Career Episode 2

Live Dry Docking Modle Demonstration

A) Introduction

[CE 2.1] This was the teamwork done in the bachelors in the Marine Engineering field.

Name of Project: Live Dry Docking Modle Demonstration

Duration: [Date] – [Date]

Location: MANET, Pune, India

Position: Marine Engineering Student

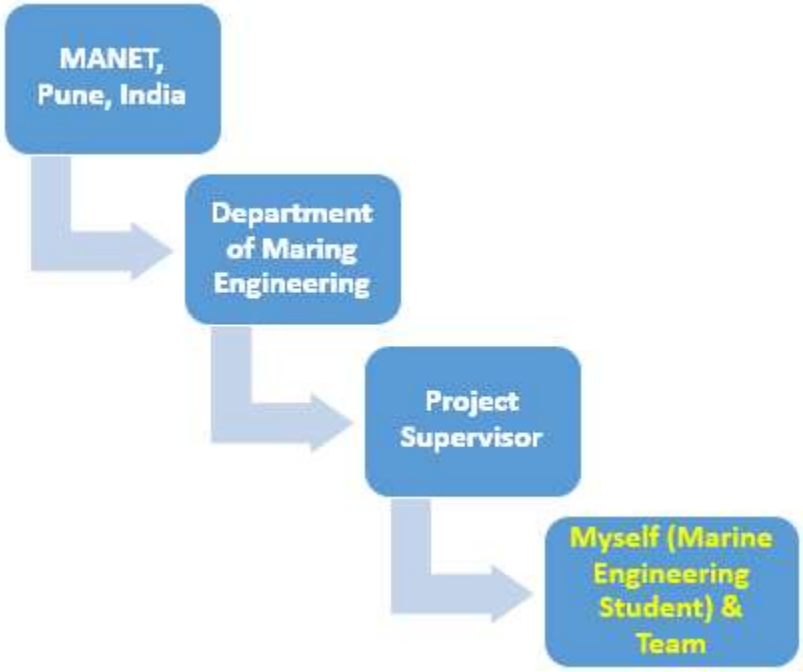
B) Background

[CE 2.2] The complete dry access can be done to the vessel from the dry docks for maintenance, repairs and overhauling for the construction and launching. A mean is typically obtained from the dry docks in terms of vessels transferring to or from the dry land for the storage of temporary overhauls. Dry docks are of numerous types which include shipping the physical lift from the water like marine railways, floating dry docks and vertically lift systems along with the traditional basin. Space typically enclosed for the dry dock around the vessel. The work also consisted of providing the dry docks facility types along with the selection of the appropriate facility affecting the section.

[CE 2.3] The core objective of the project undertaken was live dry docking modle demonstration which was done to analyze various technical facts related to marine engineering. The work was done with the team to obtain the project results which brought timely results in a defined manner.

[CE 2.4] The project was also working on the vertical lift which was the mechanical mean of ship hoisting out of the water vertically. I while working with the team members analyzed the dock and it mainly consisted of the hoisting mechanism, platform and hoist support pier. I lowered the platform into the water until the achievement was made for adequate water over the blocks. I also obtained the facts related to the ship floating over the platform which was gradually centered. I got decent assistance in raising the platform along with the blocks vessel grounding. I synchronized all the motors as the vessel was raised for insuring the point that each haul worked at the same rate.

[CE 2.5] The chart for position indication:



[CE 2.6] I had these duties:

- I made a selection of the dry docks based on the ship construction maintenance using marine engineering knowledge.
- I executed the working on the floating dry docks which worked with the structures support with dimension, strengths and lifting displacement.
- I applied Marine Engineering understanding for pitting corrosion and it was in relation to the deep pits which were not cleaned from the salt in addition to other contaminants.
- I implemented the activities related to the dry docks floating in which the structures were dependent on the stability, displacement, dimensions and strength.
- I conducted a complex structure analysis along with the weld seams, edges, and corners for the full coat application.

