Part 5
EMERGENCY PREPAREDNESS ISSUES:
You have to think like the military

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NATURAL HAZARDS MITIGATION INSTITUTE

You have to think like the military

- 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)

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DISASTER PLANNING ESSENTIAL for RECOVERY

- 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"

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EVACUATION AND LIFE SAFETY

- **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 through 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 more prone to leave than those without children.**

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EMERGENCY RESPONSE

- 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]

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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

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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.

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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**

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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