

Incident Summary Report II-729058-2018 (8210)

SUPPORTING INFORMATION	Incident Date	August 7, 2018	
	Location	Penticton	
	Regulated industry sector	Amusement Devices - Amusement ride	
	Impact	Qty injuries	1
		Injury description	Sore ribs and neck; fell unconscious; squished by other passengers
		Injury rating	Minor
	Damage	Damage description	None
		Damage rating	None
Incident rating	Minor		
Incident overview	The amusement ride was operating at a speed (RPM) over the manufacture specifications. A rider became unconscious and complained of sore ribs and neck.		
INVESTIGATION CONCLUSIONS	Site, system and components	The amusement ride is driven by hydraulic power. A hydraulic pump provides the flow of hydraulic fluid to hydraulic motors. The hydraulic motor execute the operation of the ride. A hydraulic flow control (restrictor) valve is placed between the pump and motor. It is used to reduce the fluid flow rate which will reduce actuator (hydraulic motor) speed.	
	Failure scenario(s)	The hydraulic flow control valve was not secured in a set position. This amusement ride is setup and moved on weekly basis, allowing for components to become inadvertently adjusted.	
	Facts and evidence	<p>Incident Investigation the following day discovered:</p> <ul style="list-style-type: none"> - A lock nut (jam nut) was missing on the hydraulic flow control valve - Ride was recorded operating 20% over speed - Daily ride checks did not include ride RPM - No documentation of ride speed for this setup location <p>As reported by the rider:</p> <ul style="list-style-type: none"> - Fell unconscious during ride - Complained of sore ribs and back - Seated with son and daughter <p>As reported by the contractor:</p> <ul style="list-style-type: none"> - Rider exited by herself unassisted - Daily checks were performed prior to operation - Each setup owner/contractor operates each ride, not documented 	
	Causes and contributing factors	It is very likely that a missing lock nut on the hydraulic flow control valve caused the valve to be adjusted resulting in ride operating too fast. The incompleteness of the daily and setup checks of ride speed is a contributing factor.	

Main Spindle with Electric Motor, Hydraulic Pump and Flow Control Valve

