Thesis Portfolio

Light Attack/Armed Reconnaissance Aircraft Mission Design and Analysis
(Technical Report)

The Ethics of Engineers' Role in Militaristic Technologies
(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

Within this thesis, the ethics behind engineers' involvements in the military are called into question and explored. To begin, a capstone project was given to an undergraduate fourth-year class of aerospace engineers to design a light attack aircraft. Each team member worked together on separate specialties and integrated all components to complete an optimal design that performed the necessary mission requirements laid out in the American Institute of Aeronautics and Astronautics (AIAA)'s Request for Proposal (RFP). Throughout this technical project, it was important to recognize the ethical dilemma at play: how engineers are involved in militaristic technologies that cause harm. This complex problem was investigated by exploring previous literature and research, analyzing STS frameworks, and conducting interviews and surveys with experienced engineers and with engineering students. Overall, the concept of the banality of evil within the large technical system played a big role, showing the importance of recognizing the dilemma as opposed to detaching yourself from it and acting without thought or intent. Furthermore, it was shown that the result of military weapon use is never the fault or responsibility of the engineer alone. There is no finite solution to this dilemma, but it is important to be aware of how you view ethics and how others view ethics, and to be aware of the impact you create with your work.

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