This document will document my feedback and suggest that I made for the Backhoe, and I will talk about the problems I encountered while testing the backhoe.

## Problems:

* The sim runs into the same issues as trucking inspection sim where it runs slower on chrome than other web browsers.
* When you paused the scenario there is no dedicated exit button.
* Mouse input is sometimes slow and unresponsive.
* Can not get a 360 view of the part that I’m inspecting.
* Camera system needs to be improved.
* The texture on labels on the button in the interior need to be cleaned up.

## Suggestions:

* Allow the user moved around the backhoe who freely, this will help the user inspect the backhoe more freely.
* Label in the individual parts of the backhoe, it helps the user find that specific part more easily when user ‘s mouse hover an individual part.
* Have checklist of the current task.
* Make sure the highlight color is consistence, when highlighting individual part its yellow or blue and when it’s small individual part, it highlights it in yellow or blue. So, make sure the highlight color is one color for consistence.
* In the future it this sim should be considered to get VR treatment; I believe it really benefit because it makes students feel more immersed in the sim which means they will be more invested in what they are learning.
* When a student gets stuck at a certain part of the inspection process for example: there stuck the part where they have to inspect the boom so they can go the menu, press tutorial, select how to inspect the boom.

## Overall Impression:

Overall, my impression of the heavy equipment backhoe sim is pretty good; I enjoyed testing the sim. Getting to inspect this machine got me invested in learning more about the backhoe, and I felt like I was actually inspecting the backhoe, that's how much I was immersed in the process.

One of my favourite features is that whenever you open the sim, it randomly generates problems, keeping you on your toes and giving a different experience, which keeps the experience fresh. The problem, as I mentioned in the video walkthrough and the document, needs to be addressed. Once the problem and suggestions are implemented in the sim, this sim is ready to go.

## Pre-Requisites Before Playing The Sim:

* Three point contact video: Video explains the three point contact:<https://www.youtube.com/watch?v=fv8W_agW1dM>
* This video explains how to do a pre-operation inspection on a backhoe, doing walk around of the backhoe and checking any damage and wear, some of the examples and many more what video goes through:<https://www.youtube.com/watch?v=Um68h-td5PU>
* This website explains different parts of the backhoe: <https://www.bigrentz.com/blog/parts-of-a-backhoe>
* This website explains the five basics of backhoe-loader maintenance:<https://www.forconstructionpros.com/equipment/earthmoving/backhoe-loaders/article/20982988/rdo-equipment-co-five-basics-of-backhoeloader-maintenance>