

# Gates eCrimper

XD/UX Case Study



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# The Problem

Gates, a 100+ year old global company and leader in power transmission products, was looking to convert their top manufacturing product from a fully manual operator controlled unit to an Android tablet interface solution. The two pronged goal being to provide operators with a more clear and safe interaction with the machine as well as improve both product creation efficiency and operator onboarding.

# My Role

I was brought on to lead both the XD strategy and UX design effort. This project was unique in that it was the first foray into XD/UX for the Gates team and their pilot customer, thus requiring me to perform a significant amount of education and mentoring alongside my typical role and related deliverables.

# My Process

## Step One

### The What

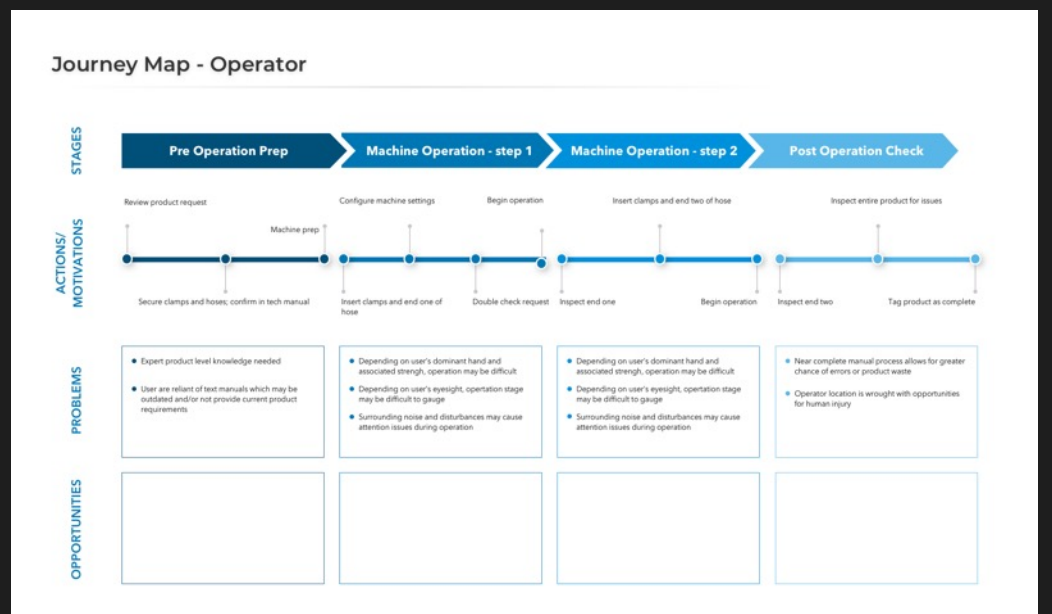
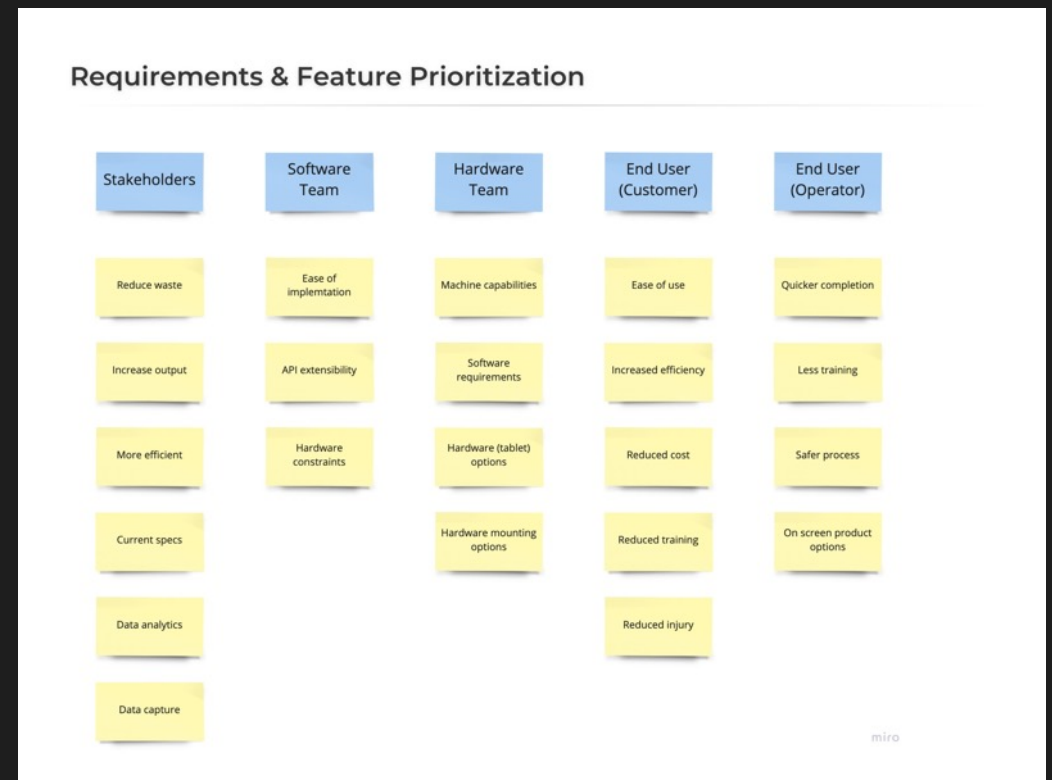
Step one in my process was multi-faceted. Meeting with the internal Gates team to understand their goals and short/long term requirements. as well as what the machine was currently capable of. Meeting with both the separate hardware and software teams to understand the hardware/software limitations and technical requirements. And, lastly, meeting with the pilot customer and several operators to not only understand and study their current needs and processes but also to begin crafting personas for these two users.

