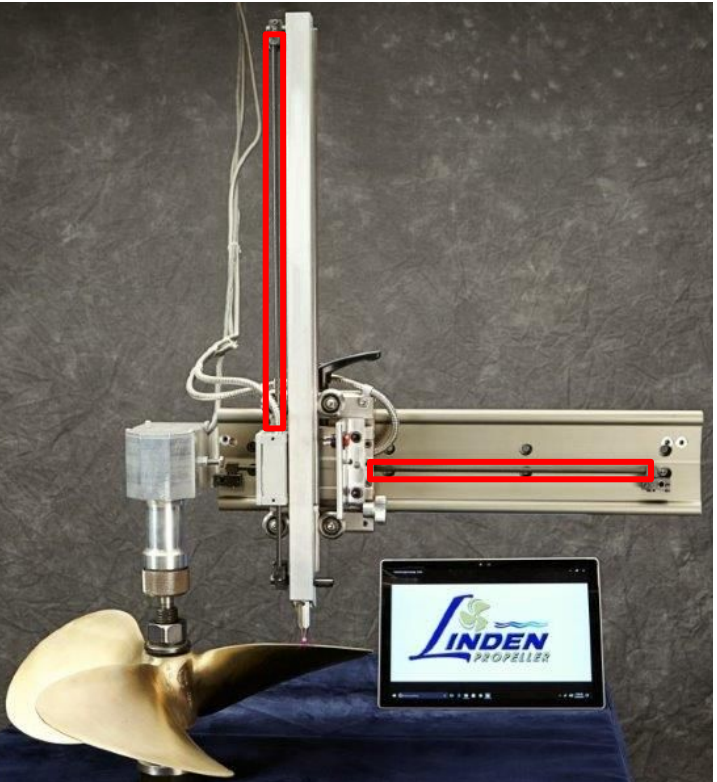
Ethics & Professional Responsibility

Elias Colsch, Denny Dang, Alan Whitehead
(and Mani Mina)

Project: Laser Scan Readings for Propeller Measurement

Group: sdmay25-34

Project Overview



Project Name: Laser Scan Readings for Propeller Measurement

Goal: Replacing propeller measurement system of Linden Propeller

Reason for change:

- Carbon fiber rods attached to scales are brittle
- Expensive to replace/repair
- Extended lead times

IDEALS Area in Success

Work Competence

Relevance: Our project must meet specific criteria with little margin for less-than-ideal solutions. Our designs are required to meet these requirements that are redeemable to our client.

Approach: Research and understanding the products we use are our number one priority. The more we understand the designs of our products, the more we can find the appropriate solution for our client.

Reasons: It is important that “the safety, health, and welfare of the public” is upheld in professional practice and in research activities. It provides a critical foundation for understanding potential impacts of engineering designs.

IDEALS Area in Failure

Financial Responsibility

Relevance: Our client is very concerned about how much his current setup is costing him and how much a new system would cost. We have a very tight budget.

Approach: We are attempting to negotiate with producers to get a lower price, which we have done successfully, just not as low as we need. We also have a backup solution using cheaper components, but we have to trade in accuracy with our current setup.

Changes: We are going to try looking at older models of parts to see if we can get them cheaper than the newer models.

Four Areas Chart

	Beneficence	Nonmaleficence	Respect for Autonomy	Justice
Safety	Improves safety by eliminating parts that could break	Does not add in unsafe components	Allows for same decision-making as old design	Does not make the system less safe for any group of people
Environmental	Eliminates carbon fiber rods that are wasted	Does not include any components that produce waste	We have multiple options if environmental concerns arise	Will not impact the surrounding environment
Economic	Saves several thousand dollars per year	Uses affordable parts and systems	We have multiple options for different budgets	Price of design is as low as possible for small businesses
Competence	Provides a quicker and more customer-appealing process	Does not make the process less accurate	The tradeoff between accuracy and price is solely up to the client	Will not affect quality of work

Ethical Issues

Our only ethical issue within our project is having a solution that is at least 2x outside our client's budget although it's the most beneficial solution while also being cost effective and long-lasting. We've tried pushing this idea to our client and provided good reasons why he should increase his budget for this solution, though he was not at all interested in it even for the sake of his services in the future. We have a separate solution, but it will be less accurate and less reliable than our primary solution.