C) Personal Engineering Activity

[CE 2.7] I researched the dry dock which was the small basin in which the flooding was done to allow a load to be floated in which was then drained well for allowing the load to remain at rest on the dry platform. I used dry docks which were based on the construction maintenance along with the ship, boat, and other watercrafts maintenance. I noted that the basin was large with the fixed basins mainly built at the water's edge into the ground. It was separated from the water via a dock gate. I also noted that the basin docks were capable of docking every vessel size with the 200,000 tons capacities. I researched the basic structure which consisted of the sidewalls, head, floor, and a dock gate. I incorporated the altered steps into the sidewalls for maintaining structural stability. I then worked on the floating dry docks which were the structures worked with the

strength, dimensions, stability, and displacement for lifting the vessel from the water utilizing the buoyancy. I made sure that the floating docks worked in lifting the capacities from the hundred tons to over 100,000 tons.

[CE 2.8] I worked on the fouling which was an organism present in the seas. I categorized the fouling into slime, algae and animal fouling. I made decent research on the slime which was mainly utilized for the diatoms, algae spores and bacteria. I noted that each Nantes was the type of diatom which was found in the seas and ship as well. There was always the presence of the slime layer but not significantly notable.

I realized that the growth of algae to the stage when fouling occurred along with the two other types which were considered from the seafarers.

I analyzed the strong adhered algae fouling which typically showed that the ending of the service life occurred. However, it could also because of the false antifouling type selected for the vessel.

[CE 2.9] I analyzed the animal fouling which was present in numerous forms and mainly available in the tubeworms, mussels, and barnacles. I analyzed the animal fouling presence on the ship which was the sign that the pain reached the service life end. I worked on removing the animal fouling which was difficult as compared to the algae fouling and it was mainly done with the

implementation of high-pressure freshwater cleaning along with the scraping. It was mandatory to remove all the related fouling. I adopted the phenomena of high-pressure water cleaning in which freshwater cleaning worked as an important element in the removal of the fouling, salts and other related contaminants. I realized that the freshwater cleaning was complete rapidly as it was easier to remove fouling when did not completely dry.

[CE 2.10] I worked on the inspection of corrosion after freshwater cleaning, it led to the coating cleaning. It was dependent on the corrosion amount along with the full blast operation. I implemented the pitting corrosion which was based on receiving more attention and particularly deep pits were not cleaned from salt along with other contaminants. I noted that the welding replacement was the only considerable option. I pointed damaged occurred at the cating system from the external factors.

Scraping anchor chains

Fender damage

Grounding

[CE 2.11] I checked the paint system condition as well and determined the system exiting adhesive strength. I also did not locate any defects. I carried out the surface preparation which included blasting with the high-pressure water jetting. I worked on the blasting which was according to the ISO standards. I used the power tool cleaning for spot repair along with the general spot repair suitability. I selected the sanding disk and wire brushes. I applied techniques that were properly utilized for an extensive cleaning of the single spot and these were polished the steel rather than roughening it. I paid adequate attention to weld edges and seams along with the negligence that was considered in the areas which resulted in the breakdown of the preliminary coating.

[CE 2.12] I mixed the paint thoroughly with the usage of the mechanical stirrer. I analyzed the complex structure along with the corners, edges and weld seams before the full coat application. I carried out the spraying which was under the appropriate angle from the right distance and it was done in a consistent pattern. The technical outcomes in the project were analyzed well with the discussion made with project supervisor along with constant efforts placed in the marine engineering sector for getting the work results. I prepared the Gantt chart in the work in which I mentioned the overall project timeline and also mentioned the responsibilities of other team members as I worked as the group leader in the project.

[CE 2.13] Problem: The technical hurdle was faced related to the live dry docking modle demonstration in which the side wall structure was needed to be executed appropriately.

Solution: I made decent research regarding the basic structure which mainly consisted of the head, floor, and sidewalls along with the dock gate. I did the incorporation of the altered steps into the sidewall for the purpose of maintaining the overall structural stability.

D) Summary

[CE 2.14] From the conducted analysis in the project, I noted that the getting a decent result in dry dock was not a difficult task while considering the decent painting practice followed along with the adequate guidance. I also researched the vessel maintenance which was under the local Transocean representative surveillance. I discussed various issues with the team during the project and also brought technical guidance from the project supervisor. All the objectives in the project were predefined and thus it assisted me well in meeting the project goals using my marine engineering understanding. The project resulted to be an absolute experience for me in terms of enhancing my knowledge in the marine engineering domain.