Get on the National Grid

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By Pat West, Senior Editor

Interoperability, in addition to sharing voice communications, means that everyone – state, local and federal emergency response forces – can share maps and location information in emergencies. It's critical that lifesaving people and resources get to the exact location where they're needed -- even if street signs and familiar landmarks are destroyed in a disaster or if the emergency is in a remote area.

The U.S. Fire Administration Interoperability Advisory Team recommends that the fire service begin using the U.S. National Grid – North American Data 1983 (USNG-NAD83) as a universal location reference system so that everyone is using the same grid and coordinates.

If your agency has global positioning satellite technology functioning on its assets, also set those systems to USNG-NAD83 (older GPS systems use the interoperable Military Grid Reference System (MGRS-NAD83/WGS84). Down the road, as passive GPS systems to help incident commanders track assets on the scene of incidents become more integrated with personnel accountability systems and emergency vehicles -- something envisioned by the Department of Homeland Security's National Incident Management System and National Response Plan – snapping everyone's systems to the same grid will become even more essential for efficient management of resources.

Even if you don't have GPS, the National Grid is something all fire service organizations should be learning about and training with to achieve full interoperability. Woody Stratton, team leader of the USFA Interoperability Team and programs manager for master planning and the fire prevention technical curriculum at the National Fire Academy, explains:

FC: In simple terms, what is the U.S. National Grid?

Stratton: Adopted in 2001 as the National Reference (Location) Standard by the Federal Geographic Data Committee, the U.S. National Grid is a relatively simple, plain coordinate "where you are in the world" location reference system. It is a single, universal system capable of enhancing incident command and control and improving interoperability of location information between all first responders, governments, private businesses and the general public. A "single system" concept is important in that it sets up a single reference version, unlike longitude\latitude which can have as many as three versions. In addition USNG lends itself to maps much better than longitude/latitude, particularly on large scale\multi-jurisdictional operations.

FC: Why is it important for fire and EMS agencies to set their maps and GPS systems to the USNG?

Stratton: It boils down to interoperable response. Fire departments and other emergency responders should work from a USNG-based mapping\location system because USNG works particularly well in cross-jurisdictional emergency operations. A vast majority of emergency

responders, such as fire departments, have a local mapping system, which in most cases will not be compatible with global positioning system devices, and their mapping system will most likely will not be familiar to nor even understood by neighboring response partners, much less large-scale events involving national response groups such as Urban Search and Rescue and/or the National Guard.

USNG provides a common frame of reference, a common language if you will, that is available to practically all emergency response personnel whether responding on a local, regional or national basis.

FC: Do you know approximately how many fire departments currently use the USNG?

Stratton: According to the US Fire Service Needs Assessment [2002], a large majority (70%) of communities with populations greater than 100,000, use a map coordinate system. Only about 50% of the smaller departments (which make up about 53% of all fire departments) have a map coordinate system. At this time we don't have a specific number of how many fire departments have adopted USNG. The Fire Service Needs Assessment (of those using a map coordinate system) indicated that about 1% used the Military Grid Reference System (a close kin to and interoperable with USNG), 3% use some version of latitude/longitude (which is not particularly well suited for large scale mapping\operations) and the vast majority use a "local system." Of course, several municipal and suburban departments and their co-responders will be using USNG when it is incorporated into their regional response plan as part of the National Capitol Region for Washington, D.C.

FC: How hard is it to learn to use USNG coordinates?

Stratton: By design, USNG is relatively easy to learn and use. Upon entering the U.S. Army, privates learn the military version (MGRS) of USNG and become well versed in its use and methods relative to operational precision. USGS is comfortable enough with USNG that they have begun to place USNG annotations on the nationally distributed (and used) U.S. Geological Survey Quad Maps.

FC: Where can local and state officials go for assistance in setting their systems to USNG and for training in USNG?

Stratton: Several Web-mapping portals, such as the USGS National Map Initiative (see nationalmap.usgs.gov) and Department of Homeland Security's HazardMaps.gov, are using USNG at the user level, making it more accessible for "hands-on" Web training.

Several of the largest geographic information system software providers have added USNG capability to their software, making the national integration into USNG much easier, long term, especially for those communities who previously had established GIS capabilities with earlier versions of their software.

Partnering with the National Guard in the use of USNG provides the benefits of having a source of instructors (the Guard) but also creates an environment of understanding how each group can work together in the use of a critical tool that both will need to be "interoperable" when the time may come for mutual response to an emergency. Several national programs involving the

use of USNG will be emerging in the near future. At the present time there are several courses at National Emergency Training Center that include the use of USNG.

For more information on the USNG, contact Woody Stratton of the U.S. Interoperability Advisory Team at woody.Stratton@dhs.gov *or call 301-447-1380.*