### The Who

Gates stakeholders, external software team, external hardware team, end customers, and end users (operators)

### The How

- Whiteboarding (Miro) and interviews for requirements gathering and feature prioritization
- Interviews & ethnographic research for journey map creation (Sketch)



# My Process

## Step Two

### The What

Step two saw me drafting and validating a user and application flow, which then transitioned into low-fidelity wireframes. I performed two rounds of participant testing with six operators. The first round was done sans the manufacturing equipment to gauge general application clarity, ease of use, and requirement standards with the second round performed during live operator tasks. I also worked closely with the hardware team on the physical requirements needed for the tablet sleeve which was to be affixed to the manufacturing product.


### The Who

External hardware team and end users (operators)

### The How

- Interviews & ethnographic research for persona creation (Sketch) and casual user research
- Process and user flows exercise (Miro/Sketch)
- Moderated user testing & ethnographic research

Russ Eubanks
Persona 1



**Bio**  
 Russ is a full-time operator at one of Gates' customer facilities. He's been involved in manufacturing operations for over 30 years. While he is looking to retire in a few years and spend more time with his grandchildren, he enjoys the work and running the shop as the lead operator.

**Goals · Interest**

- Getting our items out on time
- Ensuring everyone is following ALL safety measures
- Making sure all our output is done correctly without issues
- Getting team members who are interested in learning and spending the time needed to understand the full process
- Fishing with my grandkids, grilling out, relaxing

**Pain Points · Concerns**

- Injuries that are due to lack of safety precautions
- The time needed for non experts to work the machine and build products at an efficient pace
- Finding qualified workers who can handle the work
- Relying on our [paper] manuals which may be outdated or just aren't updated often enough. Too many notes written in the margin to make up for this is always an opportunity for errors.

**Scenario**  
 I normally have a full docket of items that keep me and my team busy all day, so when we have an additional order in or a rush order this can get a bit crazy. A constant difficulty is training new team members as there is a lot to learn and unless you've been doing this for a while, it is very slow and someone can get overwhelmed quickly.

