

# LATITUDE MARINE SERVICES, LLC

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BUSINESS INDUSTRY CO-OP  
THE CALIFORNIA MARITIME ACADEMY  
JUNE TO AUGUST 2009

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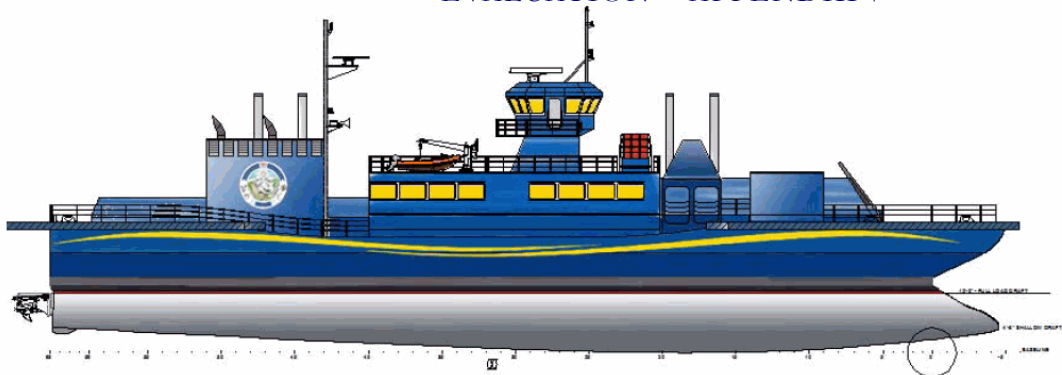
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## BUSINESS INDUSTRY CO-OP

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### EXECUTIVE SUMMARY

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Through my time at Latitude Marine Services I did a conglomerate of tasks. These tasks varied from office work, to boat haul outs, to even helping fabricate new parts. As a business major, my main objective during my internship was to find out how the shipyard was run in every aspect of its day to day operation.

During the program I achieved many things; especially on the management side of the company. I learned how to produce quotes for jobs based on rates charged and as by estimating the time required to do a job and the materials that will be involved. Another key aspect of the shipyard is government jobs. For these I had to learn the process of bidding on future jobs as well as how to go about government inspections and reports of current jobs.

Inventory was an important task, especially when it came to welding supplies. I learned how to inventory supplies and how to place orders for new supplies. Being in a shipyard also meant that strict safety regulations are in place. For almost everything that is done at the yard there must first be WAC code research done to ensure all proper safety protocol is followed. One main aspect of safety is cleanliness, which I had to help out with a lot by organizing cords and putting things away. The barge was still under construction which meant that safety rails had to be in place and moved often: a task I was regularly asked to help with.

Another part of the yard was the small boat side. This was composed of boat haul outs and repair. The logistics of stored boats became a crucial element when the company considered which boats had to have certain jobs done and when they needed to go back in the water. At one point we had to redo the placement of all the boats to make room for the completed barge to be transferred.

Boat repairs made me learn even more about inventory. Keeping track of supplies used on projects was important so that they may be billed to the customer. Each boat has a separate account. I had to learn the codes for jobs done and how to record them into the computer and eventually bill out. Our time was recorded by every 1/4 hour. This way jobs

that were billable were easily added up so the office knew how much time was being invested into each task we completed.

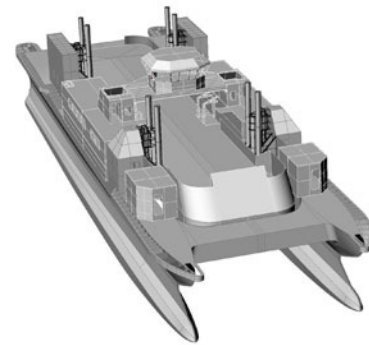
The kinds of jobs I did were important to the overall success of projects, but really didn't have much of an end product. This internship taught me many things about shipyards and how they function. Maybe one day I will get into the management side of them. From this experience I will understand what has to happen at each layer for the entire company to succeed.

