Empirical Model Relating Chloride Loading Density and Conductance for
Prediction of Galvanic Corrosion
(Technical Report)

Safety, Secrets, and Settlements: How U.S. Military Contractors Manage
Public Image
(STS Research Paper)

An Undergraduate Thesis Portfolio
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Bachelor of Science in Materials Science and Engineering

by

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Preface

Military contracting is a $420 billion industry in the United States. Companies invest resources to compete for lucrative contracts.

How can data from the Luna Labs Acuity Sensor indicate chloride loading density and other parameters of real environments? Chloride loading density can predict corrosion in real, complex environments. By correlating sensor parameters to this environmental condition, lab data can help researchers predict long-term corrosion in less controlled conditions. Lab data from Luna Labs were analyzed. By fitting conductance and relative humidity to both a logistic curve and linear fit model, the coefficients of which scale with chloride loading density, the research team developed a hybrid predictive model for chloride loading density.

How do U.S. military contractors influence their public image? To win contracts, military contractors rely on a positive public image to gain support in Congress and the Department of Defense. Government officials with connections to military contractors also benefit if citizens have good perceptions of those companies. To manage public perceptions, U.S. military contractors engage in a unique form of advertising, hide controversy behind legal ambiguity, and withhold information from the public through their protections as a private company handling sensitive secrets. Evidence from two case studies reveals predominant public relations strategies.

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