



## 4. Heavy Equipment Operator Manual

### General Overview:

Seated experience.

- In heavy equipment operator, the user will drive and operate a large excavator
- The user will need to work multiple levers inside the cabin of a large excavator, collecting rocks using the bucket and dumping them into dump trucks.
- The experience takes place at a construction site with a large trench running between down the middle of the area.

### Macros / Shortcut keys:

R = Reset the player's view

K = Resets the location of the key

P = Reset the dump truck if it gets into a weird location.

Y = Inserts the key into the ignition and starts the machine

N = Removes the key from the ignition and turns off the machine

**Wrist Watch:** The wrist watch is always on the user's left wrist. When a call is coming in for the user, the icon on the watch will be an orange vibrating phone (Image 1 below). They must place their right hand on top of the watch and a blue circular progress bar will fill up (Image 2 below). Once it is filled, the call will be answered and the watch icon will become a green chat bubble (Image 3 below). When the call is finished, the watch icon will become a yellow question mark (Image 4 below). When the yellow question mark is visible, the user can place their right hand on top of the watch and the narrator will repeat the last set of instructions.



Image 1



Image 2

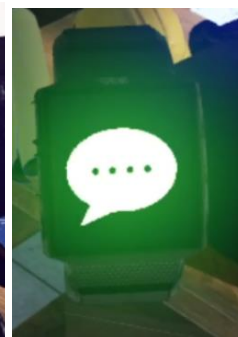


Image 3

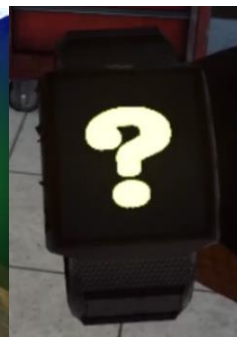


Image 4

**Facilitator Panel:** The facilitator panel is an options menu that allows a simulation facilitator to adjust gameplay and accessibility options while a user is inside the experience. To access the facilitator panel during the simulation, press the TAB key.



There are five core options from this menu:

**Hint Task:** When pressed, the in-game narrator will repeat their most recent instruction, which is helpful if the user misses something or is distracted while in the simulation.

**Print Screen:** This button will save a screenshot of the current view that the user sees.

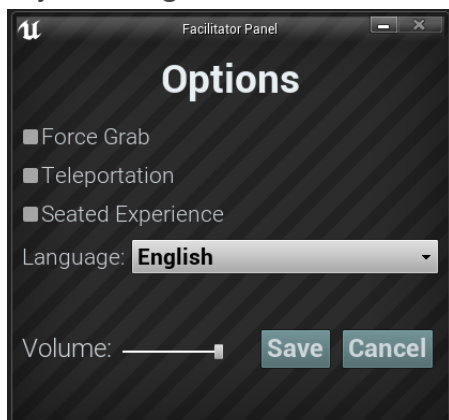
**Settings:** This will bring the facilitator into a separate menu screen where they have multiple options to change the experience. This is detailed below.

**Restart:** This will restart the simulation from the very beginning.

**Quit:** This will exit the experience.

**Greyed out buttons:** Finish Task & Restart Task - These functions are not currently working but will be implemented in the near future.

**Settings:** The gameplay settings have an additional set of toggles and sliders the facilitator can adjust during the simulation.



**Force Grab:** If someone is unable to reach something or is running the experience while seated, this option allows the user to grab objects without being directly next to them. The user can

point their hands at objects that are far away and pulling the trigger will bring the object into their hand, grabbing it

**Teleportation:** Teleportation can be turned on or off, however, is not required in this simulation as it is a seated experience.

**Seated Experience:** When turned on, this option will move the user's location in the game world to be higher up, so that if they are sitting down, their view will be similar to a standing position.

**Language:** This drop-down menu will allow the facilitator to change the language of the experience. When changing language, the simulation will need to restart.

**Volume:** This slider will adjust the master volume of the game. If the sliding bar is on the right side, the volume will be at 100% and on the left side, the volume will be set to 0%.

**Full written walkthrough:**

Quest	Task	Description
1	A	Answer your watch by holding your right hand above the watch icon on your left wrist
1	B	Listen to introduction about the career
1	C	Grab the key floating above the ignition down and to the right. Press "K" if the user loses the key to reset it's position
1	D	Stick the key into the ignition and it will turn on the excavator. If the user loses the key, press "Y" to automatically start the machine.
1	E	Listen to information about the small right joystick. This controls the bucket boom and curl.
1	F	Grab the small right joystick and push it away from yourself to move the boom down. Hold the joystick in this position for at least one second to progress
1	G	Grab the small right joystick and pull it towards yourself to move the boom up. Hold the joystick in this position for at least one second to progress
1	H	Grab the small right joystick and tilt it to the right to curl your bucket in. Hold the joystick in this position for at least one second to progress
1	I	Grab the small right joystick and tilt it to the left to curl your bucket out. Hold the joystick in this position for at least one second to progress
1	J	Listen to information about the small left joystick. This controls the excavator dipper and carriage rotation.
1	K	Grab the small left joystick and push it away from yourself to move the dipper away. Hold the joystick in this position for at least one second to progress
1	L	Grab the small left joystick and pull it towards yourself to move the dipper in. Hold

