Thesis Portfolio

Cecil, 1U Amateur Radio CubeSat
(Technical Report)

Insane or Calculated? How the North Korean Military Model Can Explain the Behavior of the Kim Regime
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

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Spring, 2020

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Sociotechnical Synthesis

The technical thesis describes the development of a 1U CubeSat by a team of mechanical and aerospace engineers. The primary objective of the mission is to build and operate a satellite system that is capable of reliably communicating with the University of Virginia (UVA) Ground Station and amateur ground stations around the world. The satellite will also have an on-board camera that will take pictures of the Earth and stars. These pictures will be distributed to the amateur radio community through the UVA Engineering Department. The team has advanced the project through the preliminary design review (PDR), which demonstrates that the CubeSat design "meets all requirements with acceptable risk and within the cost and schedule constraints, and establishes the basis for proceeding with detailed design" (Preliminary Design Review). The satellite will be constructed and placed into Low Earth Orbit (LEO) by future Spacecraft Design classes. The technical and STS theses are not related.

The STS thesis seeks to define the military model in North Korea, and use that model as a means to explain the unique governmental structure and diplomatic behavior of the Kim regime. In the context of this paper, the term "military model" refers to the individuals and groups with authority, the technologies that are developed, and all supporting infrastructure. The thesis will determine the main actors within the North Korean military model, and investigate the relationships between these actors. In addition, the wider international context in which this model operates will be considered. This information will then be used to determine the unique domestic and international position occupied by the Kim regime. The technical and STS theses are not related.

Works Cited

Preliminary design review vehicle and payload experiment criteria, Preliminary design review vehicle and payload experiment criteria (n.d.). Retrieved from https://www.nasa.gov/pdf/206051main_Preliminary_Design_Review_Req_508.pdf