

Incident Summary #II-1499917-2023 (#31030) (FINAL)

SUPPORTING INFORMATION	Incident Date	January 17, 2023	
	Location	Armstrong	
	Regulated industry sector	Electrical - Low voltage electrical system (30V to 750V)	
	Impact	Qty injuries	2
		Injury description	Two people were treated for smoke inhalation attempting to personally douse the fire.
		Injury rating	Moderate
	Damage	Damage description	A single-family dwelling fire occurred that structurally destroyed a large portion of the home and damaged the remaining home with heat and smoke, additionally water from fire-fighting and possible other water ingress flooded the basement and made it inaccessible.
		Damage rating	Severe
	Incident rating	Severe	
	Incident overview	<p>The use of portable electric heaters utilized throughout home were plugged into various outlets throughout, the home had a very limited number of outlets installed due to the age of the structure. There were no notable alterations and viewed as original wiring.</p> <p>The location of fire origin in the bedroom had only 1 or 2 outlets that were operational in the room which had a portable electric heater, TV and gaming console utilized and plugged into a flexible extension cord.</p>	
INVESTIGATION CONCLUSIONS	Site, system and components	In dwellings, there are 120-volt electrical receptacles that provide power for the use of cord connected appliances/electronics which may operate lighting, powering electronics and other electrical products including space heating. The number of receptacles in a room is based on the length of the walls.	
	Failure scenario(s)	<p>In the main bedroom, the use of a flexible extension cord was noted using a wall outlet running under a bed and inserted into a wall outlet with the bed in very close proximity that likely was in contact with the cord connector at the outlet.</p> <p>The room was noted to have 'two only' outlets and noted the second outlet was not operational and therefore was not utilized.</p>	
	Facts and evidence	<p>General site:</p> <ul style="list-style-type: none"> The dwelling is an older dwelling Home pre-1960(ish) and the main floor includes 1 bedroom, entry mudroom, laundry room, master bedroom with ensuite bathroom, kitchen, living room and office area, upper floor; bedroom(s) with open hallway area and attic storage space, basement; entry from exterior was flooded, no further information available. Electrical panel was not reviewed as access to it was not possible due to flooded basement. Being an older home, it was noted the spacing of receptacles throughout were very limited and not meeting today's requirements. Use of extension cords noted throughout home with multiple electric space heaters connected were utilized. At time of incident the weather temperatures in the areas were mild, temperatures noted slightly below freezing upwards of +6 Celsius in prior 2 weeks. 	

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	<p>Heating Sources:</p> <ul style="list-style-type: none"> • Electric space heaters on extension cords. • Wood stove in living room. • Oil tank outside - advised that it was not in use as the system was not functional. • Propane tanks outside - equipment not noted (no feedback from homeowner was provided). • There were no noted alterations based on photos provided and areas appear to be the original. <p>Interviews: Fire Department</p> <ul style="list-style-type: none"> • Owners attempted to put out the fire found in bedroom with no success which likely was the cause of smoke inhalation. • An extension cord was noted running under a bed to a wall outlet with an electric space heater/TV and gaming equipment plugged in for use. • Discussions with Fire Department led to the area of origin in main bedroom where cord was plugged into a wall. • Existing oil tank located outside was noted as not operational and not in use. <p>Site Photos:</p> <p>Thermal line – a visible and identifiable line found in structures where high temperatures were present during combustion.</p> <ul style="list-style-type: none"> • The major fire damage was found located within the bedroom on the main floor, through the ceiling, attic and through roof. • The deepest charring was found on an exterior wall where an electrical outlet was located on north-west corner, the charring was deep into the studs and into exterior wood sheathing near the floor level. • The fire burn pattern reflects it burned in an upward direction, window was broken providing additional oxygen and eventually burning through ceiling, into attic and through roof. • Attached rooms areas showed signs of heat thermal line patterns in the upper half of the walls and heavy smoke damage. • The kitchen, living room and office area had no fire damage, less heat damage but major smoke damage. • The rooms on the upper floor, received heavy smoke damage; no thermal lines noted. The attic space on same side of bedroom where fire occurred had fire damage above area where fire broke through ceiling, attic area and through roof, the area north of that space is noted to include heat and heavy smoke damage. • Prior incidents and investigations provide supporting evidence the use of electric space heaters (if of the 1500 watt) have history of cord ends overheating. The space heater characteristics on this site could not be confirmed.
<p>Causes and contributing factors</p>	<p>It is very likely the incident of origin was the wall electrical outlet at the South-West side of bedroom where damage to the cord connector and receptacle overheated and shorted causing the fire. The reasons for this could include the bed mattress location 'in contact' with the cord end inserted in the outlet adding undue pressure/damage wearing on the cord connector and/or the load on the cord overheated the cord connector at the outlet location.</p>

January ▾ 2023 ▾						DAILY →
S	M	T	W	T	F	S
1	2	3	4	5	6	7
2° -2°	1° -2°	1° -3°	1° -6°	0° -8°	5° -5°	4° -2°
8	9	10	11	12	13	14
2° 0°	2° -2°	4° -1°	1° -1°	3° 0°	4° 1°	4° 1°
15	16	Date of Incident 17	18	19	20	21
3° 0°	5° 0°	6° 0°	3° 1°	2° -3°	-1° -5°	0° -7°

General temperatures related around date if Incident noted mild temperatures for the time of Season



Photo 1 - Front side of dwelling from Southeast direction showing smoke only damage at front with windows intact.