**Motivations**

Perfection

Speed

Satisfaction

Teamwork

Customers

**Personality**

Invert  Extrovert

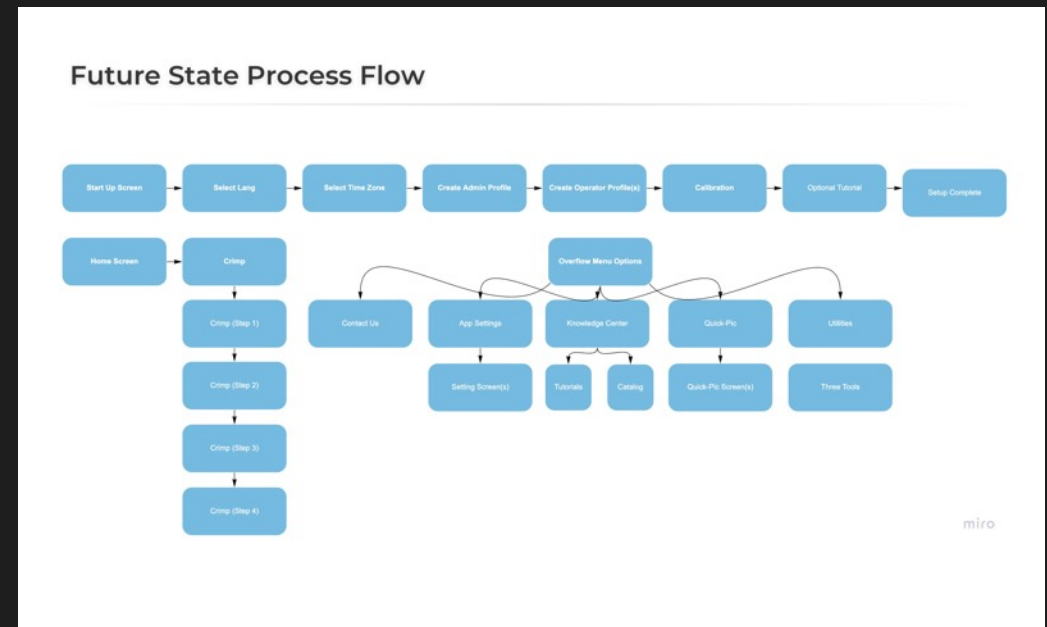
Analytical  Creative

Loyal  Fickle

Passive  Active

**Detailed · Organized**

Age: 56  
 Occupation: Operations Lead  
 Family: Divorced  
 Location: Englewood, CO  
 Archetype: The Creator



