

Chapter 2 Nature of Fire Hazards

2-1. Commercial

a. Vessels. The hazards from commercial vessels (generally towboats) would most likely be from the diesel fuel used for the marine propulsion units. Fires involving diesel fuel are Class B fires and are generally extinguished by excluding air (oxygen), inhibiting release of combustible vapors, or interrupting the combustion chain reaction. A lesser hazard would be a Class A fire (wood, paper, cloth, rubber, and many plastics). The heat-absorbing effects of water are effective in extinguishing Class A fires. Electrical fires (Class C) are usually extinguished with fire extinguishers. Vessels or tows with flammable or highly hazardous cargo will be passed separately from all other vessels or tows when river traffic in the approaches to a lock is light. When the river approaches to a lock are congested, simultaneous lockage of the aforementioned vessels or tows, other than pleasure craft, shall follow the latest procedure required by EM 385-1-1. Hazardous materials are described in Part 171, Title 49, Code of Federal Regulations. Flammable materials are defined in the National Fire Protection Association's (NFPA) National Fire Codes and Fire Protection Handbook.

b. Barges. Tanker barges carrying flammable or combustible liquids and gases present the greatest risk of

a disastrous lock chamber fire. While the frequency of such fires has been extremely low, the damage potential to a navigation lock is very high. While water will have little effect on these large Class B fires, it can be effective in minimizing damage to the lock. Covered barges can carry combustible or oxidizing chemicals that, while not usually as volatile as liquids or gases, can also produce a disastrous fire. The procedure for fighting these fires depends on the chemicals involved. A lesser risk is presented by open barges carrying coal, wood, or other similar materials that would result in Class A fires that can be effectively extinguished with large quantities of water. It is important for lock personnel to know exactly what types of materials are on board an approaching tow in order to be prepared to respond effectively to an emergency.

2-2. Recreational

Recreational boat fires are more common, but the risk of lock damage is much lower due to the size of the crafts. Fuel (Class B) and combustible materials, such as fiberglass and wood (Class A), are normally present. Several of these vessels may be locked simultaneously during peak recreational periods, creating the risk of a fire spreading. Pleasure craft shall not be locked through a lock chamber with a commercial vessel or tow carrying dangerous cargo or containing flammable vapors. Water is effective on Class A fires and could also be effective on small Class B fires.