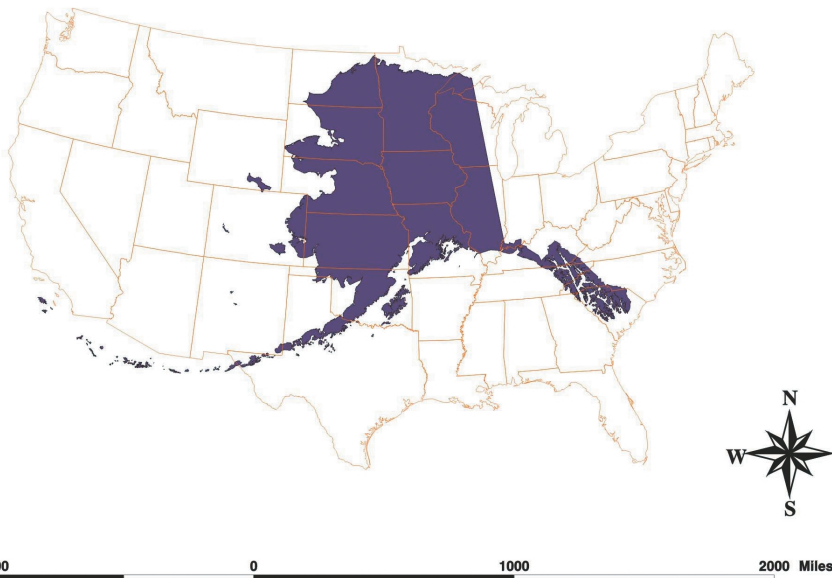


Critical communications

First responders seldom know what the situation is until they arrive on the scene. Some emergencies can become far larger than ever envisaged. Once an incident escalates to a multi agency, multi jurisdictional effort, interoperable communications are critical.

Feature



A perspective photo showing Alaska to scale over a map of the lower 48 US states

Interoperable communications means that all first responders to an incident can talk with each other on demand, in real time, and in a secure mode if necessary. A template for such communications is being constructed by the State of Alaska in the United States, in cooperation with local and federal authorities.

The geographic size of Alaska creates unusual challenges. Alaska has a land area of 571,951 square miles, equal to 20 percent of the size of the contiguous 48 states (see map). Within this area there are only 2000 miles of roads (5180km). Transportation to rural Alaska is by air or along navigable waterways. Nearly 90 percent of Alaska is owned by the state or federal government. There are hundreds of agencies involved in the management and protection of these public lands. Add local jurisdictions to the mix, and the need for interoperable communications in Alaska is immediately apparent.

Protection of critical infrastructure

First responders here face other challenges. Protection of critical infrastructure like the Trans-Alaska Pipeline and major airports in the state are crucial. The oil fields of Alaska account for 20 percent of America's domestic oil production. Eight hundred miles of pipeline connect the North Slope oil fields with the terminal facility at Valdez, Alaska, where up to 19.2 million barrels of crude oil can be stored.

Then there is the proximity of volcanoes. There are three active volcanoes that can affect major urban areas and air traffic in Southcentral Alaska. The Anchorage International Airport is the second busiest cargo hub in the United States. More than 600 wide body cargo aircraft transit Anchorage each week.

Anchorage was the site of a 9.2 earthquake in 1964. The shock wave was felt over a 500,000 square mile area. This quake devastated many coastal communities and a good part of downtown Anchorage. First

responders remain concerned about earthquakes. In the interior of Alaska, wildfires are a serious problem. During 2004 more than six million acres were destroyed by wild fires. In the spring, when ice jams form and then break, flooding routinely occurs and threatens major communities and remote villages. Incidents like these require extensive emergency response, coordination and control.

Real time communications

The Alaska Land Mobile Radio (ALMR) project is designed to provide secure, on demand, real time communications for all agencies responding to any incident within the state. Along the roadways, first responders, using vehicle mounted and hand held radios, enter the emergency communications system through a microwave backbone. Successful tests using ALMR radios over a satellite were recently conducted on a remote island off of the west coast of Alaska. Soon any rural community with access to a satellite link may have a direct connection to the ALMR system.



An ALMR site

ALMR also has an air transportable unit that can be used in remote locations or to augment existing communications during large scale events. Once deployed, the transportable unit connects by satellite back to a central command and control centre. The transportable contains two dispatch stations to assist with on scene communications. Cell phones, airborne and marine radios, and private trunked telephone systems can all be routed through the transportable unit.

Motobridge[®] technology is being used throughout the ALMR system so that dispatchers can connect first responders to each other. For example, air to ground and marine radios can be brought onto ALMR and connected to a 700MHz urban system and a narrow band VHS network with just a few mouse clicks by a dispatcher. This gives fire and EMS personnel interoperable communications with agencies as diverse as military aviation, law enforcement, and local utilities.

Command and control

The incident command system (ICS) within ALMR provides the capability to establish an integrated communications system that supports a unified command structure. Typically, during major incidents no single individual or agency has overarching authority for all decision making. Events of this magnitude require collaborative decision making in order to develop a common operating picture, establish priorities, and to allocate and control resources.

Command and control on this scale demands real time information. The ALMR incident command system means that commanders no longer have to carry bandoliers of radios to communicate with each other. One ALMR type radio is sufficient to coordinate at the command level and direct the necessary tactical responses.

Communicate and coordinate

Fast breaking, dynamic threats, both natural and man made, are part of the world in which we live. The ability for many different agencies to communicate and coordinate quickly is critical.

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