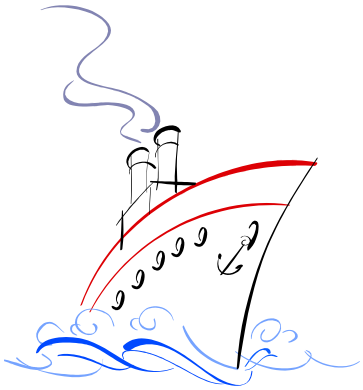
SUMMER 2014

MARINE TRANSPORTATION

COMMERCIAL CRUISE PROJECT



CRU 200 and CRU 200L

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April 2014.

Dear Captain;

The intent of this letter is to provide you with some background information that will allow you to employ our California Maritime Academy (CMA) cadet more effectively in your vessel's operation. We ask that you assign the cadet to four hours on the bridge or wheelhouse and four hours on deck or daywork each day.

The cadet assigned to your vessel is only halfway through his or her maritime education at CMA and has yet to be exposed to some skills and knowledge that cadets from other maritime academies may have had. CMA deck cadets on Commercial Cruise have completed two years of college and 60 days of sea time as a freshman aboard the Training Ship *Golden Bear*. They should have the skills and knowledge of an Able Seaman and be competent lookouts and quartermasters. Their deck skills for tie-up and let-go should be adequate. They have completed studies in basic terrestrial navigation, Rules of the Road, Radar/ARPA, ship stability, and GMDSS. They have *not* had celestial navigation. All of our students have completed basic safety training.

We have prepared a series of tasks for our cadets to complete during their time onboard your vessel. They have been directed to conduct familiarization tasks on a priority basis. The tasks need to be verified by the appropriate shipboard officers as either being accomplished or observed. This verification is just to ensure that a cadet is not tempted to fraudulently sign themselves off as having completed a task. **We are not asking you to certify our cadets' competence in that task, only that they attempted it or observed it.**

Other tasks will require that they spend some time each day on their sea project. This does not mean that they should work on their sea project in lieu of but rather in addition to their daily watch and daywork assignments. Nevertheless, their completed project must be submitted to the Academy shortly after their discharge. They should be working on their cruise project throughout the time spent on board your vessel.

The cadet will provide a Supervisor's Cadet Evaluation Form. It is requested that only Chief Mates or Masters complete this evaluation. **For discharges, please state that the cadet served aboard in a capacity of "Cadet."**

We hope that our cadets will prove highly self-motivated and represent the Academy well both aboard ship and ashore. However, some of our cadets may need you or your officers to provide supplemental guidance in this regard. Some inexperienced cadets may procrastinate or wait for specific directions. If the cadet does not become involved in the ship's operations, a timely encouragement by you or one of your officers would be most helpful.

Finally, it is our strong belief that seagoing experience only on our training ship, no matter how valuable, does not adequately prepare a cadet for working in our industry. Accordingly, this period aboard your vessel is vital. It helps to ensure that the cadet gains professional and

interpersonal skills and understands the standards of performance that are required of all competent mariners.

Please do not hesitate to contact either me or the Cadet Coordinator at any time should you have questions or concerns. Also, any suggestions that you may wish to offer that could improve our Commercial Cruise Program are always welcome. After all, our primary goal at the California Maritime Academy is to produce the best possible officers to serve our maritime industry.

Thank you and smooth sailing.

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INTRODUCTION

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www.turnitin.com Course Name: CRU 200 2014
Course ID: 7773411 Course Password: Sailors14

Submit Original Documents to Career Services
Submit the following *original documents* by the due date to Career Services in the plastic pouch provided (include *copies* in Part 1 of CRU 200L red folder of your submitted project, and keep copies for yourself):

- your original discharges or sea service letters
- all supervisor's evaluations (sealed)
- PIC/DL forms (for cadets on tankers)
- TOAR documents (optional, for cadets on tugs only)
- cadet ship evaluations
- other pertinent documents

Copies of all seatime and PIC/DL documents are to be submitted with your written project and included in Part 1 of your CRU 200L folder. Both Career Services and the Commandant's Staff will review the evaluations received from Masters and Chief Mates.

The Campus STCW Coordinator (currently Peg Solveson) may have additional forms for you to complete and submit directly to that office.

PIC/DL Documentation:
A blank PIC/DL form is included in this project. Make sure you stay current on your PIC/DL documentation. It is imperative that you fill out the form as you complete each requirement.

