

## Incident Summary #II-1311754-2022 (#25721) (FINAL)

SUPPORTING INFORMATION	Incident Date	January 9, 2022	
	Location	Duncan	
	Regulated industry sector	Electrical - Low voltage electrical system (30V to 750V)	
	Impact Injury	Qty injuries	0
		Injury description	N/A
		Injury rating	None
	Damage	Damage description	Heavy charring of wall and roof trusses.
		Damage rating	Moderate
	Incident rating	Moderate	
Incident overview	A recessed wall mount electric forced air heater appears to have caused a fire.		
INVESTIGATION CONCLUSIONS	Site, system and components	<p>240v, 1500/750watt, forced air electric heater. Manufacturer Dimplex, Model 6100790000, Mod A, Date Code 0406</p> <p>The electric heater is designed to be installed inside a wall cavity. The heater uses a fan attached to an electric motor to move air across electrical heating elements to heat the space.</p>	
	Failure scenario(s)	The fan in an electric wall mounted heater became detached from the motor shaft. The reduction in airflow allowed the electric heater to overheat and started a fire in the surrounding combustible wall.	
	Facts and evidence	<p>The burn pattern indicated the fire started in the vicinity of the heater.</p> <p>The cable feeding the heater was burnt. The cable was the proper size for the application and there was no code violation noted with the feed.</p> <p>The heater was wired for 750watt operation. No deficiencies were noted with the wiring. There was corrosion noted on the heating elements and motor of the heater.</p> <p>When the cover was removed to inspect the internal mechanisms of the heater, the impeller fan fell out of the unit. The impeller had become detached from the motor shaft.</p> <p>The owner had noted that the heater had been acquired used and had been in operation for approximately 3 years.</p>	
	Causes and contributing factors	It is likely that the fire was caused by the heater. The manufactures states that blocking or reducing the air flow through these heaters can result in a fire. It is possible that the impeller became detached from the shaft and stopped circulating air, this would have caused the unit to overheat. The unit is equipped with a thermal	

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overload, it is unclear whether it was functioning correctly. The unit was used, and there was corrosion noted inside the heater.



Image 1 - Heater with cover removed. Note the impeller is not attached to the motor shaft.



Image 2 - Heater with cover removed.



Image 3 - Image showing location where fire started. Note the damage to the center stud where the heater was attached.



Image 4 - Heater with cover off.