

# Spitfire ADT

## BUSHFIRE MANAGEMENT USING AN AERIAL DRIP TORCH

"Husbands are like fires, they go out when they're left unattended" - Cher

**Industry**  
Aviation

**Sector**  
Emergency Management

**Segment**  
Bushfire Control



### A History of Drip Torches

The intentional ignition of fires is a common firefighting tactic where a small fire is ignited along a control line ahead of the main fire. The intent is to consume fuel ahead of the main fire, strengthening the control line. In forest management, the **Drip Torch** is the most common tool used to ignite prescribed burns. The **Drip Torch** consists of small hand held canister of fuel with a wick. The wick is ignited and allows the fire to be directed as needed.

### Aerial Drip Torches

Since the 1960's foresters have regularly used light aircraft in large scale back burning operations. Helicopters are particularly suitable for backburning operations as they can be quickly deployed during brief periods of suitable weather and offer excellent visibility allowing easy recognition of irregular boundaries in rugged terrain.

It quickly became apparent that combining the flexibility of a helicopter with the functionality of a **Drip Torch** would be highly advantageous in burn management. Excellent maneuverability at low speed would permit a high degree of control allowing accurate placement over the lighting pattern even in the steepest terrain.

This was the advent of the **Aerial Drip Torch** or **Helitorch**, the same principal of operation as the **Drip Torch** except that the **ADT** is suspended below a helicopter allowing fuel to be dispensed from altitude covering much larger areas.

### SpitfireADT

The **SpitfireADT (Aerial Drip Torch)** is a device designed to be carried as an under-slung load on a helicopter to dispense ignited gelled fuel for lighting fires to meet a variety of specified forest and land management objectives.

The **SpitfireADT** consists of a storage tank, with fuel a dispensing and ignition system, enclosed within a protective frame. Gelled petrol is pumped from the tank through a discharge relief valve and ignited by a high voltage spark at the tip of the needle.

With the tank full, the **SpitfireADT**, control gear and sling weigh 170kg and is operated by a bombardier in the helicopter who can regulate the gelled petrol flow rate and the spark ignition using a hand piece. The **SpitfireADT** connection incorporates a breakaway fitting in case it becomes necessary to jettison the unit in flight.



The **SpitfireADT**, has been developed to provide burn capability with less risk to ground staff in rugged terrain. It can ignite sparse or continuous fuels in a short time and on a large scale in remote inaccessible areas. It is a cost effective, environmentally acceptable solution, and allows for effective fire fighting.