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## What's the Tactic?

To determine which tactic—or tactics—would be most effective on a wildfire, you must first determine how the fire is behaving. After making a comprehensive assessment, and determining that the fire can be safely attacked, there are three basic methods that can be used (or a combination of the three depending on the fire).

It is considered a **Direct Attack** if any treatment is applied directly to burning fuel such as: using water, smothering with dirt or chemically quenching the fire or by physically separating the burning from not burned fuel.

The **Direct Attack** is used when:

- Fire activity is relatively low (e.g. ground fire).
- Fire is moving slowly. (e.g. slow moving ground fire).
- Terrain is safe and accessible, and the area can be quickly accessed (ease of transport).
- Transporting crews and equipment into the area is relatively easy (i.e. heavy equipment, if used, does not need to be barged in or moved a long distance).
- Control lines can be built quickly
- It is most often used during an Initial Attack on a fire.

In a direct attack, a fireline is constructed next to burning fuel and the fire is attacked and suppressed quickly.

The mop-up phase of a direct attack is thorough and usually covers the entire fire area.

An **Indirect Attack** is when suppression tactics are used, or established a distance away from the oncoming fire including: lines where fuel is reduced, indirect firelines, contingency firelines, backburning and wetting unburnt fuels.

The **Indirect Attack** is used when:

- Fire is very active, spreading rapidly, is (or could) spot ahead of the fire (crown fire is occurring or is possible).

During an indirect attack, any advantageous terrain or natural barriers are identified (e.g. rivers, lakes, marshes, bogs, rockslides, favourable slopes, slower-burning fuels such as deciduous trees). These features are strengthened, if needed, by widening existing control lines, establishing additional control lines or burning out fuels.

- This activity is taken well in advance of fire perimeter.
- Under direction of Ignition specialist, fire is applied close to the control line on the fire side of the line, and the fire advances to the fire perimeter. This robs the wildfire of fuel, and the reduced fire activity is much easier to suppress. (Burn off).
- Control lines alone only work when the fire is burning less intensely.
- The control line in Indirect Attack is used by Operations to burn “from”. However, the burn off is intended to reduce the fire activity to the point that the control line will successfully stop the modified wildfire, as it will then move more slowly with less intensity (turns into a slow moving ground fire).

Mop-up activities for an indirect attack are generally restricted to the control line area, within several hose lengths of that line. The goal is to extinguish hot spots and remove unburned fuel that could compromise the control line during the remainder of the fire season.

In such cases, the centre of the fire will often continue burning into the fall.

Fire crews in the mopped-up (secured) area will put out hot spots and remove any fuels that could roll across the control line. They will remove snags, rotten logs, stumps, brush and low-hanging limbs that could potentially jeopardize the control line. They will also search for roots burning underground near the control line (using the “cold trail” method) and for smouldering spot fires beyond the control line that could have been ignited by sparks or embers carried ahead of the main fire by wind (spotting).



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## Tactics cont'd.

A **Parallel Attack** is a combination of a direct attack and an indirect attack. In this case, both flanks of a wildfire are attacked simultaneously but farther away from the fire line than in an direct attack, thereby containing the wildfire between two parallel control lines.

The parallel attack is used when:

- the fire is spreading rapidly (i.e. a fast-moving ground fire with occasional aerial bursts)
- the fire site is some distance away from roads, slowing the movement of firefighting resources into the area
- the fire very likely will not be extinguished by the next “burning period” (10 a.m. the following day)

In a parallel attack, the fireline is constructed as close to the wildfire as the heat and flames will allow. The goal is to control the fire — not stop it immediately. Fuels between the control line and the main fire are usually ignited to reduce the amount of unburned fuel near the control line, reinforcing the control line and speeding up the burning out process.

During a parallel attack, crews will often make use of an existing forest resource road as part of this strategy, since such roads are typically built on flatter land where it’s safer for crews to work. In addition, some tree clearing or brush control has likely already been done on each side of the road.

Mop-up activities for this type of attack are often restricted to the control line area, but may extend deeper into the wildfire. The goal is to extinguish hot spots and remove unburned fuel that could compromise the control line during the rest of the summer.

On larger wildfires, the centre of the fire will often continue burning until the autumn. It is anticipated that the centre of the fire will continue to burning into the fall.

Fire crews in the mopped-up (secured) area will put out hot spots and remove any fuels that could roll across the control line. They will remove snags, rotten logs, stumps, brush and low-hanging limbs that could potentially jeopardize the control line. They will also search for roots burning underground near the control line (using the “cold trail” method).

