

## Incident Summary #II-848274-2019 (#12167) (FINAL)

SUPPORTING INFORMATION	Incident Date	May 5, 2019	
	Location	Revelstoke	
	Regulated industry sector	Electrical - Low voltage electrical system (30V to 750V)	
	Impact	Qty injuries	0
		Injury description	N/A
		Injury rating	None
	Damage	Damage description	A fire occurred in a residential garage being used for a marijuana/ vegetable grow operation causing significant damage to garage structure and damaging electrical wiring.
		Damage rating	Major
	Incident rating	Major	
Incident overview	A residential garage was used for a small grow operation using 'cord connected' equipment with extension cords and powerbars that caught fire and destroyed the residential garage attached to dwelling site.		
INVESTIGATION CONCLUSIONS	Site, system and components	The system was configured to operate using 'cord connected' equipment with extension cords and standard powerbars. The cord connected equipment being portable manual selectable timers to operate grow lights as well as circulation fans and filter fans to create an environmentally controlled area. Portable electric heaters were used to maintain a minimum temperature when lighting was not in operation. Electrical contactors located within a steel enclosure (not located in area of main damage) were used to alternate lighting loads so that only 1 light would operate at a certain time. Owner stated he had 3 lights that alternated operation in a 24 hour cycle.	
	Failure scenario(s)	The operation of the system in the north grow area #2 used an electric space heater that was located at floor level with a circulation fan located approx. 24" above mounted to wall, plus ventilation fan and 1000 watt HID (high-intensity discharge) lampholder located above in the near vicinity. Post fire all these items were found at floor level. The heat damage appeared to be located around the electric fan-forced heater location where a burn pattern was present on the wall. It is possible that the circulation fan dropped off the wall from excessive heat due to the fire.	
	Facts and evidence	<p>Observations from inspection of the incident site and evidence/photos provided by the City of Revelstoke Fire and Rescue Services are summarized below:</p> <ul style="list-style-type: none"> <li>- The grow operation did not show signs of additional hard wiring methods. Extension cords and plug-in equipment was used throughout utilizing 3 receptacle locations in garage.</li> <li>- Burn pattern appeared to start at low level in corner of north grow area where heater was located.</li> </ul>	

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	<ul style="list-style-type: none"><li>- The heater was a Classic, model FH211B and showed signs of extreme heat with melting of plastic enclosure. The heat level setting on the unit could not be determined due to excessive damage. Heater had built-in high limit and tip over switch features.</li><li>- Research on the heater in question found no published records of other fire related issues.</li><li>- A multiple outlet flexible cord and two mechanical timers connected showed signs of fire damage. Connection points of cord did not show evidence of electrical failure and hence not contributory to incident.</li><li>- Circulation fan appeared to have fallen from wall due to heat of the fire, landed on heater and melted/ fused together. The white plastic fan mount on wall showed no discoloration and did not appear damaged due to the fire.</li></ul>
Causes and contributing factors	The origin of the fire was likely surrounding the electric heater location at floor level in the burn pattern area. It is possible that a failure of the heater component or foreign object obstruction within the manufacturers 3 foot clearance requirement had created overheating and ignition.



Photo 1: Burn marks and soot residue on door and outside wall due to fire within (photo by Fire/Rescue)

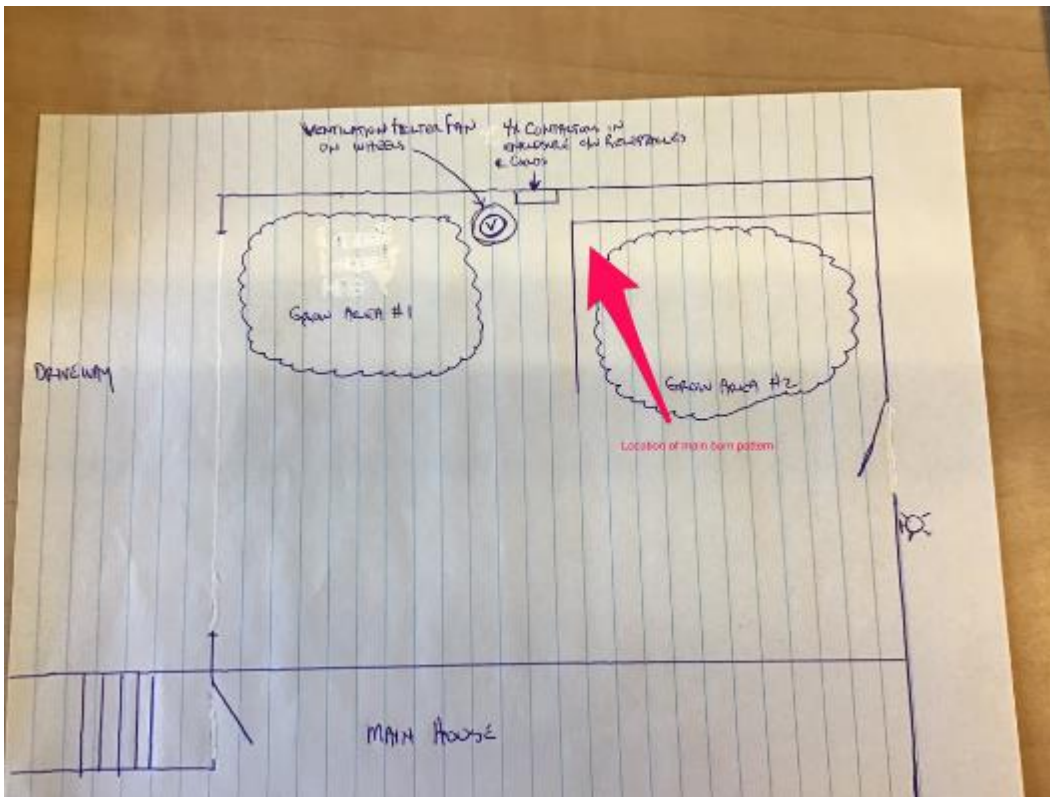


Photo 2: Diagram of layout with the garage.



