Part 5
EMERGENCY PREPAREDNESS
ISSUES:
You have to think like the military
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- Develop a plan based on previous experience, world-wide
- Implement the plan with education, training, and exercises
- Debrief after exercises; update plans;
- Include redundancy for contingencies and emerging technologies (GPS receivers on cell phones, text messaging, etc)
- Be sure everyone knows what is expected of them in each scenario (similar to DHS family disaster planning)
Local government agencies have to develop coherent disaster plans, posted on the Internet for everyone to see and understand, especially teachers (e.g. 1962 Cuban Missile Crisis).

Those same agencies need to conduct periodic disaster response exercises.

Every person who will be tapped in an emergency needs to know what will be expected of them; such as bus drivers, medical personnel, law enforcement, etc.

Disaster plans need to include contingencies for extended loss of: power, vehicle access, fuel availability, sanitation, communications, and lifeline support.

Calling FEMA doesn’t solve any of these problems immediately, it only sets wheels of support into motion; e.g. “calling the cavalry at Fort Lincoln.”
Extreme events, like combat, are always treacherous because most responders don’t have experience with the scale of such catastrophes.

Mass evacuations are difficult to plan for without recurring exercises and a thorough program of public education. Contrast 1960 Chile quake with 2004 Sumatra quake.

You’re lucky to get 75% of any populace to evacuate an area ahead of a natural disaster, if it is the first exposure to the natural peril (Taal Volcano example). People with children are more prone to leave than those without children.
The more lifeline infrastructure elements that are impacted by a natural disaster; the slower the emergency response. We rely on cell phones for help or rescue, and little else [repeater towers are vulnerable] text messaging and GPS receivers on horizon. Responders must be self-supporting; which is particularly difficult for water and fuel because of weight [not equipped with water and fuel tank trailers]. Only a limited amount of lifeline support can be supplied using helicopters; from modest distances. [general public views helicopters as 24/7 capable rescue vehicle; without considering logistics or locating survivors]
REFUGEE SUPPORT

- Site selection and transportation
- Administrative requirements
- Power restoration, fuel sources
- Water sources, treatment, storage, and dispersal
- Sanitation requirements, monitoring
- Temporary housing that is site-appropriate; e.g. trailers not a good option in hurricane zones
- Schools, stores, support facilities
ENVIRONMENTAL RESPONSE

- Initial evaluation of environmental impacts
- Tends to be a temporal situation, requiring monitoring and testing
- Mitigation strategies need to be considered ahead of time, if possible
- Mitigation techniques usually depend on available assets, manpower, and hardware (e.g. National Guard, FEMA contractors, private sector, etc)
PREPAREDNESS ISSUES

- **Emergency Response Plans** needed at three levels: 1) State and Federal agencies; 2) local utilities/public agencies; and 3) citizens

- **Education**: everyone at these three levels needs to know what is expected of them in case of a disaster

- **Regular Drills**: Like a Disney movie, every 7 years or so we need to ferret out expectations, responsibilities, and test communications.
Identifying Critical Facilities and Components for Disaster Response

- Cellular phone transmission towers
- Redundancy in electrical power grid
- Alternate routes and fuel sources for emergency responders
- Alternate routes for commerce
- Limitations of shelters, e.g. Louisiana Superdome; London underground during World War II and Cold War
- Sensor systems using GPS location fixed motes will provide monitoring feedback in future
Importance of Exercises

- Emergency responders should be provided with **appropriate training to develop realistic expectations**: “expect the unexpectable”, learn how to innovate (e.g. San Francisco’s loss of fire mains in 1989)

- **Teaching** most effective when done by other responders who have personal experiences to share, lessons learned (just like combat)

- **Realistic training** is most crucial aspect of preparedness (e.g. military use of live ammunition; fire fighters practicing on real fires).

- Sending responders to other agency’s disasters is one of the best training options
ECONOMIC IMPACTS

- Local, Regional, and National Impacts
- FEMA HAZUS models do not come close to accurately gauging things like:
  - the infrastructure disruption impacts (as opposed to structural damage)
  - trickle-down economic impacts, such as loss of confidence by consumers
  - People tend to hold onto their money after any sort of disaster (e.g. 9/11)
  - e.g. record number of retail business failures following 1989 and 1994 earthquakes in California