EXTINGUISHING YOUR RISK

By Chris Dieter, H3R

Each year, a small number of pilots face an unexpected danger—a cockpit or engine fire caused by a broken fuel line or electrical short. While the odds of such an occurrence are slim, for those who experience it, lack of preparation can be frightening—or even fatal.

Although private GA aircraft are not generally required by law to carry fire extinguishers, an easily accessible, hand-held fire extinguisher can mean the difference between minor damage and a total loss, between maintaining composure and losing control. On the ground, few ramps have immediate access to fire extinguishers, and locating an extinguisher in an emergency can cost precious time in a situation where every second counts. Clearly, purchasing a fire extinguisher is an investment in safety that every aircraft owner should seriously consider.

What type of extinguisher is best?

The FAA and National Fire Protection Association strongly encourage the use of portable Halon fire extinguishers for use in aircraft. Halon is preferred over other extinguishing agents for a number of reasons:

Common dry chemical extinguishers, while inexpensive, can cause more damage than the fire itself due to their highly corrosive nature. When discharged in a confined space, they produce a blinding cloud of dust that is an immediate safety hazard. After the event, it is practically impossible to clean up.

C02 extinguishers are heavier than Halon and can cold shock avionics. More importantly, when discharged into a closed cabin in concentrations necessary to extinguish a fire, C02 may not leave enough oxygen to sustain the breathing of a pilot and passengers.

Halon alternatives, such as Halotron 1, share many of the benefits of Halon and have a lower ODF (Ozone Depletion Factor) rating. However, they are roughly twice the size and weight, are more expensive, and require greater room to discharge safely.

What do the ratings mean?

Underwriters Laboratories (UL) classifies and rates fire extinguishers based on their ability to extinguish various types and sizes of fires. Aircraft fires typically involve class B (flammable liquids and gasses), class C (live electrical equipment) and to a lesser extent class A (common combustible material such as wood, paper, and cloth) events.

The numeral in front of the letter rating indicates the relative firepower of the extinguisher. A 2B:C rated extinguisher, for example, is twice as effective on flammable liquids and electrical fires as a 1B:C rated extinguisher. When purchasing a fire extinguisher, pilots should pay more attention to the UL rating than the extinguisher size and weight.

While Halon extinguishers can be used on class A fires, smaller Halon extinguishers are not sufficiently effective to merit an A rating.

Is Halon safe?

According to the Halon Alternatives Research Corporation (HARC), a nonprofit trade association that promotes the development and approval of environmentally acceptable Halon alternatives (http://www.harc.org/), when used properly Halon has "an excellent firefighting record with little, if any, risk." Halon is unique in how it breaks the chemical chain reaction between fuel, ignition source and oxygen. People incorrectly believe that Halon displaces oxygen in the area of its use. In fact, less than 8% concentration by volume is required for any given fire. The net result is plenty of air for pilots and passengers to breathe, even during a fire incident.

Doesn't Halon deplete the ozone layer? Shouldn't alternatives be used?

According to the HARC website, Halon is more damaging to the ozone layer than chlorofluorocarbons (CFCs) such as refrigerants. However, Halon use worldwide is significantly less than CFCs, so even though it is more damaging to the ozone layer, there is less of it released into the atmosphere. The Environmental Protection Agency's position is that Halon can be bought and sold so long as it is utilized appropriately.