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#### ABOUT LATITUDE MARINE SERVICES, LLC

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Latitude Marine Services is a full service boat and ship yard that does marine repair as well as new ship construction. They are located in LaConner, WA on an Indian Reservation with direct access to the Swinomish Channel. The yard itself is just over 3 acres and has a 100 ton boat lift and numerous shops and cover work areas. They have been in the industry since 2001 and were founded by a family of ship builders. Its current owner is a California Maritime Academy Alumni. They are currently shifting the focus of their operations from boat repair to ship building.



*Figure 1*

Latitude now builds custom commercial vessels and yachts in steel and aluminum. Currently they are working on 160-foot barge for the United States Navy. The barge itself is only part of the overall project. The end result will be the M/V Susitna (Figure 1), a high speed, ice breaking catamaran ferry for Alaska. The design is quite unique; the barge section of the ferry is located between the two hulls, under the main deck. When loading and unloading the barge (Figure 3, pg 4) is lowered; then raised while in transit.

It will serve as the primary transportation for small islands as well as act as an emergency response vessel for the US Navy. The design is experimental and will be a combined effort between Latitude Marine Services, Alaska Ship and Drydock, and the Office of Naval Research. Pieces of the vessel are being constructed in multiple locations and will be brought



*Figure 2*

ship construction and helped to get them future contracts.

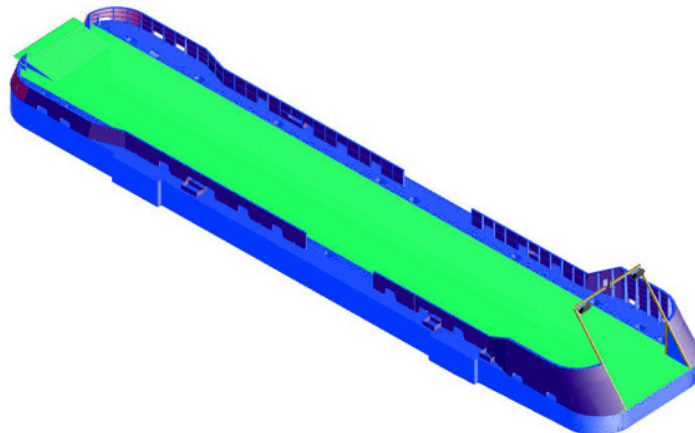
Currently Latitude Marine Services is bidding on another government project. It will be another landing craft that is similar to the M/V Henry Island; however it will be almost twice the size. To accommodate for the rapid growth of the company, they are making plans to dredge their harbor and invest in a 500 ton lift. With new project on the horizon and current projects going full ahead, Latitude is in the industry to stay. It is a business model that others could learn from.

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#### WEEKLY SCHEDULE

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My schedule at Latitude was very flexible. Depending on what jobs we had to get done and by when they needed to be complete really affected my schedule. Most commonly I came in to work at 0800 and went home at 1600. My time was recorded by the hour on a spreadsheet and is included in Appendix 2.



*Figure 3*

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## MAIN TASKS AND FUNCTIONS

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My main tasks at Latitude Marine Services varied widely. I was utilized in the main office, in the ASD office, in the yard, and in the ASD shop. Everyday my work list changed.

My internship began with a basic orientation of the facilities as well as a thorough review of safety regulations and protocol (Appendix 3). Like every other employee, it was my job to ensure I followed safety protocol as well as the people around me. Ship yards are very hazardous places. One of the most important regulations was for hearing. Latitude has a hearing conservation program and does biannual hearing tests for all employees. When inside of shops everyone is required to wear provided hearing protection. In some circumstances you must wear both ear plugs and ear muffs. These circumstances are in situations where the decibel levels have reached a high enough level that hearing damage may occur if proper precautions are not taken.

Forklifts are common in the yard and it is important to follow the safety procedures for forklift operation. These are pretty self-explanatory, but you do have to be certified by Latitude management before you can ever operate a forklift. Welding can also be very dangerous. Everyone is required to wear weld hoods and gloves when welding. Welding poses risk of electrocution, burns, gas explosions, and flash burns. One thing with welding is that one must make people around aware before one arcing. The weld arc can cause serious eye damage known as corneal flash burns, which is caused when someone looks directly at an arc without a proper welding hood or shield.

