



15. Steel Production Worker Manual

General Overview:

Seated experience.

- In the steel production worker simulation, the user will get to work on a large basic oxygen furnace which is used to produce molten steel from molten iron.
- The user will beginning experience in a control room overlooking the large production floor and we'll need to prepare for their tasks
- The user will control large machinery such as a magnet crane, scrap box, and iron ladle inside the production facility using joysticks, levers and buttons.
- The user will need to perform a heat, which is when a mixture of scrap metal and molten iron are blasted with high pressure oxygen used to melt the mixture down into steel.

Macros / Shortcut keys:

R = reset the player's view

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.

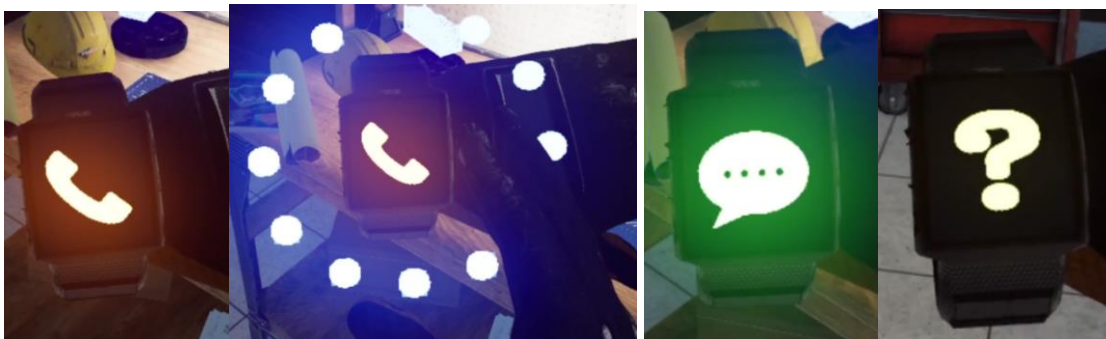


Image 1

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.

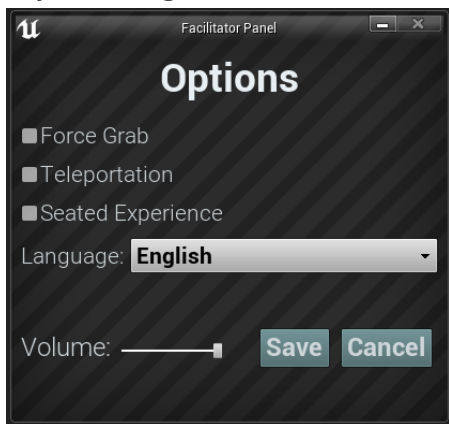
Settings: This will bring the facilitator into a separate menu screen where they have multiple options to change the experience. This is detailed below.

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: This will turn on the granular teleportation around the game world. To use teleportation 1) hold down the center thumbpad button (Vive Pro) or push forward on the thumb joystick (Oculus Rift S) to create a blue teleportation arc 2) select a location to go by moving the controller until the blue circle at the end of the arc is in the desired location (A red line means that location is not valid or blocked) and 3) release the center thumbpad button (Vive and Vive Pro) or thumb joystick (Oculus Rift S) which will cause the screen will quickly fade to black and when it fades back in, the user will be in a new location.

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	call	Answer your watch by holding your right hand above the watch icon on your left wrist
1	info1	Listen to the narrator go over general information about the career
1	info2	Listen to the narrator go over the safety equipment
1	safety	Grab the safety equipment from the table. These are the hardhat, safety glasses and earplugs
1	outro1	Listen to the narrator go over final information about safety equipment before beginning your task
2	grabOrder	Grab the work order from the table.
2	info1	Listen to the narrator go over information about the work order
2	selectC	Select carbon from the keyboard in front of the user using the C button
2	info2	Listen to the narrator go over information on how to determine the amount of carbon to add
2	inputC	Input the amount of carbon the steel grade will need, which is 1.