# My Process

## Step Three

### The What

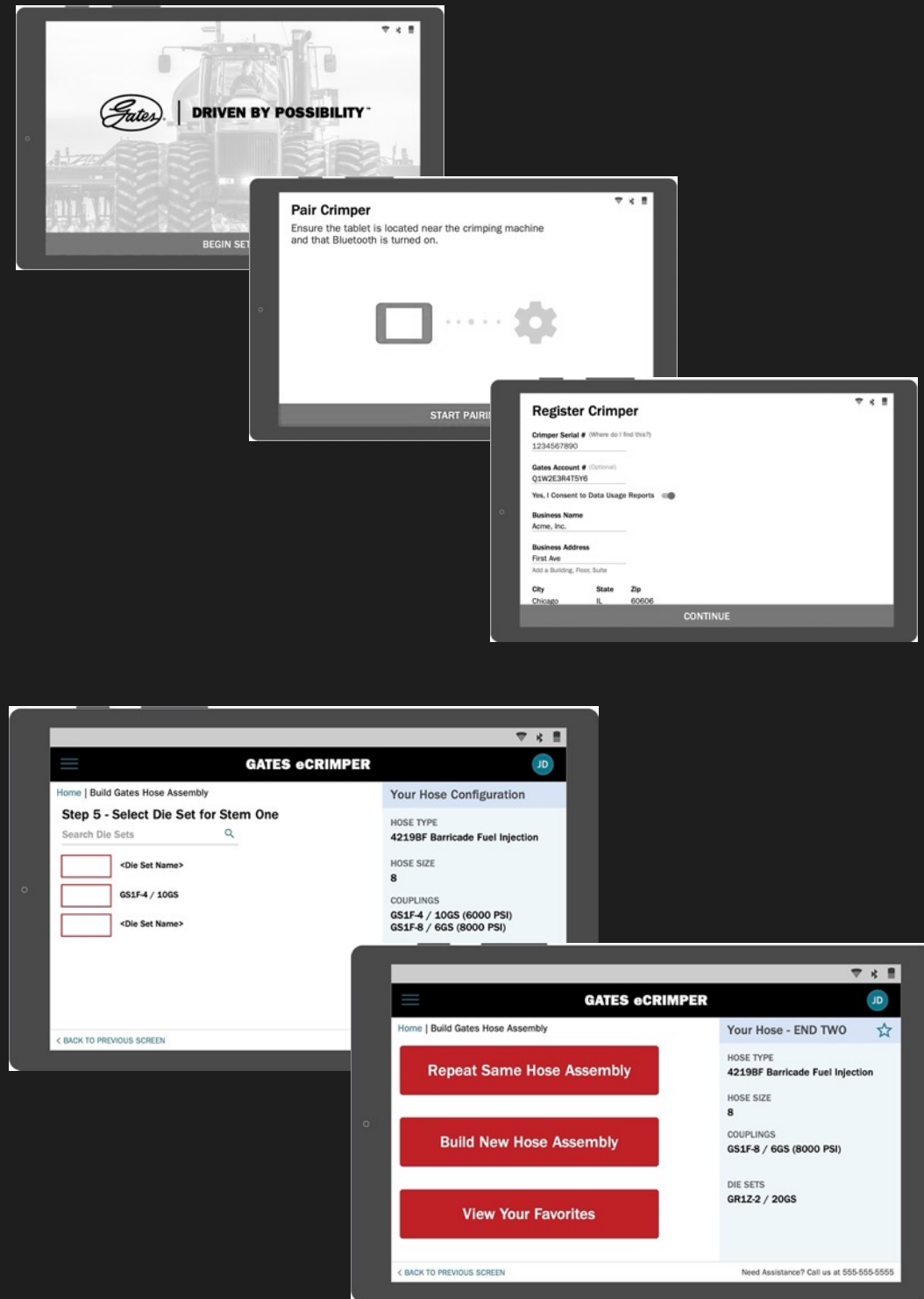
Step three is where I expanded on the wireframes and began building the visual language and high-fidelity prototype to be vetted with stakeholders and ultimately tested with the operators. An added challenge in this step was the design limitations I had to adhere to due to the software team's API constraints incurred when interfacing with the hardware. As stated on an earlier slide, XD/UX was a new concept to the teams at large, so during these various sessions or activities I included both an overview and example of what and why I was performing a particular exercise and what the expected outcome(s) were.

### The Who

Gates stakeholders, external software team, end customers, and end users (operators)

### The How

- Low-fidelity wireframes (Sketch)
- High-fidelity prototypes (Figma)



# My Process

## Step Four

### The What

Step four consisted of one round of user testing. I had to return to the drawing board to address the loss of a previously assumed haptic feedback for the operator. This feature was pushed off to a future release requiring additional, if not less optimal, visual cues for the operator.

### The Who

Gates stakeholders, external software team, end customers, and end users (operators)

### The How

- Moderated user testing & ethnographic research
- High-fidelity prototypes (Figma)