Cruise Project Guidance:

Immediately upon joining your first ship, you should ensure that the Personnel Register is completed along with the Vessel Particulars and Familiarization sections found in Part 1 of CRU 200L. When you first join the vessel, show the project to the licensed officer who will be most involved in your commercial cruise, and discuss the requirements of the project with him/her. This should be done when you first join the ship. All sections of this project must be completed in order to pass commercial cruise

There may be tasks that won't apply to your vessel. These should be indicated as "NOT APPLICABLE" in the appropriate section, with an officer's signature/initials. You should participate and document your involvement in any activities that arise but that are not listed in this project, especially on special purpose/task vessels (dredges, research vessels, fishing vessels, etc.).

When you return to campus in the fall, submit the project with each component mechanically secured with metal tabs in properly labeled cardstock report covers. *Do not place your written work in plastic sheets protectors*, but drawings may be placed in sheet protectors. Drawings must be on the cardstock included in your project bundle that cannot be traced upon. Scratch work or submissions on scratch paper will not be considered and will adversely affect your grade. Make certain that the project sections are in their proper order. Disorganized projects and piles of loose papers will receive lower grades.

Grading:

There will be three Marine Transportation faculty members involved in grading the commercial cruise projects. The instructor of record will be the overall project coordinator, receiving finished projects, checking them for completeness, and assigning each a code number. He or she will also determine whether you earned credit for the requirements of CRU-200L. Faculty listed as "graders" will evaluate the letter-graded portions of the project, CRU-200. They will receive their assigned portions of every project, identified only by the code number.

Only the instructor of record will know the author of a cadet's CRU-200 project. When you submit your project, ensure that each section remains separate to allow proper distribution to the graders. Do not combine work for one section with work for another. After the graders complete their grading, they will return all projects to the instructor of record who will reassemble the projects, tally up the scores, and assign each student their final grade.

There are 600 points possible on this project. A student must also complete all section of CRU-200L to pass. For a breakdown of each section and its value toward the total grade, see the CRU-200/CRU-200L Grading Matrix in the Appendix. Failure to follow format or submission guidelines may result in a loss of 1-60 points.

Due Date:

The project must be delivered to the Instructor of Record no later than 1700 sharp on Monday, September 15, 2014 (Simulation Center, Office 213). Original documents are to be turned in separately to Career Services by 1700 sharp on Monday, September 15, 2014 as well. Your project may be turned in as early as the first day of classes, Tuesday, September 2, 2014. All written portions of the cruise project must also be submitted to www.turnitin.com by the due date. Turnitin.com Class ID: 7773411 Course Name: CRU 200 2014 Password: Sailors14

Originals of all discharges, sea time letters, supervisor's evaluations, PIC/DL forms, etc. are to be submitted to Career Services in the provided plastic pouch by the same due date. Originals will be returned to you.

Projects submitted after September 15, 2014 will have their final point total reduced by100 points per calendar day. Projects submitted on September 15, 2014, but after 1700, will have 100 points deducted from the total points.

If you know you cannot finish your project by the above due date and time, contact the instructor of record via email to request an extension. You must submit your request for extension via email no later than 1700 on Tuesday September 2, 2014. In your request for an extension you must explain why you should be treated differently than all your colleagues and given an extension. Extensions will only be granted for unforeseeable circumstances beyond your control. If your request is deemed reasonable, a limited (no more than one week) extension may be granted. In addition to turning in the hardcopy of the complete project, you must submit the written work in CRU 200 Parts 1-7 online through www.turnitin.com by the same due date listed above.

You must keep electronic copies of all written material, as well as photocopies of all drawings, illustrations, and important documents until your final grades have been posted.

All sections must be completed or you will receive a failing grade for cruise. Be sure you have responded to all queries before submitting your projects. Finally, make sure all sections are kept separate and self-contained in their respective folders for grading distribution.

General Expectations:

This project is designed to provide you with a self-directed program and to serve as a comprehensive record of the progress and experiences of your commercial sea period. As a cadet, you are privileged to be afforded the opportunity to serve aboard commercial vessels and to represent the California Maritime Academy both domestically and abroad.

The commercial cruise sea project is a major undertaking and you should read through the entire project carefully before departing for your first vessel. It is your responsibility to ensure that any questions you have concerning this project are answered before you leave; contacting faculty over the summer months is difficult at best.

All work must be your own. You may not collaborate with other cadets aboard your vessel, or with cadets who were aboard the same vessel on previous cruises. The Cadet Regulations Handbook, the Academic Senate Policy on Inappropriate Student Academic Conduct and all applicable State and Federal laws concerning academic dishonesty, plagiarism, and other intellectual property rights are hereby incorporated by reference and are binding. Please familiarize yourself with the elements of the Academic Senate Policy on Inappropriate Student Academic Conduct before you depart for commercial cruise. If you have any questions on this issue, it is your responsibility to have them resolved prior to departing for commercial cruise.

