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Damage and Loss Assessment of Recreational Vehicles

The 2017 North American Recreational Vehicle Market report estimates that over 10 million US households own a recreational vehicle (RV) and nearly 17 million homeowners are looking to purchase an RV. With this market size, it is critical that the fire experience in recreational vehicles and affiliated safety concerns are understood.

The Technical Committee of NFPA 1192, *Standard for Recreational Vehicles* and NFPA 1194, *Standard for Recreational Vehicle Parks and Campgrounds* requested statistical data on recreational vehicle fire losses and damage reports to inform the development of the 2021-cycle standards.

Project Goal & Approach

The goal of this project is to identify trends and summarize the scope of the fire problem involving recreational vehicles. This project collected and analyzed data on recreational vehicle incidents that fall within the scope of the NFPA 1192 standard to help inform appropriate actions and proposed changes to the next edition of the NFPA 1192 Standard on Recreational Vehicles. This report focuses on the regulations that govern recreational vehicles and fire incident and loss assessment data for recreational vehicle incidents.

Read the final report [here](#).

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Summary Observations

Of the nearly 10 million households that spend time in an RV every year, only approximately 0.06% experienced a fire between 2008 and 2017. Although these incidents are relatively rare, there were still a few thousand incidents reported during the time period analyzed. Thus it is important to understand the notable trends that have been observed in terms of time and place of the incident, ignition causes and sources, and contributing factors.

This analysis found that approximately three-quarters of RV fires and 86% of the associated deaths occurred in the Western and Southern regions of the United States. Fire incidents were most common the summer months, but January and February accounted for the largest portion of deaths. Fatal RV fires are most common during sleeping hours.

It was found that fires in the vehicle engine area had the great number of fires which caused the most injuries. However, fire deaths were more likely to result from fires that began in the bedroom, kitchen, and passenger areas. The leading cause of fire ignition is from the failure or malfunction of mechanical or electrical equipment. Fatal fires are most likely to be caused by a heat source that is too close to a combustible. Plastic, gasoline, fabric/fibers, and particle/fiber/headboards are the top materials of the first item ignited.

Fatal fires most often occur in older model of RVs (1970s and 1980s); they have fewer and less advanced fire safety measures, additionally, the older engines and equipment are more likely to fail and cause a fire. One of the most significant factors in RV fires is the lack of a working smoke alarms in ~84% of RV fires, which is likely due to consumers removing them due to nuisance alarms. Many of the casualties from RV fires could have likely been prevented by a working smoke alarm.