I had to handle and use many different hazardous materials. Before one ever uses a chemical or hazardous material one must read the material safety data sheets (MSDS). These sheets are basically a fact sheet about the material which indicate the dangers, but also what to do if things go wrong; like if one gets some in his or her eye. These sheets are required to be provided by the employer.

One task I had to help with was weekly safety meetings. These were meetings scheduled every week that everyone was required to attend. At the meeting we addressed recent on-the-job injuries and reviewed the proper safety protocols for the incident. One example was an employee who was injured when using what is called a “Meat Axe.” The Meat Axe is a 4 ½ inch angle grinder with a saw blade (Figure 4) that is used for weld bead removal on aluminum boats. This is a very dangerous tool and if not handled correctly can be jerked out of one’s hands. In this case, the employee was not wearing the required face shield and the Meat Axe slipped out of his hands and hit his cheek. The extremely sharp saw blade made a 4 inch laceration down his face and he was lucky not to be injured worse.



Figure 4

The barge was a focus area for safety; it was a government project and constantly had safety inspectors visiting. One task I had to help meet safety requirements was to set and move safety rails. The barge was about 20 feet tall and was a falling hazard. Safety rails had to be in place at all times. When new plates were put on, the rails had to be taken out and moved to the new perimeter of the barge.

The main office is where the overall operation of the business is conducted. My tasks in the main office included inventory, billing, quotes, and scheduling. Inventory levels must be constantly maintained so that nothing runs out when it is needed. This means ordering when supplies are getting low and before they are gone. I had to check inventory levels and make orders with suppliers in Seattle. The yard used QuickBooks to organize the information and create spreadsheets. I spent a few days learning their system and how to enter in data and get the right output. It was a simple system that was very user friendly. I used the system to create my timesheets and record my hours to be billed to customers (Appendix 2).

Billing the customer is very meticulous. You must make

	Two-Way Haul Out (Includes Blocking)	Haul & Hang (No Blocking, 1 hr. or less)
Up to 35'	\$6.25 per ft.	\$4.75 per ft. (min \$100.00)
36' to 50'	\$6.75 per ft.	\$5.50 per ft.
51' to 60'	\$8.00 per ft.	\$6.00 per ft.
61' to 70'	\$10.00 per ft.	\$7.25 per ft.
Over 70'	Call for quote	Call for quote
Chine / Rail Carpet Guards	\$100.00	
Pressure Washing	\$2.50 ft. (Scraping, if necessary, will be billed at hourly rate)	
Ground Cover Charge (All 2-way haul outs)	\$25.00	
Environmental Compliance Fee (All 2-way haul outs & pressure washes)	\$30.00	

Figure 5



sure everything is added to the total, and double check all figures. Customers are billed by the day for storage, by the hour the vessel was worked on, for the materials used, and for the cost of hauling out and launching the vessel (Figure 5, pg. 6). Also, the bill must be paid before the vessel is launched; we called this policy “Cash Before Splash.”

Quotes were calculated for both private jobs as well as for government bids. Private jobs were much simpler and were based on the size of the vessel, the jobs being done, the time estimated to complete the job, and the time the vessel was needed to be stored. The government bids were much more complicated. They were about 300 pages in length and required every detail about the operation including who was to supply raw materials.

Scheduling was mainly left up to the full time office staff because of its high importance. Vessels that are being lifted must be scheduled based on the tides. If it is low tide, there is not enough draft in the channel to get them in the sling. One must also consider if there will be space in the yard to store them for the required time to complete work on the vessel.

Another location I worked was in the ASD (Alaska Ship and Drydock) Office. This was the operation office for the M/V Susitna barge. The barge diagrams (Appendix 6 and Figure 6) were analyzed here and transferred to reality in the big shop. I had to help inventory the welding locker and make sure parts stayed in stock. Another key part of the ASD office was repair of tools. It seemed everyday someone would break an angle grinder, router, or skilsaw. If they were under warranty then they were shipped back to the manufacturer, but if not we had to repair them. The ASD office followed a strict operations flow

