There were thunderstorms that day around noon, according to local weather reports.

The lightning strike happened as Marines were leaving the flight line, having received a warning that lightning had struck within five miles, according to officials with 2nd MAW. It's standard procedure within the unit to stop flightline activity when lightning comes within five miles as a safety precaution, according to the release.

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ACCOMPLISH WHAT OTHERS U.S. ARMY SPECIAL OPERATIONS

Army Times

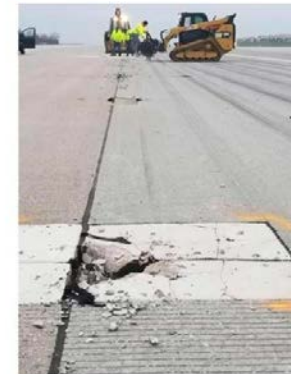
18 paratroopers injured in lightning strike at Fort Bragg

By: Michelle Tan August 20, 2015

Eighteen paratroopers from the 82nd Airborne Division were injured in a lightning strike Wednesday — the second lightning strike in eight days to injure soldiers.

The soldiers in Wednesday's incident are from 1st Squadron, 73rd Cavalry Regiment, 2nd Brigade Combat Team. They were conducting a live-fire exercise on a training range on post when the incident happened, said Master Sgt. Patrick Malone, a spokesman for the 82nd Airborne at Fort Bragg, North Carolina.

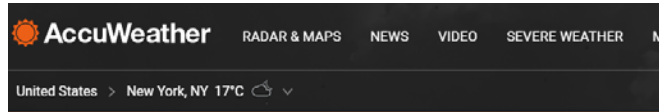
Lightning Strikes Hit Runway of Already Damaged Offutt Air Force Base



This photo from Offutt Air Force Base's official Facebook page shows damage caused by lightning strikes to one of the base's runways. Facebook photo

12 Apr 2019
Stars and Stripes | By Rose L. Thayer

ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK



July 13, 2018

More than a dozen soldiers hospitalized following lightning strike at Fort Jackson

By Chaffin Mitchell, AccuWeather staff writer



A lightning strike sent 15 soldiers to the hospital in Columbia, South Carolina, on Thursday. The National Weather Service in Columbia confirmed the strike hit near Fort Jackson during a training exercise.

The Fort Jackson Public Affairs Office said the lightning strike happened in a field where **close to 200 soldiers** were conducting training around 3:45 p.m.

Military.com

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Lightning Strike Injures 12 Fort Carson Soldiers



The Gazette, Colorado Springs, Colo.

Twelve Fort Carson soldiers were hospitalized, including one in critical condition, after a lightning strike Wednesday afternoon south of the Butts Army Airfield.

Five of the soldiers were released from the hospital later Wednesday.

The soldiers were conducting a training exercise in a large, open field about two to three miles south of the airfield when they were notified of lightning in the area, said Maj. Earl Brown, a 4th Infantry Division spokesman.

Training was suspended at that point, and the soldiers were trying to take cover when lightning hit near them about 2:45 p.m.

"The soldiers were en route to a shelter tent, and they were in a large open area where there was no other vegetation, just a large field area," Brown said.

The injured soldiers, part of a group of about 350 involved in the training, were only about 20 yards from the tent when the lightning hit between them and the tent.

ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

In addition to its location, the risk borne by the development of military activities increases due to:

- Deployment of tactical exercises in open areas
- Handling and storage of explosive materials
- Intensive use of sensitive electronic material
- Refueling of large amounts of fuel in ships, aircrafts and armored vehicles
- Development of maintenance activities in isolated facilities
- Performance of acts in open areas with a high number of civil personnel

Military operations pose a challenge in relation to people risk prevention due to their extreme risk, being thus vital the use of a lightning warning system. This system must be able to provide the maximum anticipation and reliability by means of monitorization and real time analysis in local conditions of the area to be protected.



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

Lightning warning systems directly relate to the launch and cease of a series of phased preventive actions to reduce or even avoid risks derived from lightning.

In the context of military operations, the **early evacuation of personnel** in open areas is the main course of action to be carried out, although it is not the only one. Hence, the main objective of the system must be the identification of the risk of lightning strike with the **maximum possible anticipation**.

Equally important, is the capability of the system to monitor the local conditions for providing “All-clear” notifications based on real-time analysis, not in predetermined security times.



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

ATSTORM® Local early warning system for lightning storm risk prevention

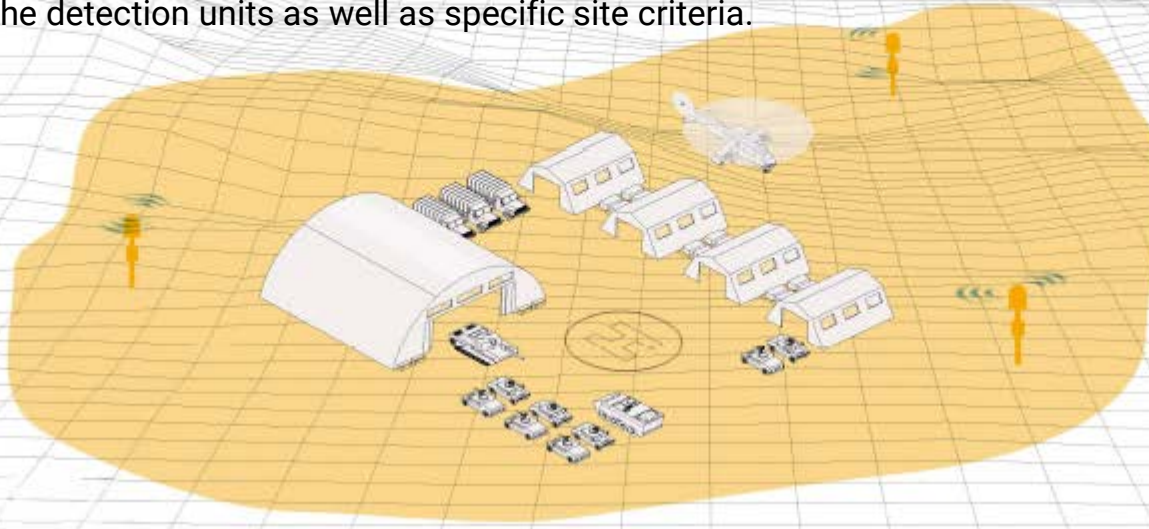
- ✓ **Detection during all phases of the thunderstorm**
We enable the maximum anticipation in the risk of a lightning event and a safe All-clear signal.
- ✓ **Risk alerts via multiple channels**
Our customers receive the risk alerts through multiple means: smartphone, tablet, private web portal, emails and remote activation of alert devices and systems.
- ✓ **Fully electronic, with no moving parts**
Our equipment does not use moving mechanical parts, preventing blockages, wear and failures.



ANTICIPATED PREVENTION OF LIGHTNING STRIKE RISK

ATSTORM® Local early warning system for lightning storm risk prevention

- ✔ **Operated by specialists through Internet of Things (IoT)**
The system is remotely operated, ensuring its correct and continued functioning at all times.
- ✔ **Expert self-learning system**
Continuous improvement of its algorithms, increasing its adaptation to the monitored local characteristics.
- ✔ **Ad-hoc projects**
We study each location and determine the best system configuration in terms of number and position of the detection units as well as specific site criteria.





DETECCIÓN LOCAL
DE TORMENTAS



PARARRAYOS
ACCESORIOS



TOMAS
DE TIERRA



SOLDADURA
EXOTÉRMICA



SOBRETENSIONES
TRANSITORIAS




SOBRETENSIONES
PERMANENTES



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