WATER SUPPLY: THE VITAL KEY FOR SUCCESS IN AIRCRAFT FIREFIGHTING OPERATIONS

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There is an extensive list of resources needed for the successful outcome of an aircraft incident. Near the top of the list is an adequate water supply. While some of the more proactive airports have invested wisely in a water system, the vast majority have not. It has been well documented that for many incidents the water requirements has far exceeded that which is carried on ARFF vehicles. As an ARF professional, preplans should be instituted and practiced to ensure that these water supply plans are workable.

Some very important logistical issues should be considered when planning your water supply requirements, such as compatibility with off-airport mutual aid fire companies, desired and adequate flow rates, and the distance from water resources are just some of the issues that should be worked out ahead of time. One of the things that you should be considering with mutual aid companies are the type of hose couplings and the delivery capacities. The utilization large diameter hose for resupply is only as good as the pump discharge capacity. Another important concern would be to standardize your ARFF vehicle intake and discharge threads. Also, be sure to insist when you are specifying your new or refurbished ARFF vehicle that large diameter piping inlets are added to your vehicle. It is absolutely futile to have a large diameter intake coupling that is attached to a small diameter pump intake pipe. A minimum of 4 or 5 inchdiameter plumbing should be standard. An example: a 2.5-inch (63.50 mm) hose will take approximately 9-11 minutes to fill a 3000 gallon (11,356L) airport crash truck, while a 5-inch (127mm) hose will take under 3 minutes. The primary goal is to resupply the vehicle as fast as possible and get it back into service.

Let's examine at some of the most common methods of aircraft incident water resupply.

HYDRANT SYSTEMS ON RUNWAY

The ultimate system for re-supply of ARFF vehicles is a hydrant system adjacent to the runway and taxiway system. It is also important to consider having the hydrant system extend into the over-run areas, since this is where many of the aircraft accidents occur. Having this type of system ensures a constant water supply which is very important when it comes to interior aircraft firefighting operations. Unfortunately these systems are found on very few airports.

HYDRANT SYSTEMS ADJACENT TO RAMP AREA

Hydrants which are situated away from the runway / taxiway area can also be used to their full capacity if certain conditions are met. In this application, the use of 5-inch large diameter hose is the best option. By conducting a little research you will find that after deploying 1400 feet (426m) of 5-inch hose the water flow delivery rate is 1500 gallons (5676L) per minute. But what is really amazing is that 3300 feet (1100m) of 5-inch hose will deliver 1000 gallons (3784L) per minute—and that is without the need for a relay pumping operation! To utilize a smaller diameter hose would re-