Harley Video and the Stages of Engineering Design

The first step to engineering design is to recognize the need for something. This includes considering the market pull as well as a technology push. Harley Davidson recognized that they needed a new and more modern machine that appealed to even a greater variety of customer but that would still be recognizable by the longtime Harley Lovers. Harley saw the need for a new and improved fast machine and that is where this project started.

Next Harley had to find their problems that would come with this project. First they needed to do research to figure out what walls they would hit with this project. One of which, and the most important, was keeping the already reputable Harley design that customers know and love. The second was finding components such as an engine that would fit the machine as well as make it perform at the levels Harley wanted it to. The last big one was of course, it had to still “look good”.

To gather information one of the big things that Harley team did was go to drag racing tracks and research different and already very high speed machines. From the track they began getting ideas that would lay the foundation of their six year project. Also because they wanted this bike to do things and perform at levels greater then what they have done before, Harley had to seek out other’s expertise and that is where their collaboration with Porsche came into play. Porsche helped Harley design an engine that would be durable and hit the high speeds that they were looking for.
To get ideas Harley had to do a lot of Brainstorming as well analyze and design. This happened a lot in the “lab” of Willy G. They continued to graph designs on sketch boards as well as on the computer and did that until they believed to get the look that they wanted. However each time they selected a design that they thought was complete they had to continue to analyze their product until they got as close to perfection as possible. “For every setback came a success”.

Getting to the end of the project it came to make and test the prototypes. One of the biggest components that needed test was the motorcycle’s radiator. They wanted it to be stylish, fully functional, and receive a lot of air flow. They wanted to make sure that it was hidden and look like it was a part of the frame. The first prototype was bulky, not well hidden, and overall ugly. Besides the radiator they also had to test the whole bike from “head to toe”. The bike was put on road tests for durability, wind test, air test, heat tests, radiation test, and every single inch of the bike was taken apart and shook around, Harley was trying to see if they could “break” the bike, to make sure it was durable for a full Harley life span.

Lastly the communication of the new bike, even though this step is last communication happens from step one of any project. But, at the end Harley had to make sure it was communicating through all of its departments so everyone was on the same page. Especially when came time to communicate to the engineers in the building stages, the graphic designers in the customization stage, and then marketing in the naming and promotions stage. Finally, when the project was complete it was time to communicate to the most important people in the project; the customers and that was when the “V-Rod” project was complete.

The stages of Engineering Design even though they come in a “paint by number” format really are arbitrary to the team and some steps happen more than once. Also every project is not the same and they do not all follow the stages in exact order per say.