Incident Summary #II-1160703-2021 (#21095) (FINAL)

SUPPORTING INFORMATION	Incident Date		March 11, 2021
	Location		Abbotsford BC
	Regulated industry sector		Gas - Natural gas system
	Impact – Injury	Qty injuries	0
		Injury description	None
		Injury rating	None
	Impact – Damage	Damage description	Fire damage to gas fired infrared radiant tube Heater in warehouse and fire damage to combustibles stored in the warehouse.
		Damage rating	Moderate
	Incident rating		Moderate
	Incident overview		A fire broke out in a warehouse where many pallets of cardboard boxes where being kept. The fire destroyed many cardboard boxes and badly damaged a tube heater hanging above these materials.
INVESTIGATION CONCLUSIONS	Site, system and components		Infrared radiant tube heaters are commonly used in warehouses, shops, garages etc. They use a burner box that sends a flame down the inside of sections of tubes where the heat radiates from these tubes and heat objects below them. Like most gas appliances, there are minimum clearances to combustibles that need to be maintained to guarantee safe operation.
	Failure scenario(s)		A radiant tube heater was badly damaged after combustible materials below caught fire.
	Facts and evidence		-Tube heaters were 205,000 BTU model. -Installation manual states a minimum clearance to combustibles directly below tube heater to be 80 Inches (See manufacturer's instructions below) -Throughout warehouse, combustibles were being stored in very close proximity (approximately 12") to tube heaters (See Picture below)
	Causes and contributing factors		

