

26th April 2020

[REDACTED]

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The Bushfire Royal Commission

Locked Bag 2000,

Manuka ACT 2603

Dear Sir,

I would like to submit my proposal regarding Bushfires and in particular our response to them.

Watching three really big planes scoop up their loads of water on the Shoalhaven River one after the other during the past fire season, I thought the volumes that they were carrying would be more than enough to quench a sizeable fire.

At the receiving end of those loads, the flames being bombed seemed to be extinguishing at a fast rate. But when the planes went away to reload, the fires got even bigger, fed by the breeze. That appears to be the game stopper. It seems **that the flames needed to be put out while they were small.**

Response times to fires by RFS teams at the moment are disappointing. The RFS quotes times of roughly seven minutes at best to respond to most of the fires that we saw this season. But that is time quoted to get "Out of the blocks." I feel the time to actually reach the flames is what needs to improve significantly to provide a game changer. The fires grow ever bigger while crews are driving towards them.

Due to difficult terrain and the need to carry large loads of water, trucks and crews are faced sometimes with enormous time constraints to get to the flames.

One solution could be an **aerial delivery system** of retardant that is quick to deploy, and a system that does not fully rely on having flight crews and their aircraft on hand immediately.

In this regard I would like to propose a two-pronged system...

STAGE 1. Where bushfires are started by lightning strikes in a dry storm cell, the use of several specially fitted drones, which could be a viable solution in areas which take time to reach. In difficult to reach areas where the conditions for combustibility of ground cover is extreme, the lightning is "Induced" to strike (the positive and negatively charged) metal shells of custom-built drones which would then earth on grounding

stations. The experiments of Benjamin Franklin with kites to induce lightning is the basis of this suggestion.

But in our situation the format would consist of charged grounding rods that work like suppressors, at prominent safe points on the ground. They could be set up in positions such as those where Trig stations were placed in rural areas in the past. In this way, the lightning strikes could be **diverted safely**. Strikes are induced to the charged metal shell of the drone, then pass directly to ground points, avoiding combustibles. Some, perhaps many fire ignitions may be prevented in this way.

STAGE 2. Where fires have already ignited, other specially built drones could be used to extinguish them early. They would have a tank for retardant and a water cannon. Water cannons would be more useful than bombing, as the streams would be able to penetrate and reach fires below the canopies of trees. Also, there would be a tactical advantage with cannons fitted to tackle fires on steep hill sides.

Trained RFC personnel would first launch the drones ahead of ground support. Time saved would be the big plus. Travelling in fire trucks, the operators could use the cameras on the drones to fight the fire pinpointed ahead by GPS, keeping the fire contained and relatively minor until crews arrive at the scene. More than one drone could be deployed to target the flames from different aspects. As helicopters become available, their pilots could take over command for more professional coordination as new drones are launched and guided to the outbreak.

Development of these systems and equipment may require large government expenditure. But these proposals are within the bounds of current technology. I trust that my submission will prove worthy of your consideration.

Yours sincerely

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