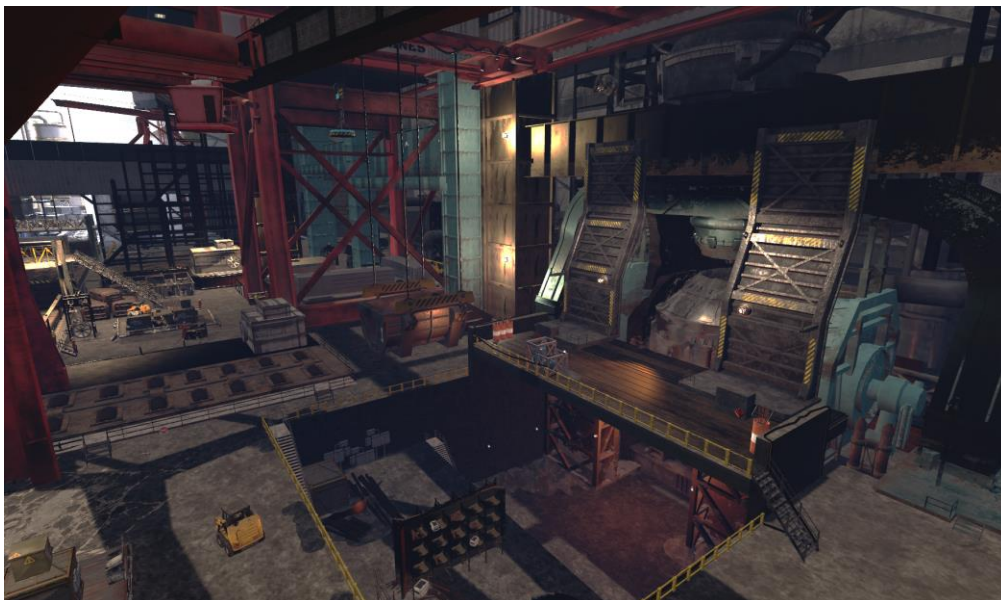
2	inputAll	Input all the other elements using the work order to determine how much of each quantity is required
2	outro	Listen to the narrator go over some final information about the control room
3	cabin	Move to the first control cabin by using the green button on the left side of the table
3	cabinInfo	Listen to the narrator go over how the cabin works and a brief overview of the tasks for the day
3	control1	Listen to the narrator explain an overview of the joystick, which is used for moving the machines around on the horizontal axis
3	control2	Listen to the narrator explain an overview of the sliding lever which is used to change which machine is being controlled by the cabin
3	control3	Listen to the narrator explain an overview of the green button on the right, which is used to activate the different machines.
3	control4	Listen to the narrator explain an overview of the blue lever, which is used to move the machines up and down vertically.
3	control5	Listen to the narrator explain an overview of the screens above the controls which display information about the machines the user is controlling.
3	infoRail	Wait for the railcar to deliver scrap metal, which can be seen moving in from below
3	switchMag	Switch to the magnetic crane by moving the sliding lever on the right to position 1.
3	magOverview	Listen to the narrator explain how to control the magnet crane
3	magJoy	Move the magnet crane left and right using the red joystick
3	infoMag1	Listen to the narrator explain how to move the magnet crane up and down
3	magLever	Move the magnet crane up and down using the blue lever
3	magSwitch	Listen to the narrator explain magnetizing the crane
3	magPos1	Get the crane into position above the railcar, checking the screens about the user to see where to go
3	magOn	Magnetize the crane using the green button on the right
3	magPos2	Get the crane into position above the scrap box, checking the screens about the user to see where to go
3	magOff	Demagnetize the crane using the green button on the right

3	boxFilled	Add another load of scrap metal into the scrap box using the magnet crane
3	magClear	Move the magnet crane out of the way of the scrap box to the indicated area
3	cabinMove	Move the cabin by pressing the green button on the left
4	scrapSwitch	Switch the cabin to control the scrap box by moving the sliding lever on the right to position 2
4	infoScrap1	Listen to the narrator go over information about the scrap box
4	scrapJoy	Move the scrap box around using the red joystick
4	infoScrap2	Listen to the narrator explain the scrap box vertical movement
4	scrapLever1	Move the scrap box up and down using the blue lever
4	tiltFurnace	Tilt the oxygen furnace down to 45 degrees by radioing the pulpit team with the walkie-talkie
4	scrapPos1	Get the scrap box to the right height and position in front of the oxygen furnace using the joystick and lever
4	scrapDump	Dump the scrap metal into the oxygen furnace using the green button on the right
4	scrapPos2	Move the scrap box out of the way, to the indicated area.
4	tiltFurnace2	Tilt the oxygen furnace back to an upright position by radioing the pulpit team with the walkie-talkie
5	infoLadle	Listen to the narrator go over information about the molten iron ladle
5	ladleSwitch	Switch the cabin to control the iron ladle by moving the sliding lever on the right to position 3
5	tiltFurnace1	Tilt the oxygen furnace down to 45 degrees by radioing the pulpit team with the walkie-talkie
5	infoPos	Listen to the narrator go over information about the iron ladle
5	ladlePos1	Get the iron ladle into position just in front of the oxygen furnace using the joystick and lever
5	ladlePour	Pour molten iron into the furnace by pressing the green button
5	tiltFurnace2	Tilt the oxygen furnace back to an upright position by radioing the pulpit team with the walkie-talkie
5	ladlePos2	Move the iron ladle back to the right side of the production floor
5	controlRoom	Move back to the control room by pressing the button on the left side of the cabin