Photo 2 - Backside of dwelling from Northwest side, roof burnt through near South end upper floor.



Photo 3 - Basement where service panel was located - no access or photos to review, access is from exterior only. Entry from exterior was flooded, with no further information available.



Photo 4 - Interior Southwards into mud room towards kitchen and bedroom/bathroom areas.



Photo 5 - Upper area within bathroom with heat/smoke damage as well as wall burnt through from bedroom area on left. The bedroom was fully involved during fire.



Photo 6 – Origin of fire: Bedroom. Lower area studs with surface charring and the upper section of studs provide deep charring from fire within room. One receptacle (1 of 2 only in room) near back wall was noted as not operational prior to fire. The TV, gaming console and space heater were buried in the debris.

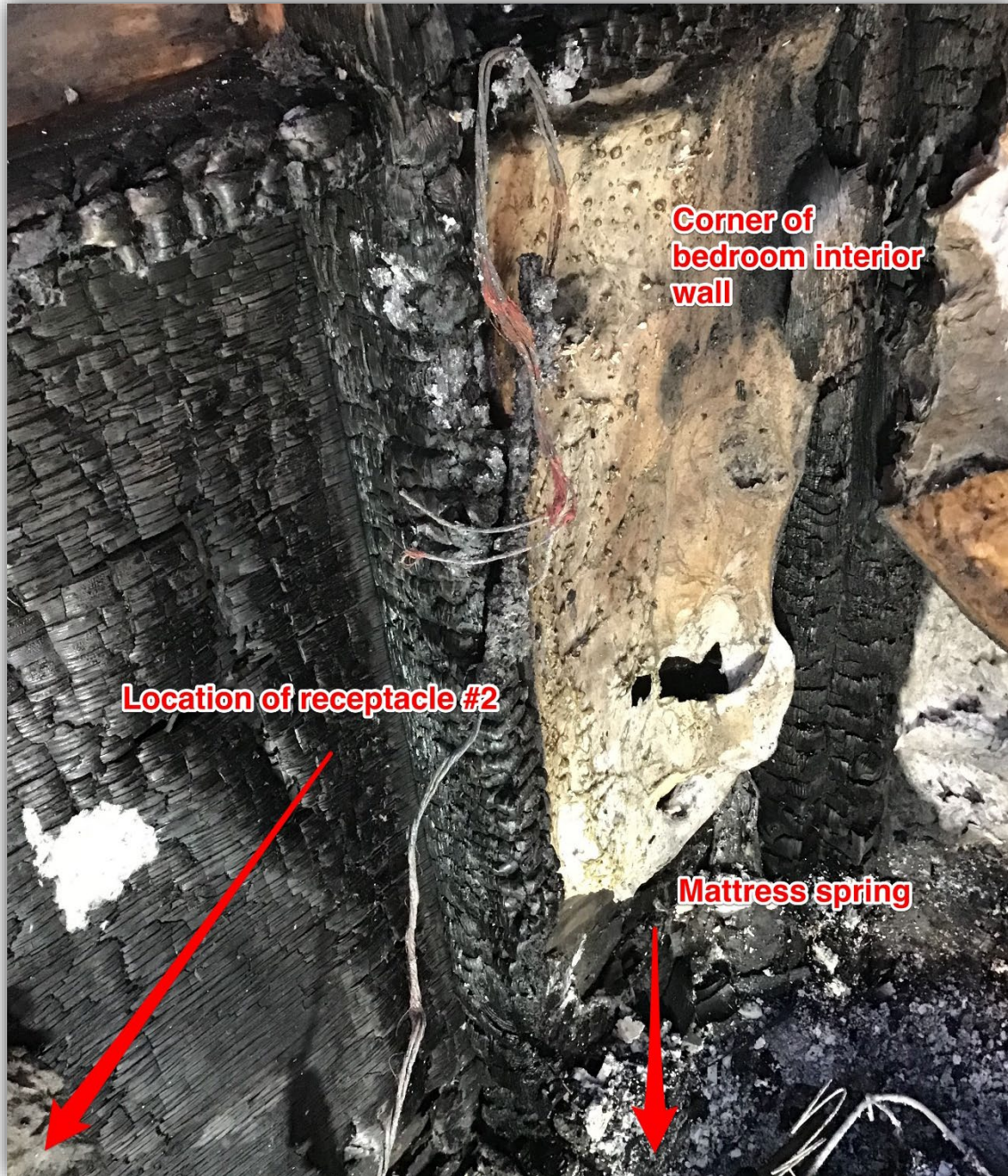


Photo 7 - View just above receptacle - fire spread within the area likely due to bed against wall igniting and spreading horizontally and upwards.



Photo 8 - View from inside back patio door through mud room towards kitchen East.



Photo 9 - Upper bedroom floor; North bedroom, with heat and smoke damage.