Mechanical Mine Sounding Device

ME495 Capstone Project

In 2018 as part of their requirements for the degree of Bachelor of Science in mechanical engineering, four students designed a mechanical mine-sounding device.

A traditional design process was followed to complete the project. The problem was defined, and objectives, metrics and constraints were developed. Multiple alternatives were generated through an individual-based ideation process and were scored qualitatively. The alternative that best met the objectives and satisfied all constraints was carried into the final design stage. Detailed analysis was conducted to design the major functional components of the device. This culminated in the creation of a set of working drawings, one of the main deliverables, that could be used to manufacture a prototype device. The prototype, as defined by the drawings, was deemed qualitatively to best meet the project objectives and satisfy the constraints. Based on the design, the device was demonstrated to be able to strike the back with a consistent and repeatable force.

Academic Supervisor – Professor Ikechukwuka Ogoucha

Project Team:

- Tyson Exner
- Robert Kiehn
- Mac McLeod
- Matherin Rooney

Professor Travis Wiens provided the idea for the capstone project. This led to an Exploring Innovations and Developing Innovations projects to further develop the mine-sounding device.

Proponent: University of Saskatchewan
Project Duration: October 2017 to March 2018
Project Cost: $36,743
IMII: $ 726
U of S: $36,017