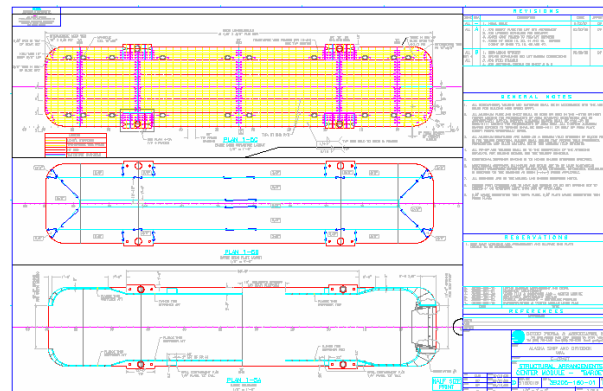


Figure 6

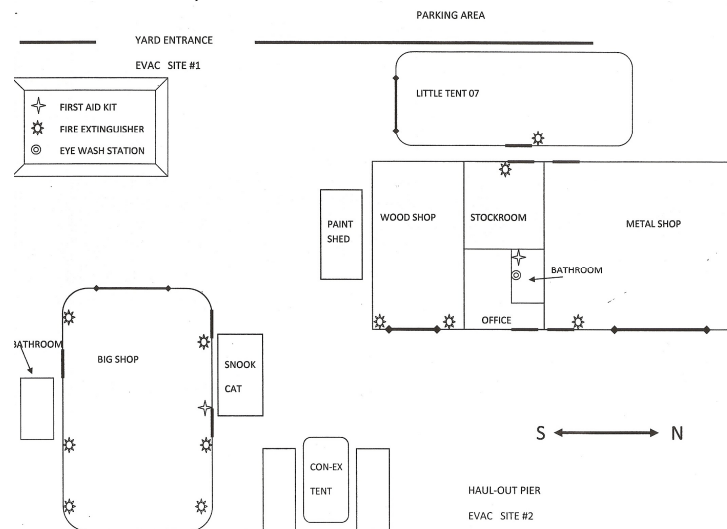
chart that was created in the beginning of the project. It was the operations manager’s job to keep the construction on schedule and I was occasionally asked to help him estimate progress. This consisted of checking which plates were in what stage (ex: completely welded, currently being welded, being placed, or on a pallet).



Inventory at the ASD office also meant I had to do inventory for barge parts. The easiest way to think of the barge was as a giant puzzle. Plates were cut to spec in Seattle and shipped to us on pallets. Each plate had a part number that could be recorded on the main parts list. When shipments came in, I had to sort the plates and take inventory of them. Sometimes parts wouldn't come when they were supposed to and I would communicate that to the operations manager so he could contact the supplier to get them cut and shipped.

The small boat yard was another place where I worked. It dealt with the haul out and repairs of small, private vessels. We used a 100-ton marine lift to haul boats out and either store them, or repair them. Some boats needed custom fabrication of parts while others just needed a new paint jobs. One of my first jobs in the yard was fabricating a new mount for a Global Diving and Salvage boat. It meant I had to cut and weld steel to meet the specs that the customer wanted. This job showed me the importance of communication with a customer as well as managing my time to complete the job. Inventory came up as well during this project. The Oxy-Acetylene torch ran out of oxygen in the middle of cutting the pieces. Luckily there was another bottle I could borrow, but I learned that all tanks' levels should be checked often. Gas is something you don't usually think of for inventory. We had to inventory oxygen, acetylene, argon, propane, gasoline, and diesel.

Working in the yard I had to make sure spaces were available for boats to be blocked by the time they were hauled. This meant I had to clear pallets, debris, or even other boats that could fit into another slot better. The largest boat we hauled was an 80-foot retired Coast Guard Cutter the *Top Notch*. It required us to move other boats to make room for it come out. The logistics of moving the boats was very important for the smooth operation of the yard. (Yard Layout Shown Below)



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## EMPLOYMENT AND CAREER IMPLICATION

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Working at Latitude Marine Services definitely taught me a lot about the ship yard industry. The experience would make me a much more effective manager because it showed me what must happen through the layers of the company. Starting at the bottom is a great way to see how a company works throughout.

