

Study Guide for Chapter 4
Risk Management, Threats, and Hazards
Oct. 4, 2017, Lecture

1. DHS has stated, “Ultimately, homeland security is about effectively managing risks to the Nation’s security.” See 2010 Quadrennial Homeland Security Review.

2. At a fundamental level, risk management requires consideration of key variables, including:

A. What to protect.

B. The threats faced.

C. Strategy and plans for dealing with threats.

3. The work of homeland security delves into the nature of risk, whether at airports or busways, public courthouses, or national monuments.

4. One definition: Risk – a situation that involves *exposure to danger or something bad*.

5. In evaluating risk one must look at the *nature* of any risk AND the *consequences* of the risk.

6. A formula for risk can be expressed as:

RISK = HAZARD (potential harm) x EXPOSURE (the level and magnitude of exposure to the potential harm)

7. EXAMPLES of risks:

A. Great risk: a terrorist **anthrax attack**. The HAZARD [A deadly biological agent] x the EXPOSURE [can cause fatalities to a large number of people].

B. Minimal risk: a **candy truck** that turns over and large number of candy bars spill out.

8. The homeland specialist must prepare for the risk posed by:

A. all types of terrorist attacks (known and anticipated), and

B. all manner of natural disasters (floods, hurricanes, earthquakes, etc.).

9. Sound risk reasoning demands that a *measure of quantification* be used when **formulating policy about risk**.

10. Although risk can be quantified, **risk decision makers ultimately must make some *subjective* decisions in quantifying risk.**

11. **Quantification** (that is, using distinct variables with assigned point values to type the risk) is frequently used by various homeland security agencies in making risk assessments.

12. According to Nemeth, the DHS risk formula would look something like this:

Risk = Asset value × threat rating × vulnerability rating

13. The severity of a risk will be assessed in light of its *value, the nature of the threat* itself, *and the potential for harm and injury*.

14. **The Rand Organization suggests three methodologies** of risk assessment:

A. **Analytic:** An analytic process *must address all three factors that determine terrorism risk—threat, vulnerability, and consequences*.

B. **Deliberative:** A deliberative process is necessary because the notion of a cold, *actuarial* terrorism risk assessment is unrealistic.

C. **Practical:** Finally, risk assessment must be practical.

15. **Risk assessment can be departmentally and programmatically driven.** Thus, risk for CBP may be distinctively different than the risks of concern to the Federal Emergency Management Agency (FEMA).

16. **Each agency and department needs to perceive risk *in light of its overall mission*.**

17. Whatever approach is taken with risk assessment, *it is critical to gather information, anticipate events and incidents, understand the value of assets and potential harm, and weigh and contrast the functionality and importance of geographic territory*.

18. **CARVER + Shock Assessment Tool**

The CARVER system employs various criteria labeled as CARVER; CARVER is an acronym for the following six attributes used to evaluate the attractiveness of a target for attack: **Criticality, Accessibility, Recuperability, Vulnerability, Effect, and Recognizability**.

In addition, the *modified* CARVER tool evaluates a seventh attribute, the combined health, economic and psychological impacts of an attack, or the shock attributes of a target.

19. Nemeth explains that *“Threats and hazards are often distinguished by their motive and purpose.”*

20. **Hazards** - are generally construed as **acts of nature**, unintentional events without political motive or purpose.

21. **Threats** - are **usually bound to some improper aim or end, such as terrorism**.

22. **Recognize the distinction between threats and hazards: Natural disasters such as** “hurricanes and floods are events *lacking any intent* and, as such, are relegated to the hazard category.”

23. **Natural hazards include:** Hurricanes, Tornadoes, Floods, Winter storms, Heat-related emergencies, Droughts, Wildfires, Thunderstorms, and Geologic events (for example, *earthquakes*).

24. **THREATS** include crimes and terrorism.

25. **Acts of terrorism include** assassinations, kidnappings, hijackings, bomb scares, and bombings.

26. **High-risk targets** for acts of terrorism include military and civilian government facilities, international airports, large cities, and high-profile landmarks.

27. Homeland security officials assessing risk must understand that **threats are constantly evolving. Thus, they must consider known threats and potential new threats.**

28. According to Nemeth, **there are four generally accepted categories of WMD: Nuclear (atomic); Radiological; Biological; and Chemical.**

29. Some terrorist organizations, such as **Al Qaeda**, openly declare their desire to acquire and use nuclear weapons.

30. Most experts believe that because of the technology required to produce a nuclear weapon **it seems unlikely that a terrorist group can actually produce (that is, manufacture) one.**

31. **The real fear is that terrorists will use the Back Market to procure atomic material.** For example, there are industrial and commercial products (certain medical devices) that have small amounts of radioactive material. And though this radioactive material is the type that can trigger a nuclear reaction, it can be used to make a dirty bomb (i.e., using regular explosives to spread the radioactive material).

32. **When a dirty bomb detonates**, aside from the immediate injuries inflicted, there will be severe collateral damage from the nuclear material itself.

33. **Bioterrorism** is the deliberate dispersal of pathogens through food, air, water, or living organisms to launch disease and other harms to the public.

34. **Anthrax (a deadly bacteria) and Ricin (a toxin made from castor beans) are two biological agents** that in the wrong hands (terrorists, criminals, etc.) can pose a threat to homeland security.

35. **Chemical weapons can cause high levels of mortality.**

36. **Sarin**, invented as a pesticide in Germany before World War 2, **is one of most deadly and feared chemical nerve agents. A very small amount of Sarin is potentially deadly to persons exposed to it.**

37. In 1995, **a Japanese religious cult used Sarin gas to attack part of the Tokyo subway system and a residential neighborhood** causing fatalities and numerous injuries.