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Preventing Iron Oxidation Corrosion in the Maritime Industry

This experiment was to determine which preventative treatment would cause iron to rust the least in four environments. Before the preventative was applied to the iron pieces, a horizontal score was into the iron. Each piece of iron was treated with a different preventative, except for the control pieces. The preventatives used were exterior paint, oil, primer/exterior paint, and Rustoleum (c) paint. After the piece of iron received their preventative, a diagonal cut was made in the iron pieces. These iron pieces were then placed into four distinct environments: air, brackish water to represent estuaries, fresh water to represent lakes and rivers, and salt water to represent oceans. Initially, the pieces of iron were placed in their distinct environments for two weeks and kept outside. Rust results were tallied. Then the pieces of iron were take out of their environments and placed on a wooden board. Daily, the pieces of iron were sprayed with water from the environment that they had been in. After four more weeks, results were tallied again. The results were that Rustoleum (c) paint rusted the least in all environments, which was followed by primer/exterior paint, exterior paint, oil, and non-treated iron. This experiment is significant because countries rely on the shipping transportation system as a source of moving goods and fleets must be kept rust-free and operational.