6	alloy1	Listen to the narrator introduce alloys and explain what to do back in the control room
6	alloy2	Add the alloys to the mixture by radioing the pulpit crew
6	alloy3	Listen to the narrator explain alloys
7	LanceInfo	Listen to the narrator go over information about the oxygen lance
7	LancePos1	Get the oxygen lance into position inside the oxygen furnace by pulling the sliding lever on the right down
7	LanceOn	Turn on the oxygen lance by pressing the enter button to the left of the sliding lever
7	Heat	Wait for the oxygen lance to complete its heat
7	LancePos2	Remove the oxygen lance from the furnace by pushing the sliding lever on the right up
7	info	Listen to the narrator explain the next steps in the steel cycle
7	tiltFurnace2	Tilt oxygen furnace back to pour out the molten steel into the railcars by pressing the 90 degree button on the left side of the control room
7	removeSteel	Listen to the narrator explain information about the railcars and slag
7	Outro1	Listen to the narrator go over some final notes about the career
7	End1	Wait for the simulation to end

Map

The user will work in a steel production facility where they will make molten steel using a basic oxygen furnace



Location 1 - Control Room: The control room is where the user will begin the experience and it is overlooking the production floor. They will have access to a control console with several buttons and levers that they can use to input the required elements for the type of molten steel and perform a heat using an oxygen lance. This is also where the user will equip their safety equipment.



Location 2 - Cabin: The cabin is the second location in the simulation and it is where the user will be able to control three large machines used in the steel production process. The cab is above the basic oxygen furnace. The user will be able to control the magnet crane used for unloading scrap metal into the scrap box, scrapbox which is used to unload the scrap metal into the oxygen furnace and an iron ladle which can pour in the molten iron into the scrap box.



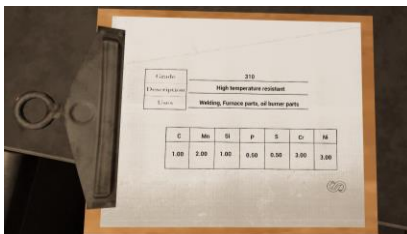
Key Objects

Note: Some objects will not be visible at the beginning of the tutorial and will only appear when they are required.

Control Desk: The control desk is located inside the control room where the user will start the simulation. The control desk has multiple buttons that the user will need to use at the beginning and the end of the simulation. On the left side of the control desk are three buttons used to change the tilt of the oxygen furnace, 0 degrees is upright, 42 degrees is the angle needed for unloading the scrap metal and molten iron and 90 degrees is the angle needed to pour out the molten steel at the end of the simulation. In the centre of the control desk are the 7 buttons that represent the main elements that go into making the requested grade of steel. On the right side of the control desk is a sliding lever that is used to adjust the values of the selected element and later used to move the oxygen lance into the oxygen furnace. Next to the sliding lever is an enter button that is used to confirm the selection of elements and turn on the oxygen lance.



Work Order: The work order is located on the control desk in the control room. It specifies the grade of steel that the user will be producing in the simulation and will detail the quantity of each element required for that steel.



Safety Equipment: The safety equipment is located on the right of the control desk in the control room. The user will need to pick up and equip the safety equipment at the beginning of the simulation. The safety equipment includes a hard hat and safety glasses.



Cabin: The cabin is where the user will control the three main machines in the simulation. There is a sliding lever on the right side of the cab that can be used to change which of the three machines is currently being controlled. 1 is the magnet crane, 2 is the scrap box, and 3 is the iron ladle. If the user adjusts which machine is currently being controlled using the sliding lever, that machine will be highlighted. Next to that sliding lever is a green button which is used to activate the main functions of each machine. This button will turn on or off the magnet of the magnet crane, dump the scrap metal inside the scrap box into the oxygen furnace, and dump the molten iron in the iron ladle into the oxygen furnace. In front of the user on the right is a large red joystick that is used to move the different machines around horizontally, moving them to the left or right forward and backward. In front of the user on the left is a blue lever, which is used to move the different machines around vertically, moving them up and down. On the left of the cabin is another green button, that will be used to move the user between locations in the production facility.



Magnet Crane: The magnet crane is located above the first area that the user will move to in the cabin. The user will be able to move the magnet crane to the left and right using the red joystick, and vertically using the blue lever. When the magnet crane is above the Railcar of scrap metal, the user can press the green button on the right side of the cabin and the magnet crane will magnetize picking up a massive load of scrap metal. The user can adjust the location of the magnet crane over top of the scrap box, then press the green button again which will demagnetize the crane dropping the scrap metal into the scrap box. Once the user has finished loading up the scrap box with the magnet crane, they will need to get it out of the way and above the production floor.



