

Chisholm Fire (LWF-063) Entrapment Incident Report

Incident Summary

The fire started on Wednesday, May 23rd, 2001 in an area north of Flatbush Alberta, which is 100 kilometres southeast of Slave Lake. Over the first 3 days the fire grew to 15000 hectares in size and consumed forest fuels at a rate of 2.5 kilometres per hour during the peak burning hours. The unusually hot temperatures coupled with the dry spring fuel condition to create an out of control wildfire. Resources were requested from across the province immediately due to the fire's proximity to the community. The British Columbia Forest Service (now BC Wildfire Service) sent numerous Initial Attack (IA) crews from the nearest Fire Centres to aid in the fire suppression efforts.

The fire entrapment incident occurred on Sunday, May 27th near the Eastern Flank of Division 2. A control line had been established using dozers that pushed through the thick fuels in the area. This dozer guard was constructed as tight to the fire's edge as possible, but there were still pockets of unburnt fuel between the fire and the control line. A total of 14 fire personnel were tasked with securing the control line including a 3 person IA crew from British Columbia, a crew of 8 emergency firefighters from Alberta and 3 equipment operators who were supplying the crews with water.

The IA Crew Leader from BC updated the Division Supervisor at 08:45 on the morning of the incident and explained that there were spots outside of the dozer guard. All helicopters bucketing in the Division were assigned to these spots to ensure the control line would hold. The fire crews continued to mop-up to a 100 foot depth until approximately 11:30 when the Division Supervisor asked this group to advance 1 kilometer south along the perimeter and assess a number of hot spots. New **Escape Routes** and **Safety Zones** were discussed over the radio by the supervisors. The crews started fire suppression activities after arriving at the hot spots ahead of their previous position.

By 14:00, the Crew Leader realized that the Safety Zones in the 'Black' were no longer acceptable due to falling timber caused by **high winds**. A flare up in the unburnt fuels remaining to the north of the crews cut off access to the original **Escape Route**. There was an increase in fire activity around the hot spots to the south as well, which trapped the firefighters along this section of the dozer guard in less than 30 minutes. At 15:00, the fire crews and equipment operators moved as far south as possible to start the construction of an adequate Safety Zone and heli-pad in preparation for a possible emergency evacuation. A helicopter Bird Dog Officer established a visual of the fire crews and requested bucket support in the area, but explained that all personnel were safe. The fire behaviour continued to increase. The crews deployed and shared 3 BC fire shelters at 16:00 as a precaution and none of the individuals involved were injured.

Weather Conditions - at Peak Burning

Forecasted

Temperature: **27° C**

Relative Humidity: **25 %**

Wind Speed and Direction: **25 km/h (gust to 50km/h) and East to Southeast**

Actual

Temperature: **25° C**

Relative Humidity: **27 %**

Wind Speed and Direction: **30 + km/h (gust to 60km/h) and East to Southeast**

Fire Behaviour Analysis

Moisture Codes

FFMC: **90**

DMC: **95**

DC: **380**

Fire Behaviour Indexes

ISI: **15**

BUI: **117**

FWI: **43**

Fuel Type

The fire was burning in a boreal forest consisting of black and white spruce stands with pockets of aspen trees. There was cured grass in most open areas. A heavy slash build up due to dozer guard construction was prevalent near the incident. All of the fuels were dry due to the hot spring conditions and natural cycle of the conifer and deciduous trees.

Topography

This fire occurred on flat ground.

Rate of Spread and Fire Type

The fire was consuming forests fuels at rate of spread between 2.5 and 4.5 km/h during the peak burning period on the day of the incident. The fire behaviour forecasts were calling for crown fires in all coniferous fuel types with vigorous surface fires in both deciduous and cured grass fuels.

Safety Procedures in Place

Lookouts - were only available when aircraft were in the area due to flat ground.

Anchor Points - were abandoned by the crew in order to suppress the hot spots.

Communications - ground crew had air to ground and ground to base channels.

Escape Routes - the dozer guard was used until moving 1 km to the south.

Safety Zones - the 'Black' was used as a refuge area until timber started falling.

It was noted that the BC crews were not using the term Anchor Points in the acronym LCES, which may have contributed to a lack of secured control line.