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Mississippi State Rating Bureau

MISSISSIPPI STATE RATING BUREAU  
FIRE APPARATUS LIFESPAN & REPLACEMENT

The Mississippi State Rating Bureau (MSRB) is a nonprofit corporation created by state statutes for the purpose of providing advisory fire insurance rates and underwriting information to the insurance industry doing business in Mississippi. MSRB's comments are not for property loss prevention or life safety purposes and no life safety or property loss prevention recommendations are made.

One of the functions of MSRB is to evaluate a community's public fire protection defenses including the fire department, water supply, fire preventative codes and fire service communications and develop a Public Fire Protection Classification. This public fire protection insurance classification number is used as only one of several elements in developing some individual property fire insurance rates. Individual property fire rates are also dependent upon specific construction, occupancy, private protection and exposure from adjacent buildings.

An area that continues to be of interest to many governing officials, both municipal and county, is the process for evaluating fire department apparatus. First response fire apparatus is very critical in performing the task of protecting both the lives and property of the citizens in that community. As with all equipment where lives and property depend on its ability to properly perform its duties, fire department pumpers must maintain a high degree of reliability. Any downtime for repairs may come at a very inopportune time, such as a major conflagration when all equipment is needed and dependability is a major consideration. A breakdown during such an emergency situation may quickly result in an uncontrollable fire, destroyed property, injury and death. It should be kept in mind that the fire department's pumper becomes the firefighter's lifeline in the process of fighting a structure fire.

The MS Code of 1972 Sec 83-3-24 states "When rating a municipality or fire district, the Rating Bureau shall consider the mileage, condition, and maintenance of the fire truck rather than the age of such fire truck." Proper preventative and routine maintenance along with regular performance testing is the key to maximizing the life span of these emergency vehicles. MSRB recommends departments maintain a complete history of maintenance records from the time it was newly purchased to the present. At least annual performance and pump test should be conducted beginning when it was purchased and adequate records maintained. Again, as a primary emergency response vehicle, a high degree of reliability must be maintained. A fire will not wait until malfunctioning equipment can be repaired before destroying property and lives.

MSRB highly recommends that each jurisdiction establish a long range replacement policy for emergency equipment. Generally speaking, there are two types of apparatus, one being custom, which means the entire unit is designed for the fire service, and the other being commercial, which has the equipment placed on a commercial truck chassis. We understand that parts will be available for at least 20 years on custom apparatus, whereas we also understand from the commercial truck chassis manufacturers that the life expectancy is 10 years and after that time parts for the apparatus might be harder to find and the equipment could be out of service for longer periods of time. Based on all factors involved MSRB has long suggested that communities consider the life span of first response engines as 15 years on commercial chassis

and 20 years on custom chassis.

In addition to the information given in the above paragraphs concerning evaluation of a fire department pumper, we take into consideration: that metal fatigue and braking become inadequate over time, acceleration begins to slow, electrical wiring and parts deteriorate, the chassis becomes structurally weakened due to loading, and pumps have a tendency to lose pressure and leak. The number of miles traveled and hours of pumping operation do not normally provide a sole basis for determining the need for replacement, there are other factors which limit its effectiveness and economical life, making replacement desirable.

Experience dictates that fire department pumpers with age are not the complete, reliable fire fighting machines they were during their earlier years. Consequently, pumpers with ages beyond those outlined previously may receive partial grading credit dependent on condition maintenance, service test, and performance over the last few years. Good preventative maintenance and testing along with good record keeping is the key to ensuring the vehicle is reliable and appropriate credit given during MSRB's evaluation.