The key factor in deciding which tactics will be used on any given fire is the safety of firefighting personnel. This consideration is paramount and no crewperson will ever be jeopardized to save homes, timber, infrastructure or any other values that may be at risk.

## L.A.C.E.S

**Safety—Always Safety!** The BCWS has a strong safety culture. Fire fighter safety is always paramount and no fire suppression activity will be conducted if it is not safe to do so.

All firefighters receive a briefing upon arriving at a site from their supervisor, prior to commencing work. There is a minimum requirement of what a briefing will include:

- \* The Chain of Command (who is responsible for what, who reports to whom, and what is the plan of action).
- \* Designated **Lookouts** (if required)
- \* Established **Anchor Points** (advantageous positions from which firelines and control lines may start).
- \* A **Communications** plan (outlining how fire fighters are expected to communicate with their supervisor and other fire fighters).
- \* At least two **Escape Routes** that lead to adequate **Safety Zones**, in case firefighters and equipment are threatened by a sudden change in fire behaviour.

You will note that the highlighted words spell out the acronym **LACES**. This acronym is drilled into each and every member of BCWS who works on the fireline. If at any point a fire fighter feels unsafe they may refuse the task assigned to them.

**If in Doubt—Back Out!**

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## Choosing the Right Fire Suppression Tactic

Every fire is unique. Factors that differentiate it from other wildfires include: terrain, slope, aspect, fuel types, weather conditions, and values that need to be protected.

So how do BC Wildfire Service staff decide which suppression tactics are the best ones to use for a particular fire?

Their assessment of a wildfire and its behaviour, along with which resources are immediately available, will help them choose an achievable fire suppression method. However, there may be many viable options to achieve longer-term goals.

As emergency responders, their first decision-making tool makes use of the BC Emergency Management System (BCEMS) objectives. Each goal (along with the tactics necessary to achieve that goal) is reviewed using the BCEMS objectives, in order of priority: if the goal meets the first objective, it moves on to the second one. As staff work through the list of objectives, it quickly becomes apparent if the goal and its tactics are sound.

Perhaps the goal might protect property, but the tactics could put first responders at risk. Perhaps the goal would protect the environment (e.g. forest), but the tactics could put infrastructure (such as highways or bridges) at risk. Potential goals and tactics are evaluated in this way to determine the best approach to

deal with the fire.

Once the correct goal is identified, possible tactics are examined to determine which resources will be needed to achieve that goal. Alternative tactics that might also achieve the same goal are evaluated to see if they would compromise or support the goal. Costs are also considered, since the BC Wildfire Service has a responsibility to spend public funds well.

Once the goal and appropriate tactics are selected, staff allocate or seek out the resources needed to work on the fire. While this may seem like an onerous task, it actually can happen very quickly. Experience, knowledge and teamwork result in quick decisions that get the right resources moving toward a wildfire as quickly as possible.

The BCEMS Response Objectives are:

- ensure the safety and health of responders,
- save lives,
- reduce suffering,
- protect public health,
- protect infrastructure,
- protect property,
- protect the environment, and
- reduce economic and social losses

## Control Lines and Firelines

**Control Line**—A control line is a combination of human-made fire lines and/or natural fire barriers (e.g., roads, rivers). A control line is necessary at every fire.

**Fireline**—A fireline refers to any person-made control line. For instance, a control line may consist of a road on one side, a river on the other. Crews will then establish a fireline in the form of a handguard, fuel free or 'dozer' line (done using heavy equipment).

**1) Fuel Free**—is when a buffer is constructed between the fire and unburned fuels. A fuel free line is essentially a road built through the bush. This is work not done using heavy machinery but by hand by tree fallers who eliminate all burnable material, aside from the duff layer, within the intended area. Swampers follow behind and remove the fallen material. This is largely done in areas that are inaccessible to heavy equipment such as steep terrain. It is very labour intensive work.

**2) Hand Guard**—is a trench 45 to 60 cm in width built entirely by crews who must reach mineral soil. Edges of the trench must be clean and distinct and the depth is predicated on how quickly mineral soil is

reached. This is a very labour intensive job and one in which the Pulaski is most useful. Done well, it will prevent ground fire from spreading.

For a hand guard to be successful it must be constructed in conjunction with a Fuel Free line and as close as possible to the actual fire or burned off to reduce the fuel.