## User Testing Round 2 Findings

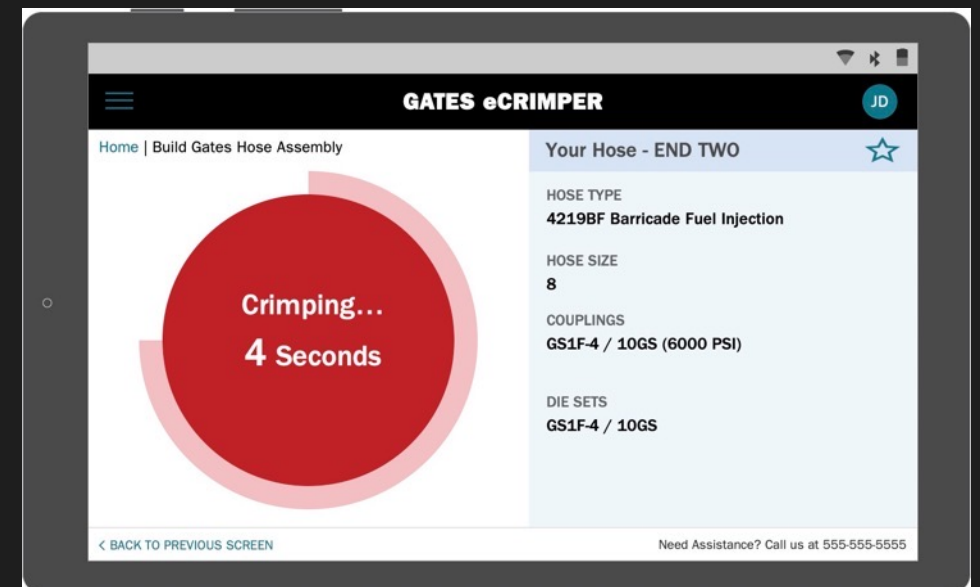
Operator Tasks

### Purpose of User Testing (80% complete)

5

ISSUES

The purpose of this testing is to expose any UX issues or opportunities as experienced by the end user (operator)





# My Process

## Step Five

### The What

Step five saw me write the functional and design specs as well as the associated user stories for the software team's consumption. I performed gap analysis and assisted with functional testing as the software team built the product interface and fully connected into live data via the API. I facilitated a post launch feature requirements road mapping session with the Gate's team and a project retrospective before my involvement ended.

### The Who

Gates stakeholders and external software team

### The How

- Functional specifications & user stories (JIRA)
- Design specifications (Figma/Zeplin)

#### Story

As an Operator, I want the ability to see the full spectrum of options once I have selected the *Begin Process* button Sign In/Up & My Profile options.

#### Associated Visual Comp(s)

Option Selection View -: <https://zpl.io/aXetYiX>

Option Selection Error View: <https://zpl.io/aRipZr0>

#### Acceptance Criteria

1. The Options button is displayed by default
2. Selecting the Options button surfaces all options associated with the product
3. When more than six options exist, a scroll bar is presented to the user
4. Option titles that exceed 80 characters and appended with a selectable ellipses
  1. Selecting the title copy or ellipses expands the title to reflect the full title

#### ▼ Gates - Tablet App - Wires & Comps



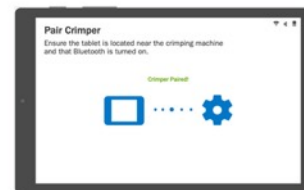
GATES - Comps 1



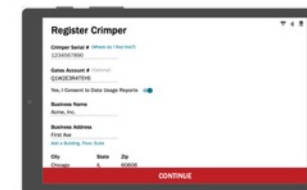
GATES - Comps 2



GATES - Comps 3



GATES - Comps 4



GATES - Comps 5



GATES - Comps 6

# The Solution

My design, which focused on safety and ease of use coupled with quick onboarding, followed a wizard like approach. I wanted to limit both the amount of options and visual noise a user was presented with while working with large dangerous machinery in a loud and often hectic environment in order to reduce cognitive load as much as possible. While, ultimately, I was unable to leverage haptic feedback as part of my three-pronged safety solution, I felt confident that the multiple visual cues paired with a “dead man’s switch” provided sufficient controls to protect the user. The solution I arrived at also provided Gates a foundational design system that could be applied to their host of other manufacturing products.

See it live via these YouTube links: [https://youtu.be/tp2aMK-c\\_sk](https://youtu.be/tp2aMK-c_sk) & <https://youtu.be/ge4WBIPjtTk>

# Outcome & Learnings

Gate's made the first step into transitioning their products from needing experts to operate into empowering their customer's and employees to increase production in a safe and easy to use manner that limits waste. As mentioned in my project retrospective to Gates, I urged them to focus on feature prioritization not only earlier in the process but to also ensure all solution partners (e.g., software, hardware, clients, etc.) where part of this process. Additionally, my recommendation was to increase the number of pilot customers and operators to allow for a larger pool of test participants and, ultimately, more available feedback. My personal takeaway was to be more cognizant of my audience and reduce the amount of terms I pull from the XD/UX vernacular so as to increase the speed at which I connect with team members.

# Thank you for reading!

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