		the joystick in this position for at least one second to progress
1	M	Grab the small left joystick and tilt it to the left or right to rotate the cabin of the excavator. Rotate the cabin to the right or left to progress
1	N	Grab the small left joystick and tilt it to the left or right until the cabin is facing forwards as indicated by the arrow
1	O	Listen to information about the two front T-shaped levers. These control the two tracks of the excavator and are used to move forwards or backwards
1	P	Grab the front left lever and push it away from yourself to move the left excavator track forward, turning the excavator to the right. Hold the lever in this position for at least one second to progress
1	Q	Grab the front left lever and pull it towards yourself to move the left excavator track backwards, turning the excavator to the left. Hold the lever in this position for at least one second to progress
1	R	Grab the front right lever and push it away from yourself to move the right excavator track forward, turning the excavator to the left. Hold the lever in this position for at least one second to progress
1	S	Grab the front right lever and pull it towards yourself to move the right excavator track backwards, turning the excavator to the right. Hold the lever in this position for at least one second to progress
1	T	Grab the front left and right levers and pull them both towards yourself to drive the excavator backwards or push them both away from yourself to drive forwards. Drive along the guided path to the designated digging area as indicated by the yellow box.
1	U	Listen to information about the digging site
2	A	Answer your watch by holding your right hand above the watch icon on your left hand
2	B	Wait until the truck driver is close to the excavator then pull the horn that hangs on the right side of the roof. The driver will automatically stop if you do not honk. If you honk too early, pull the horn twice and they'll keep moving back.
2	C	Pick up rocks from the ditch and unload them into the truck. It will take 2-4 buckets worth of rocks to fill the truck.
2	D	Wait until the truck driver leaves
3	A	Answer your watch by holding your right hand above the watch icon on your left hand
3	B	Wait until the dump truck driver is close to the excavator then pull the horn that hangs on the right side of the roof. The driver will automatically stop if you do not honk. If you honk too early, pull the horn twice and they'll keep moving back

3	C	Pick up rocks from the ditch and unload them into the truck. It will take 2-4 buckets worth of rocks to fill the truck.
3	D	Wait until the truck driver leaves
4	A	Answer your watch by holding your right hand above the watch icon on your left hand
4	B	Drive the excavator to the indicated finish area.
4	C	Grab the key and rotate it to the left or counterclockwise to turn off the excavator
4	D	Listen to the final tips from the narrator

### **Map**

The user will be working at a construction site where a large trench is being excavated.



## Key Objects

Note: To use all joysticks, the user must grab onto them with the main trigger on the back of the VR controller.

**Excavator:** This is the main vehicle that the user will operate in the simulation. The user will be able to drive it around the level and operate the boom and shovel using two joysticks inside the cabin.



**Left Bucket Joystick:** Pushing it forward, away from the user moves the dipper away. Pulling it backwards, towards the user moves the dipper in. Tilting it to the left or right to rotate the cabin of the excavator in that direction.



**Right Bucket Joystick:** Pushing it forward, away from the user moves the boom down. Pulling it backwards, towards the user moves the boom up. Tilting it to the right curls the bucket in. Tilting it to the left to curl the bucket out.



**Left Track Joystick:** Pushing it forward, away from the user moves the left excavator track forward, turning the excavator to the right. Pulling it backwards, towards the user moves the left excavator track backwards, turning the excavator to the left. Pushing both the left and right track levers forward, away from the user drives the excavator forwards. Pulling both the left and right track levers backwards, towards the user drives the excavator backwards.



**Right Track Joystick:** Pushing it forward, away from the user moves the right excavator track forward, turning the excavator to the left. Pulling it backwards, towards the user moves the right excavator track backwards, turning the excavator to the right. Pushing both the left and right track levers forward, away from the user drives the excavator forwards. Pulling both the left and right track levers backwards, towards the user drives the excavator backwards.



**Key & Ignition:** The key and ignition are located on the right side of the driver's seat. The user can grab and then place it into the ignition starting the machine.





**Horn:** Grab onto the horn and pull it down once it will sound the horn of the excavator. This can be used to signal the truck drivers to stop backing up. Honking the horn twice in quick succession will tell the truck drivers to back up more.



**Dump Trucks:** The dump trucks back up towards the user and will either stop when the horn is pulled or if they reach the excavator. The dump trucks will leave once they have been filled with 2-4 scoops of rock from the user.



**Freeplay vs. Tutorial:**

In the tutorial mode of heavy equipment operator, the narrator will teach the user how to drive the large excavator, both moving it around the area and how to use the joysticks that control the shovel and boom. Once the narrator has finished the explanation of how to operate the machine, they guide the player to the excavation site where they must remove rocks from a trench and fill two dump trucks. These trucks come one at a time and require the user to fill them with 2 to 4 scoops of rocks.

In the freeplay mode, the user can drive to the trench right away and dump trucks will automatically come to be filled up. The user can fill up as many trucks as they wish.

**Common Issues:**

**Issue 1:** The dump truck has stopped too far away from the trench.

Fix: To get the dump truck to move back closer to the trench, the user must pull the horn twice in quick succession and the truck will continue to move.