

FIRE & RESCUE

INTERNATIONAL INDEPENDENT INTELLIGENCE

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Pump and circumstance



A refuse tip fire that took seven days, around 100 firefighters and approximately 120 million litres of water to extinguish required the use of some serious hose laying and pumping power, reports Jim Read from the Scoresby Fire Brigade in Melbourne, Australia.

The Hytrans Hoselayer, which carries over 2km of large-diameter hose (LDH), provided the infrastructure necessary to supply 12,000 lpm of water. Without LHD the Somerton rubbish fire would have burned for longer.

On 20 November 2015, at 02:36hrs, Scoresby Fire Brigade responded to a large fire in an illegal rubbish tip in the Somerton area north of Melbourne, Australia. The fire had been started by lightning and involved around a pile of burning building materials measuring 100m x 50m x 15m in height.

Although water supplies were restricted by a small 150mm main on the eastern side of the Hume Highway, it was known that a 300mm main ran along the western side of the highway. To bring water to the fire ground the highway was temporarily closed to traffic, while trenches were dug and metal plates installed to enable water supply and access for traffic.

As the total area of the refuse pile measured 200m x 200m it was quickly ascertained that for the efficient operation of three master streams a flow rate of 12,000 lpm was required

via three lays (shortest 500m and longest 810m), each contributing 4,000 lpm from the supply point on the other side of the main Melbourne-Sydney dual carriage highway. These flow rates determined that a pumping appliance would be required every seven lengths (210m).

Each lay therefore consisted of supply pumper, mid-line pumper, pre-attack pumper, feeding a master stream flowing from a ladder platform, tele-boom or aerial pumper. Each of the master streams discharged at 3,800 lpm, with ancillary monitors having a lesser output.

One lay was 810m in length and consisted of 100mm large-diameter hose that transported the water from base to attack pumper, with a total of five pumpers in the relay. To feed the same lay with twin 65mm hose would have needed 15 pumpers, each 60m apart, and 60 lengths of hose. Multiplied by the three lays, a total of 45 pumpers and 180 lengths of hose would have been required!

As it was clear that the job would take several days to control, the priority became smoke removal for the surrounding businesses and residents – the fire itself was going nowhere.

After the three hose lays and hose ramps had been set up for vehicle access, it became very clear that three significant milestones had been reached in the first hours of the incident. Firstly, the hoses could supply the required flow on a long-term basis. Secondly, the fire-ground was free of clutter and only one large diameter hose was required at the north and south supply routes. And thirdly, the addition of water thieves along the lays enabled the addition and subtraction of lines or appliances without having to stop the flow of water.

Mitigation of the smoke involved the use of class A foam from specialist appliances. An aerial pumper that had proved its worth during the eight-week Hazelwood Mine fire of 2014 was



brought in from Shepparton Fire Station. And when the Australian Capital Territory Fire & Rescue introduced three compressed air foam system appliances, Scoresby Fire Brigade members were recalled on day two and three to the incident to integrate the CAFS units within the relays for foam application. This included the design of a water-relay system on the south edge of the fire for the introduction of the CAFS units.

As an aside, recognition of Scoresby Fire Brigade's expertise in relay pumping operations, hose-laying and retrieval had been previously recognised by a visit from the Fire & Rescue Service of New South Wales earlier in the year. Fire & Rescue NSW had travelled to Scoresby to see how its hose layer was used in emergency situations in Victoria, and how the many the health and safety issues associated with working with heavy hose and working at heights had been solved. The two-day visit provided a good grounding in these operations in readiness for the introduction of the first Fire & Rescue NSW Hytrans bulk water-transfer system, which includes the Hytrans HS150 high-volume pump, hose layer and HRU200 hose-recovery unit (for hose up to 200mm) in early 2016.

Back at the scene, 2.2km of 100mm Snap Tite HFX hose was laid down by the hose layer, and it stayed in service for seven days, pumping 12,000 litres of water per minute. Total flow was approximately 120 million litres!

At the conclusion of the fire the mandatory laying out, pressure testing, certification and re-stowing of the hose layer occurred to ensure safe reuse at the next call. The hose maintenance took 12 members of the brigade five hours to complete.

The outcome was that no hose had a leak or any defined



damage that would take it out of commission (other than a hose that developed a pin hole leak on the first day); none of the lockable couplings had any damage or leakage; cleaning the hose was simple with yard brooms and a line from the tanker; and the Hytrans hose-retrieval unit worked without fault, collecting 4.5km of hose from the fire ground. After maintenance we went back to the station, backed the truck into the shed and went home to our families.

The uptake of large-diameter hose is being facilitated by technology such as hose-recovery units and high-volume pumps.

ABOUT THE AUTHOR

Jim Read is a member of the Scoresby Fire Brigade (Country Fire Authority) in the southeast of Melbourne, Victoria.

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