Photo 3: Burn patterns on the wall near the fire origin (photo provided by Fire/Rescue)

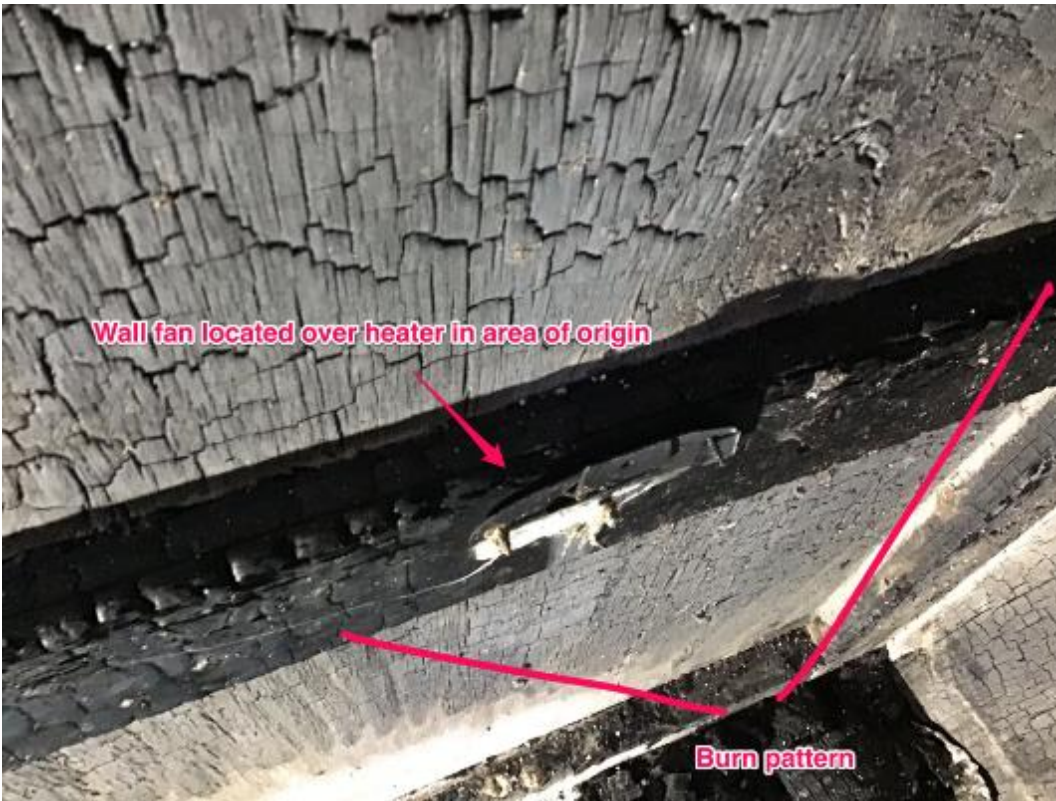


Photo 4: Burn pattern around location of wall mounted fan (photo provided by Fire/Rescue)



Photo 5: Specification label on electric heater (photo provided by Fire/Rescue)



Photo 6: Electric fan and heater partially melted together (photo provided by Fire/Rescue)

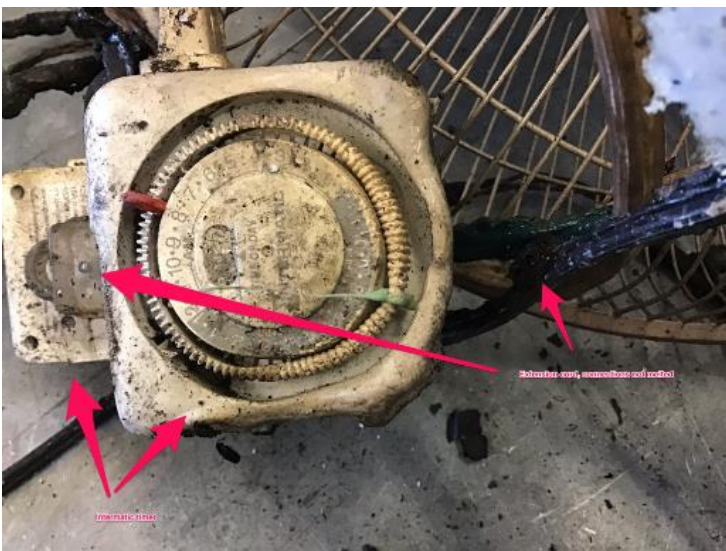


Photo 7: Timer for grow lights, partially heat damaged (photo provided by Fire/Rescue)



Photo 8: Extension cords used, significant heat damage (photo provided by Fire/Rescue)



Photo 9: Extension cords heat damaged, wiring inside steel box are not damaged (photo provided by Fire/Rescue)



Photo 10: Fire damage in South grow area #1 (photo provided by Fire/Rescue)