The management of Latitude was very affective and was well liked and respected by the employees. I learned a lot about effective managing styles while I was at Latitude. The managers respected their employees and the response was positive. Everyone communicated on a first-name basis, which put everyone at the same level; nobody felt small because they had to address a manager in a certain way. For example, managers would occasionally reward employees with pizza when a deadline was met and would make a big deal out of an employee's anniversary with the company. The personable relation between managers and employees made the work environment much more enjoyable. The individual attention given to employees really raised moral. I learned one will be a better manager if they listen to and respect their employees. This was a great real-life example of the Hawthorne Effect. If you spend the time making sure employees are happy they will, in turn, be more productive and efficient.



I learned that managers must also be conscience of the tasks they assign to employees. Some tasks are extremely monotonous. These tasks should be divided up either between multiple employees, or spread out so that employees do not become dissatisfied. It is important to keep an employee engaged with new tasks and give them new challenges every now and then. Challenges tend to make employees think more and keep them interested in learning new things. If you get the employees interested in expanding their skills, you will ultimately create a more skilled and valuable work force.

Another key thing that I picked up from Latitude management was that one must be interactive with the employees. While this serves as a form of supervision, employees don't see as that. As an employee you do not want to get stuck with a less desirable task all day. If a manager comes and helps out, for even just a minute, the employee will notice the leadership and might respect the manager more. This also gives the manager the opportunity to critique the employee without seeming like a dictator to the employee.



In my time at Latitude Marine Services I learned quite a bit about project management. The barge project required many deadlines to be met and everyone had to work to accomplish the project by a deadline. All tasks had to be completed based on an operation flowchart. Plates have to be installed in order; otherwise the end product will be flawed. There was a case of plates being installed out of order early in the project which caused the barge to be off by 2-inches sideways over the 80-foot section. This caused much delay and extra time to fix the problem. I learned that a process flowchart must be followed strictly and within the times given. The delay to repair the barge was 2 weeks and the entire barge was supposed to only take 10 weeks. This error cost the company in time and could have cost them their relationship with the customer.

The relationship of time management and customer satisfaction are directly correlated. Customers want the services they are promised done by the time estimated. As a manager you need to learn not only efficient time management, but also accurate job time projection. If one projects the time a job will be completed too short, the customer will be upset if it is late. On the other hand, if one estimates too long, then the company might not get the job at all because the competitors will appear to be able to do the job faster. It is very difficult to estimate the time a job will take. As a manager, one needs to be able to look back on previous job times as well as break the project down into micro-jobs that can more accurately estimate the time. A process flow chart makes this breakdown of time much easier; you can also figure out which jobs can be done concurrently, thus reducing the estimated time to complete a project.

Inventory also became a key center of my learning at Latitude Marine Services. In previous jobs I never had to deal with any inventory and Latitude definitely gave me quite a crash course. Managers must make sure they have someone competent to manage their inventory, otherwise there might not be supplies when they need them; resulting is customer dissatisfaction. Forecasting future use of inventory is also important to ensure your inventory is not depleted. One must account for the use of items and the delivery time from suppliers.

Keeping loyal suppliers is also a great lesson I took away from my internship. Managers must know who they can order from and trust to get the correct items in a timely manner. At Latitude we used a marine supplier in Seattle. They were excellent in making sure everything got to use quickly. Even if they were out of stock they would get the items from a competitor to ensure our business stayed with them. This took a lot of pressure off management. When running a business this is the kind of supplier you want to have. After all, the longer it takes to get supplies the longer a customer must wait.

Having middle managers you can trust to get the job done is immensely important to top managers. This takes the worry off the manager and reduces the things they have to oversee. Middle managers are important in completing the smaller tasks that effect the entire operation of a company.

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## CONCLUSION

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Overall I learned a lot in my time at Latitude Marine Services. The shipyard had all of the functions of a larger company. They gave me hands on experience of the ship building process: from bidding, to construction, to inspection, and even meeting safety requirements of your customer. I learned about inventory, logistics, ordering, bidding, and managing. The experience was invaluable and will serve me a great deal in my future in the maritime industry. The lessons I came away with will contribute to my education from The California Maritime Academy and will ultimately make me a more effective manager.