



Aerial Firing with the Plastic Sphere Dispenser (PSD)

BEAVER CREEK FIRE, 24 miles north of Walden, Colorado July 19, 2016: 1,500 flaming ping-pong sized plastic balls dropped by helicopter rained upon the southern flank of the 25,000-acre Beaver Creek Fire earlier this week, helping firefighters gain the upper hand.

An extensive, jagged, active fire perimeter and heavy concentrations of ground fuels including brush and downed trees, along with large numbers of standing bug-killed trees made direct fireline construction on the Beaver Creek Fire an unsafe and unviable option.

Burning operations utilizing roads and dozer lines were the best tactics to contain the large fire while keeping crews safe. Firefighters on the ground utilized fuses (road flares), drip torches (aluminum cannisters dripping 2-parts diesel to 1-part gasoline mix from a flaming wick) and short-range incendiary devices including flare guns called "poppers". But these conventional, ground-based firing tactics ignite fuels only as far as firefighters can safely hike into or shoot flares into, while using control lines as their escape routes. This limits the "depth" of the area the fire will initially extend to from control lines, at a time when burning, blowing embers are at their greatest threat to breaching those control lines, causing spotfires.

Aerial firing gives firefighters this extra depth, ensuring a more complete burn of understory fuels. Inside each of the plastic spheres is a small amount of powdered potassium permanganate. When the PSD operator drops each sphere into the dispenser, a needle automatically injects liquid ethylene glycol (antifreeze) into the ball, initiating a burning, chemical reaction as the ball exits the chute. Within thirty seconds, the sphere pops with a hissing flame igniting and melting the plastic sphere while setting fire to combustible fuels present around it.

On July 17 at the Beaver Creek Fire, a Type-3 A-Star light helicopter, "treated" about 1,500 acres with the 15,000 flaming spheres. The fire's division supervisors oversaw the successful operation, giving direction and radioing objectives to the pilot and PSD operator.

Mike McMillan - Beaver Creek Fire PIO



Top to Bottom: 1. PSD Operation, AK (File Photo). 2. Timing Chemical Reaction - CO,. 3.Dropping the ball, CO. 4. Ball ignites, CO, 2016.