Magnet Crane Screens: When the magnet crane is being controlled by the cabin, the two screens above the user will display helpful information about the magnet crane. The left screen will display the amount of scrap metal in the scrap box. The right screen will display the location of the magnet crane relative to the railcar and scrap box as well as indicators of where the user will need to move the magnet crane.



Scrap Box: The scrap box is below the first area that the user will move to in the cabin. The user will be able to move the scrap box around horizontally, left, right, forward, and backward, using the red joystick, and vertically using the blue lever. When the scrap box is in front of the oxygen furnace, the user can press the green button on the right side of the cabin to dump scrap metal into the oxygen furnace. Once the user has finished loading up the oxygen furnace with the scrap metal, they will need to get it out of the way and above the furnace.



Scrap Box Screens: When the scrap box is being controlled by the cabin, the two screens above the user will display helpful information about the scrap box. The left screen will display the tilt angle of the oxygen furnace, which will need to be at 42 degrees to add the scrap metal. The right screen will display the location of the scrap box relative to the oxygen furnace as well as indicators of where the user will need to move the scrap box.



Iron Ladle: The iron ladle is to the right the second area that the user will move to in the cabin. The user will be able to move the iron ladle around horizontally, left, right, forward, and backward, using the red joystick, and vertically using the blue lever. When the iron ladle is in front of the oxygen furnace, the user can press the green button on the right side of the cabin to dump molten iron into the oxygen furnace. Once the user has finished loading up the oxygen furnace with the molten iron, they will need to get it out of the way and above the furnace.



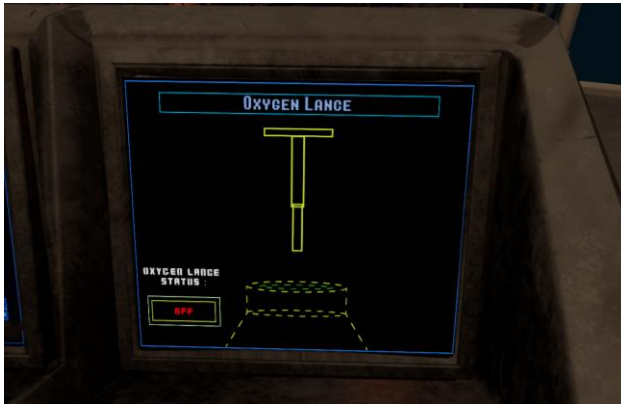
Iron Ladle Screens: When the iron ladle is being controlled by the cabin, the two screens above the user will display helpful information about the iron ladle. The left screen will display the tilt angle of the oxygen furnace, which will need to be at 42 degrees to add the molten iron. The right screen will display the location of the iron ladle relative to the oxygen furnace as well as indicators of where the user will need to move the iron ladle.



Oxygen Lance: The oxygen lance is located above the oxygen furnace on the production floor. The user will need to adjust the oxygen lance his position so that it is inside of the oxygen furnace, using the liver on the right side of the control desk in the control room. When the oxygen Lance is inserted into the oxygen furnace, the user can press the button to the left of the sliding livre in the control room and it will initiate the heat. This will blast the contents of the oxygen furnace with high-pressed oxygen, which will help melt down all of the scrap metal and mix everything together. Once the user has started the heat, this will only take about 15 to 30 seconds.



The screen behind the sliding lever in the control room will display the current position of the oxygen lance relative to the furnace. This will help the user get the lance into the correct position.



Basic Oxygen Furnace: The basic oxygen furnace is located on the production floor in front of both the cabin and the control room. The user will need to dump in scrap metal and molten iron into the oxygen furnace, which are the key components of molten steel. The oxygen furnace can tilt up and down, allowing the user to dump the above mentioned materials into the open top section. The user will need to call the pulpit crew throughout the experience so they can adjust the tilt of the oxygen furnace. the user will also need to insert a large oxygen lance into the furnace, which is used to blast the materials producing molten steel.



Walkie-Talkie: The walkie-talkie is located on the left side of the cabin. The user will need to use the walkie-talkie to call the pulpit crew and have them tilt the oxygen furnace up or down depending on where they are in the tutorial.



Freeplay vs. Tutorial:

In the tutorial, the narrator will guide the user through the steel production cycle. The user will begin in the control room and the narrator will explain to them how to select the correct elements required for the grade of steel and get the user to equip their safety equipment. then the user will be brought to the cabin, where they will control the magnet crane, scrap box, and iron ladle. then the user will be brought back to the control room, where they will perform a heat using the oxygen lance.

In freeplay, the user will need to complete the same work order without any guidance. They will need to determine the elements required for the grade of Steel without any help, ensure they equip their safety equipment, then move to the cabin. From here, the user must follow the correct order of events, adding the scrap metal to the scrap box using the magnet crane, then adding the scrap metal into the oxygen furnace using the scrap box, then adding the molten iron to the oxygen furnace using the iron ladle.