

Safety Corner

Fire life safety on rapid transit

Rapid transit, also known as metro, subway, or mass transit, is the most efficient and safest mode of high-capacity public transport within a metropolitan area. Capable of carrying millions of passengers daily in large population centres, rapid transit systems are subject to very stringent safety regulations and standards in design, installation, operations and maintenance, and training to minimise risks to passengers and the public. Thus, system failure, induced collisions and derailments are rare in modern rapid transit systems. Fires and smoke, however, remain one of the few risks that pose constant challenges to transit operators.

The primary directive in assuring fire safety in rapid transit systems is to preserve human life, and the most effective means is fire prevention through regulating the flammability and combustibility of materials and equipment used, not just on trains but also in stations and tunnels. However, a fire outbreak can still occur due to individual actions, human error, etc. Thus, once a fire has started, fire life safety entails eliminating, if at all possible, or reducing the potential for entrapment and injury of large numbers of people who routinely use the rapid transit facilities. This can be achieved by an effective, prompt evacuation of passengers to a point of safety which is free of fire and smoke, with the aid of fire and smoke detection to locate the fire source. To prevent propagation of fire and smoke calls for smoke extraction and ventilation, clear direction for passengers and exits that allow a large number of passengers to quickly evacuate in a safe direction in an orderly manner. Transit staff should be trained continuously so they are competent in handling fire emergencies.

Apart from assuring fire life safety at the transit system and operator level, passengers education is also important so that they understand the importance of following the operator's direction and quickly leave the danger zone instead of lingering and taking photos with their smartphones.

With vigilant fire prevention and effective emergency response, fire life safety can be assured in rapid transit systems through the combined efforts of transit operator, passengers, governing authority, and emergency services.

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The Safety Corner is contributed by Ir Prof. Vincent Ho, who can be contacted at vsho@UCLA.edu