In the movie that we watched on the production of the Harley Davidson V-rod the stages of engineering design were exemplified. Harley Davidson first recognized the need of the customers. They realized that the customers were looking for faster and higher performance bikes. The major reason for this project was the loss of consumers to other companies.

The company faced various problems throughout the process. The first of which was creating a bike that was fast enough to please the customers while still having the Harley look. With this being the first time that Harley had built a bike from the ground up they faced many challenges along the way. They wanted the frame of the bike to look good, but be able to handle the higher speeds. They also needed to be able to hold 12L of air in the bike, in order to meet noise regulations. Throughout the project they faced little problems here and there.

Gathering information was a critical component in the creation of the V-Rod. In the early stages they looked to the Harley racing team for solutions. They then turned to the Harley drag team, and stole the idea of the VR1000. More brainstorming occurred on the design level, where they went through numerous rough draft designs until they finally got the look that Willy Davidson himself approved. Frank Savage, who was the youngest on the design team, was in charge of creating a full model of the bike out of clay. With the clay model built, the design team could easily make small changes to the bike.

Working as a team was also a big part of the success of the project. The engineers has to comply with the design team, and the design team had to comply with the engineering team. For example, they had to create a frame that the designers liked, and that operated efficiently for the engineers. Harley
had attempted to use plastic and aluminum for the first time on the design of the V-Rod. The plastic was mainly used for the design of the fuel tank while the aluminum was used for the design of the frame. The designers had many concerns with the radiator of the bike. They wanted the radiator to look good and the engineers needed it to operate efficiently. To fix this problem, the designers and engineers communicated until they landed on a final design. The engineers used a process called hydroforming to cut down on the number of welds on the frame. They also combined efforts with Porsche in order to fabricate the engine. It took numerous attempts with Porsche in order to design the final engine that would work properly.

On day 421 of the project, they tested the first prototype. Willy Davidson actually test drove the bike himself, and broke it and got it stuck in fourth gear. However, the test of this prototype was very successful and revealed many problems with the bike. They realized that the fuel tank had to be moved, and this is when they brainstormed and came up with the idea of the plastic fuel tank. They also realized that the radiator was not generating enough air, and solved the problem by adding fins to the radiator in order to keep the air from flowing out. After perfecting the bike they ran it through numerous tests, like the Duseldorf Test, in order to test the durability of the engine. They ran the bike through numerous tests like, testing radio waves against the bike, weather tests, vibration tests, heat acclimation test, and put it through months of real life driving. Throughout all of these tests they would ask for the drivers’ feedback on how the bike performed. They also put it through an acoustic test, and adjusted the sound to make it sound just like a Harley. Lastly, they had to come up with the name for the bike, and they went through an unbelievable amount of names, to finally come up with the V-Rod.

After six years of fabricating the V-Rod, and facing all the challenges that came with it, they finally completed the project. They revealed it at the annual Harley Davidson expo. The bike was incredibly successful, and practically saved Harley Davidson from bankruptcy.