**3) Dozer Line**—a dozer line is a line which is built using heavy equipment including a bulldozer, an excavator, a skidder and/or a feller buncher. The result is a wide control line that is 5 to 10 metres wide, and down to mineral soil in depth. The heavy equipment is used to completely remove timber from the control line. Dozer lines are used primarily on large fires where equipment can be used. Heavy equipment can not be used on extremely steep terrain.

**Line Location**— is the process of determining where a control line will be established and then flagging the intended route. This is done before the line is constructed to ensure that efficient and effective routes are selected and located in favourable terrain, avoiding sharp bends or corners.

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June 21, 2016  
is  
National  
Aboriginal Day

We would like to  
recognize all  
those who work  
in the Coastal Fire  
Centre with  
First Nations  
Heritage.

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To Date  
in Coastal

Fires to Date

Person  
Caused 50

Lighting  
Caused 2

Total  
Number  
of Fires 52

Fire Danger  
Rating today



Current Prohibitions  
(within WMB  
jurisdictional area)

Category 2  
Open Fires are  
**prohibited** within the  
Coastal Fire Centre  
except in the  
Fog Zone and  
Haida Gwaii.

Campfires are  
**allowed.**

## Fire Diary #2—West Harrison Lake (V10024)

In the early hours of May 8, 2016, a fire was reported by members of the public to the BC Wildfire Service 1-800 line. An Initial Attack (IA) crew were dispatched by helicopter to the scene at first light. Once on site the crew reported the fire was 2-3 hectares in size burning Rank 2 but was not spreading. The crew also requested the deployment of a second I/A crew and a helicopter equipped for bucketing.

On-site the crews had assessed the site and noted the location of a transmission line and cabins in the vicinity. The cabins were some distance away and the hydro line was close but not imminently threatened by the fire.

Over the course of the day, two I/A crews, 5 members of a Unit Crew, 2 Danger Tree Fallers, one officer and 3 helis were assigned to the fire in quick succession. The crews and helis worked until 'skids down' or grounding time for helicopters due to darkness. Helicopters do not work at night and although crews may overnight on a fire, crews felt comfortable leaving the fireline overnight and returning in the morning. This was due to anticipated low fire activity because of good overnight recoveries (higher relative humidities).

The next morning a full Unit Crew was assigned to the fire and by mid-morning were

able to report that the fire was 85% contained, and by evening were reporting 100% containment, with minimal 'smokes' found. The Unit Crew were able to report the fire in Patrol and ready for demob.

The next day a portion of the Unit Crew returned to demob the fire (remove any hose) and Patrol. Only 2 spots were found which were dealt



with and the crew suggested that the fire continue to be Patrolled. After several checks the fire was declared OUT on May 30, 2016.

Having the public report the fire so quickly is one of the primary reasons that this fire did not spread. Being able to get crews to the fire quickly is key in a successful outcome.

## Weather

**SYNOPSIS:** An upper trough stalled over the region supports isolated convective showers throughout the Coast again this afternoon as the airmass destabilizes with daytime heating. Otherwise, a gradual warming and drying trend continues to allow temperatures in most areas to reach (or slightly exceed) seasonal normals while humidities drop a few points lower than yesterday.

A general trend towards cooler and cloudier conditions continues to be seen over the Mid Coast today as lingering system cloud only partially dissipates this afternoon. Bands of moisture and instability tracking northward over Washington State should spread showers into parts of the South Island and Fraser zones late overnight tonight with a risk of an embedded thundershower (favouring the Island).

Showers continue to spread northward over the fire centre on Saturday with more widespread rainfall coverage within the prevailing southeasterly return-flow reaching (and south of) a rough line connecting Comox – Jervis Inlet – Whistler – Pemberton. Cooler temperatures and higher humidities should be seen across the south on Saturday while an upper ridge brings a shift towards warmer, drier & sunnier conditions to the North Island and Mid Coast.

## At Coastal

This is what we have been waiting for—'June-uary'. A cold, wet month that may bring enough rainfall to rehydrate the trees before we go into the hot summer months (and most active burning period in Coastal).

All Coastal crews and single resources have returned to work within the Fire Centre due to the rain in northern British Columbia, Ontario and Alberta.

Despite the rain, crews continue to work on prescriptions, or training projects. Crews are also taking their 'Swift Water Training' in case they are deployed to areas of the province that are flooding.