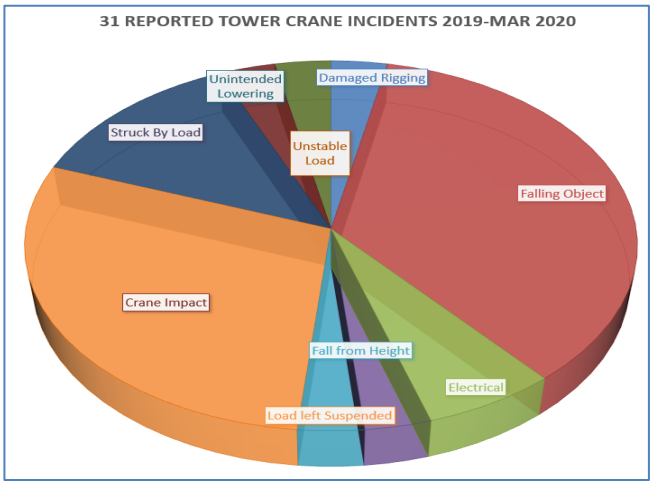
CICA – Vic / Tas Branch
Crane Safety Bulletin
#269 June 2020

Tower crane Safety: When we study crane incident data, the first conclusion we arrive at, is that different types of cranes operating in Victoria have very different incident and causality breakdowns. Tower cranes differ significantly from the mobile crane sector due to their high frequency of lifts, lack of visual site line from driver to dogman and vast array of other trades in close proximity. We must also be aware that the challenges and nature of work for a luffing tower crane 80 floors up in the CBD has very different hazards and challenges to a hammerhead crane constructing medium density apartments out in the suburbs. **In this bulletin we will shed some light on the nature of the incidents involving tower cranes over the past 18 months.**

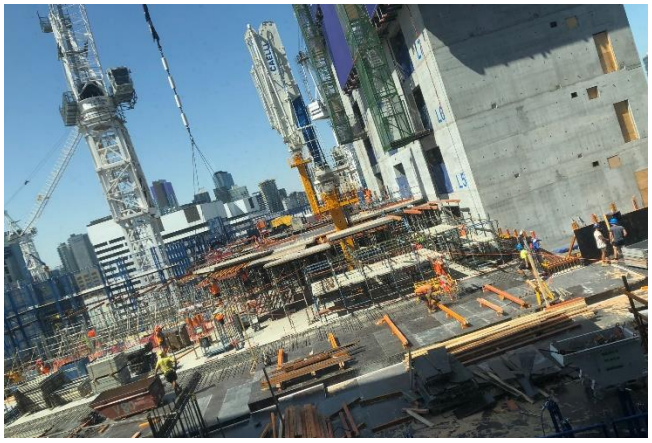
In 2019, we had 28 reported incidents that involved a tower crane and fortunately, only 3 in Q1 2020, putting us in a good position to improve on last year's annual figures. See **Chart1** below.



The dominant hazards were Crane Impact and 'Falling Object' which we spoke about in Bulletin 267. 'Struck by Load' and 'Electrical' made up the remainder of the significant categories.

When we filter these 31 incidents for injuries, the 'Struck by Load' incident type is responsible for 4 out of 6 injuries. Of these 4 cases, 3 were hand/finger and one was head/facial. There is a single 'Fall from Height' case resulting in serious fractures and the remaining injury was minor in nature.

The 'Crane Impact' hazard means a crane striking another object or piece of plant unintentionally with its boom, counterweight, rope, load or empty hook. "Crane Impacts" featured in 9 of 31 recorded incidents involving tower cranes (TC) to date. In 4 out of 9 cases, the impact was between a TC and a concrete pump (see photo) Although in one case the Concrete pump arm struck the stationary crane boom. 2 cases were between a TC and scaffolding, 2 were TC impacting another TC and the remainder was a TC Impact with a mobile crane. All contacts were minor in nature however 3 of these created a secondary 'Falling Object' instance additional to 11 recorded and represented in the Chart1 above.



Causal Factors for the 9 'Crane Impacts' were made up of 3 "Snagged loads" of which 2 were scaffolding related (1 empty hook and one tag line).

The Causal factors for the remaining 6 TC Crane Impacts particularly 'Crane hitting Crane' are hard to determine due to the low energy nature of the impact, lack of damage and lack of information about noise/ interference factors. One incident description written on the day does state 'Driver Error' however we do also need to look upstream for more comprehensive causality. Looking at the photo above we can see just how busy a CBD high rise construction site can be, and how easy it is to have unintentional contact from a load, empty hook or boom. This photo was taken at lunch time so there are usually many more workers potentially underneath the lift path. Dense scaffolding, countless piles of material and bins mean that space is at a premium. This CICA/Worksafe Crane Incident Data Project is in it's infancy but for tower cranes, we can see some early trends toward spacial and site constraint related hazards like 'Crane Impacts' and 'Struck by load'. Those combined with the frequent 'Falling Object' cases are a worrying sign when we consider the density of workers onsite and the close public areas. Lingard, H., Cooke, T. and Gharaie, 2015 Summarised the causal roots of 22 fatal accidents 2004-2013 as follows:

The similarities are showing through already. And we must focus on upstream prevention to achieve the maximum incident reduction. *Stay Safe -CICA*