Table 17.1: Guidelines for Risk Assessment	
OCCUPANCY	**REQUIRMENTS**
5. **FIRE MODELS**	**4. ZONE FIRE MODELS** i. Fire environment in a room is quite complex. Major insights into fire behavior have been achieved by a simple conceptual construct called zone modeling. In essence, a zone model assumes that the compartment may be idealized as consisting of uniform conditions in single or multiple regions or zones. In a two-zone model, these regions are a. An upper region, filled with hot combustion gases b. A lower region, filled with cooler, more nearly ambient air. ii. Each region or zone is idealized to have uniform temperatures and gas concentrations. The plane dividing the two zones is the hot layer interface that may move vertically during fire. iii. The two-zone model concept simplifies the room fire thermal environment to two temperatures and an interface height rather than a three-dimensional temperature field. Major simplifications are realized both mathematically and computationally. These simplifications have made many fire problems tractable and have allowed significant progress to be made. iv. Zone models by definition will always be approximate. The key is whether the predictions are "close enough" to yield significant insight for the situation under study. Zone modeling yields useful insight into many fire problems. **4.a. ASET** i. ASET (Available Safe Egress Time) is a program for calculating the temperature and position of the hot smoke layer in a single room with closed doors and windows. ii. ASET can be used to determine the time to the onset of hazardous conditions for both people and property. The required program inputs are the heat loss fractions, the height of the fuel above the floor, criteria for hazard and detection, the room ceiling height, the room floor area, a heat release rate, and a species generation rate of the fire (optional). iii. The program outputs are the temperature, thickness, and (optional) species concentration of the hot smoke layer as a function of time and the time to hazard and detection. iv. ASET can examine multiple cases in a single run. ASET-B is a compact version of ASET designed to run on personal computers. Species concentrations and time to hazard and detection calculated by ASET are not calculated in the compact ASET-B version.