

THINGS TO KNOW

Is Fire Truck Maintenance Important? - Is your department doing the checks needed to make sure your apparatus is ready to respond to a call? *Fire apparatus that won't start, breaks down on the way to a call or, worst of all, fails at the scene of a fire can have catastrophic consequences.*

Most fire departments do not have a full time maintenance shop and most fire apparatus repairs are sent to a third-party fire apparatus repair facility. In these economic times fire and emergency services are facing financial challenges in their budgets, but there are several things that fire-fighters can do on a regular basis in the fire station to head off issues early on and that will help to prevent the need for costly repairs.

It's easy to cut the preventative maintenance budget, but the most cost saving measure is "*Preventative Maintenance*".

Apparatus checks can be considered a form of maintenance, by inspecting the apparatus on a daily and or scheduled basis the person making the inspection will be able to find minor problems that can be fixed in most cases by fire department personnel themselves.

An example would be finding a discharge or suction valve that is hard to open - with a little lubricant the valve will most likely work smoother thus the inspection became a maintenance item.

Fire departments should have an Apparatus Inspection Form that drivers or fire-fighters should fill out each shift (daily), or at least on a regular weekly schedule. The form should list all the items that should be checked and should include a spot on each item to be checked off when inspection is completed.

EFA Africa recommends department follow the maintenance schedules prescribed by the fire truck and major component makers. This scheduled inspection will insure that potential problems are found early which can prevent a malfunction or possible injury to fire-fighters. Identifying problems right away will also prevent additional problems that may be related to the item found during the inspection, thereby saving the fire department money.

Ideally a fire apparatus pump should be maintained on a regular basis. The pump should be back flushed to clear out sand and debris that possibly entered the pump during operation at a hydrant or at draft. The back flush should be performed at least once a month and or after any operation at a fire where water was drafted, supplied by another fire engine or hooked to a hydrant.

The water tank on a fire apparatus should be flushed at least twice a year to make sure any sand or foreign matter is flushed from the tank so it will not damage pump impellers, ball valves, relieve valves and/or governors.

A simple method that can be used to help maintain a pump and valves from the inside is to put some dishwashing liquid into the tank and operate the pump and circulating the water through the tank to pump valve & the pump to tank fill valve. Doing this will clean build-up of grime and scum off the impellers and discharge valves. Cap all discharges and open and close the valves to help in the cleaning process – **Make Sure** that Both the Tank To Pump valve AND the Pump To Tank Fill valve are Open.

During this operation, open and close the relief valve and or governor to help lubricate and clean the internal working parts. **Make Sure** to take the apparatus to a hydrant, flush the hydrant, hook up the apparatus, remove the tank sump plug and flush the tank and pump.

Compartment door latches, hinges, and spring type door hold open devices should be cleaned and lubricated when they are found to be hard to operate or feel like they have sand/dust in them when trying to open. Pull out drawers, shelves, and tool boards should also be cleaned and lubricated to keep them moving freely.

Keeping fire apparatus' moving components properly lubricated is another preventative maintenance measure that fire fighters can do. Using a creeper going "under", personnel can access the undercarriage of the fire apparatus to lubricate all of its fittings and use this opportunity to check a myriad of other components. Check *that the drive shaft is not cracked or bent and make sure that the drive shaft's couplings are securely mounted and free of foreign objects, *the U-Joints, look for leaks in *the fire pump, *the differential, *the engine, *the transmission, *the water, *the plumbing and check that all hoses and wire harnesses are securely mounted and are not chaffing against the drive shaft or wheels.

The items discussed above are a small fraction of what should be done to insure your apparatus is ready to respond to a call and to insure that fire fighters are operating a safe fire apparatus.

Whenever you do preventative maintenance, even if you're just doing an oil change, you should be looking at all the components and if anything looks unusual, call it out. It could prevent a significant event from happening. If something has changed, or just doesn't look right, check it out and get it fixed. Belts and hoses need to be checked and replaced as necessary. Any time you tilt the cab or open the hood, you should give everything a once over.

Fire fighters who drive apparatus should report funny, or unusual noises, or handling problems immediately as they could be the foreshadowing of serious mechanical problems to come. If it's leaking, sounds amiss, looks out of place or doesn't feel right, collect as much information as possible and report it, Don't be complacent when it comes to problems.

A good reference tool is NFPA 1915 "Standard for Fire Apparatus Preventive Maintenance Program" 2000 Edition which defines the minimum requirements for establishing a preventive maintenance program for fire apparatus. The standard identifies the systems and items to be inspected, frequency of servicing and maintenance, and requirements for testing.

Departments should have an SOG which explains what should be done during the checking of an apparatus and when it should be done. There should be a Maintenance SOG as well outlining "how" this should be completed and what can be completed by fire department personnel or what needs to be completed by an Approved Emergency Vehicle Technician.

When it comes to fire apparatus, their mechanisms need to work properly every time, largely because of the way they are driven, "*It's a pedal to the metal response with lots of hard braking,*" that's hard on vehicles.

With over 30 years experience in fire fighting apparatus maintenance, EFA Africa knows how easy it is for fire and emergency services to defer important maintenance, but also knows the consequences. Neglect sometimes takes months and even years to show up, but when they do, they can be costly and catastrophic.

Apparatus that is used carefully and built well can have relatively low maintenance

For more information and help on Fire and Emergency Truck maintenance, contact:

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"When Lives Are In The Balance And Seconds Count"