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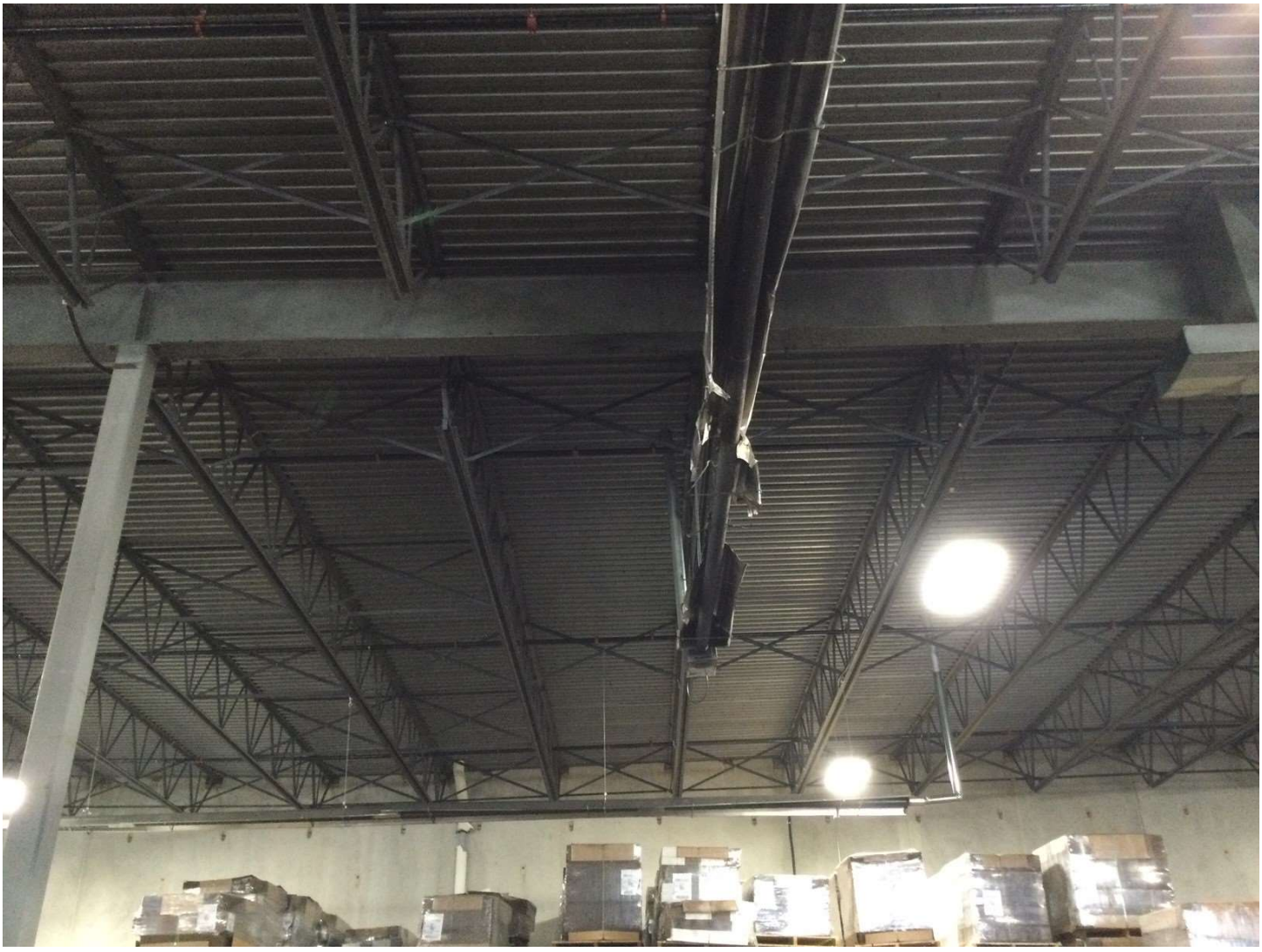
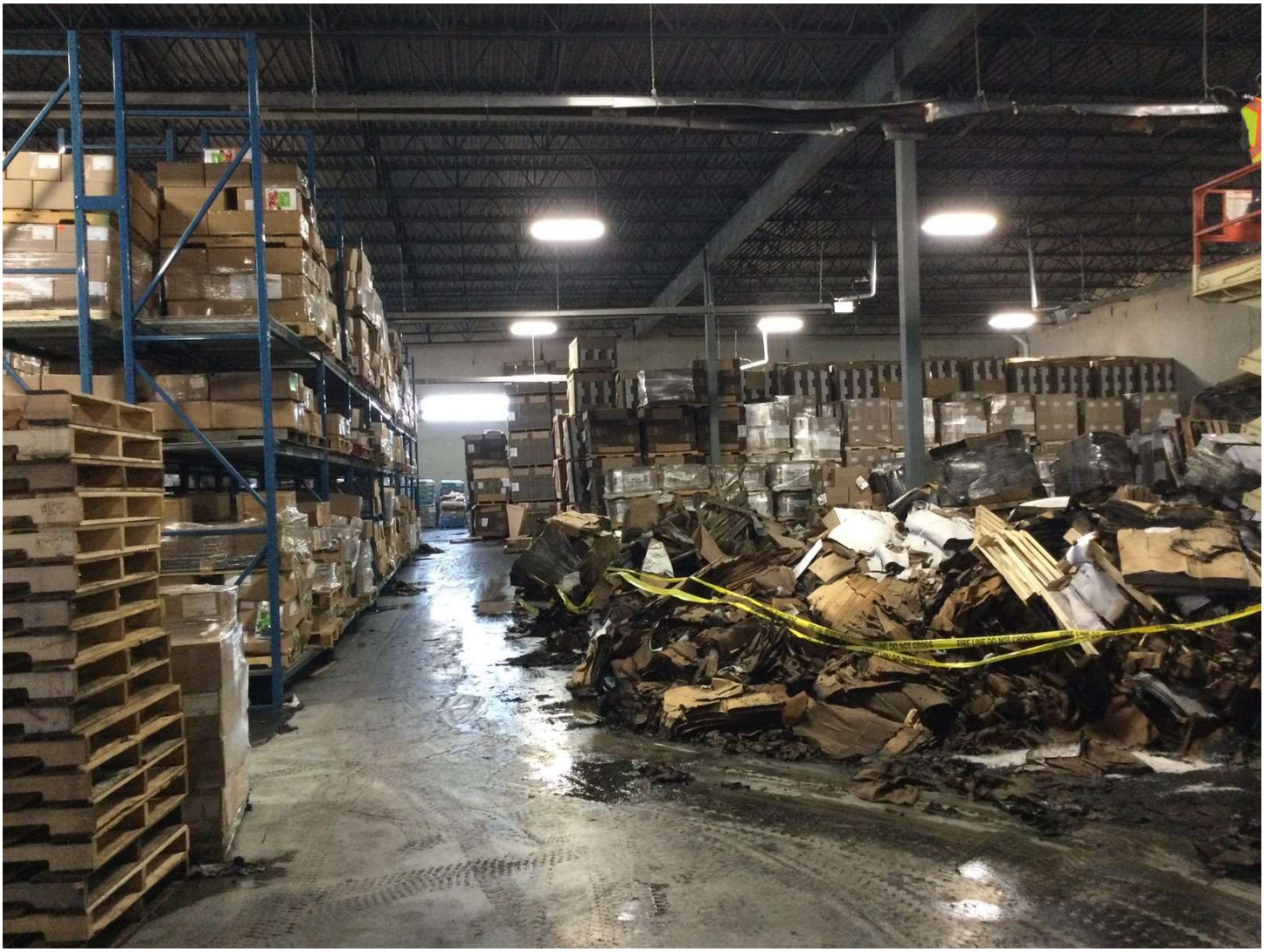
It is very likely that the combustible materials being stored directly underneath the heaters were too close and caught fire, causing damage to the tube heater hanging directly above.



Fire Damage to tube heater

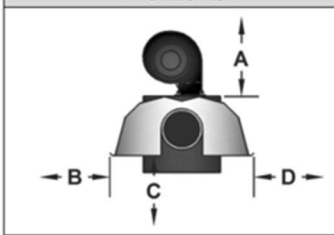
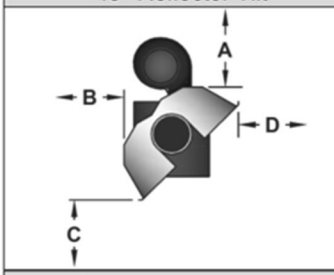
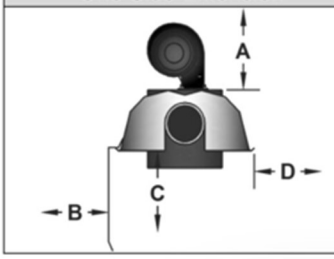


Fire damage to tube heater and burnt cardboard below heater.

Tube heater in close proximity to combustibles (less than 80 inches). This is another heater that was not damaged but shows how close the combustible materials may have been to the heater.

Tube heater in close proximity to combustibles (less than 80 inches)

Table 2: Minimum Clearance to Combustibles Inches (cm)

Reflector Configurations	Dim In (cm)	Model No.: WTS 40 MBH	60 MBH	80 MBH	100 MBH	125 MBH	150 MBH	175 MBH	205 MBH
Horizontal 	A	2(5)	2(5)	2(5)	2(5)	4(10)	4(10)	6(15)	6(15)
	B	18(46)	25(63)	26(66)	30(76)	33(84)	36(91)	40(102)	44(46)
	C	45(114)	58(147)	62(157)	67(170)	71(180)	74(188)	78(198)	80(203)
	D	18(46)	25(63)	26(66)	30(76)	33(84)	36(91)	40(102)	44(46)
45° Reflector Tilt 	A	4(10)	4(10)	4(10)	4(10)	6(15)	6(15)	8(20)	8(20)
	B	4(10)	4(10)	4(10)	4(10)	4(10)	4(10)	4(10)	4(10)
	C	40(102)	50(127)	58(147)	67(170)	70(178)	71(180)	74(188)	78(198)
	D	38(97)	46(117)	50(127)	58(147)	63(160)	64(163)	67(170)	72(183)
One Side Extension 	A	2(5)	2(5)	2(5)	2(5)	4(10)	4(10)	6(15)	6(15)
	B	4(10)	4(10)	4(10)	4(10)	4(10)	4(10)	6(15)	6(15)
	C	50(127)	58(147)	63(160)	73(185)	76(193)	78(198)	80(203)	84(203)
	D	35(89)	38(97)	42(107)	45(114)	50(127)	52(132)	54(137)	56(142)

Minimum clearances to combustibles as outlined in the manufacturers installation instructions.