Also, be aware that U.S. Coast Guard regulations regarding drug and alcohol use/abuse apply to cadets. The current limit for crew aboard U.S. flag vessels anywhere and any vessel in U.S. waters is a blood alcohol content (BAC) of 0.04% and no alcohol consumption within four hours of assuming a watch or safety duty.

Officers aboard ship are being paid to do their job, not to teach you. Do not expect the ship's crew to create mini-classes or adventures for you. Any attention you are given or interest

you are shown is a gift. You can best show your appreciation by maintaining the highest levels of integrity, grooming, promptness, cheerfulness, and a general "can-do" attitude and willingness to volunteer and help-out.

This is an extremely small industry. Behaviors that seemed funny or harmless at the time will be long remembered. You don't want to be the new third mate signing on and have another officer say, "Oh, I remember him…he was the one who…" Guard your reputation jealously. Remember that you are in training to be a junior officer; act accordingly. Cadet misbehavior has cost the Academy lost shipping berths, which can adversely affect the entire program for many years. The maritime industry is small and competitive. You will be working with this pool of people for many years to come.

The Academy considers CRU-200 to be a summertime project, and anticipates cadets will be working on their projects both before and after their shipboard cycles. The project is, however, intended to be primarily completed aboard ship with perhaps only minor polishing completed afterwards. You should be devoting several hours a day (outside of your normal watch and daywork obligations) to work on your project. You may need to do external research to complete the project. Allow enough time to do so.

What to Bring on Cruise:

The following list is a guideline only. Some vessels have many of the listed texts but some do not. You will have to use your judgment and allow some time for shore-side research, especially if you are not on a traditional deep-sea vessel. Do not call the company or the vessel to see what they have. The following are recommended:

- A copy of the cruise project (printed and electronic)
- Report covers with metal fold-over tabs for securing three-hole punched paper
- Plastic pouch for submission of original documents to Career Services
- Copies of necessary forms from the Cruise Project Appendix
- Cardstock for all drawings
- Flash drive or CD-RW for recording your project files
- Graphics and lettering stencils and templates for drawing of valves, etc.
- Colored pencils and good vinyl/plastic erasers
- Plotting tools, calculator
- Book for the book report
- Universal plotting sheets
- Radar transfer plotting sheets
- American Merchant Seaman's Manual
- Merchant Marine Officer's Handbook
- Marine Cargo Operations or Tanker Operations Texts
- Radar Observer Manual
- Dutton's and/or Bowditch on CD
- Flashlight
- Gloves, work boots, sunglasses, sunscreen, etc.
- Personal toiletries, medicines, hygiene products
- Battery powered alarm clock
- Lastly, do not forget to bring your passport, MMC, and TWIC.

Project Components and Order of Submission

CRU 200L (Parts 1-4)
(all parts secured together in the ***RED*** report cover labeled CRU 200L, in this order, with cover sheets between parts)

Part 1 – Signing-on
- a. Personnel Register
- b. Vessel Particulars
- c. Vessel Familiarization

Part 2 – Required Tasks and Observations
Part 3 – Cadet Daily Activity Log

CRU 200 (Parts 1-7) (in this order, *each part* mechanically secured in ***BLUE*** report covers)

Part 1 – Vessel Information
Part 2 – Cargo and Vessel Mission
- a. Required Drawings
- b. Required Essays

Part 3 – Navigation
- a. Five noon slips
- b. Five slip calculations
- c. Voyage Plan
- d. Five arrival tides/currents; five departure tides/currents
- e. Five arrival and five departure slips

Part 4 – Bridge Procedures
- a. Required Essays

Part 5 – Emergency Procedures and Pollution
- a. Required Drawings
- b. Required Essays

Part 6 – Ship's Business
- a. Required Essays

Part 7 - Book Report of 4-6 pages

All folders then go in a single brown accordion pocket folder. Be sure your student code number is written in **BIG NUMBERS** in black, on the **upper right corner across the top of the flap, along its spine.** Also write your code number on the **front of the flap**. This will allow us to sort the projects when they are standing upright in the submission boxes. Failure to submit your project in the proper folders will result in a reduction of points for failure to follow submission instructions. Failure to submit projects in order will also result in a loss of points.

CRU 200L Part 1 (a) – Signing-on

Personnel Register

(make copies as needed for multiple vessels)

Vessel Name/Type: _____/_____

Master's Printed Name	**Signature**	**Date**
Name: _____/	_____/	_____
Name: _____/	_____/	_____
Name: _____/	_____/	_____

Supervising Officer's Printed Name	**Rank**	**Signature**	**Date**
Name: _____/	/	_____/	_____
Name: _____/	/	_____/	_____
Name: _____/	/	_____/	_____

Other crew and officers involved in your training:

Printed Name	**Rank**	**Signature**	**Date**
Name: _____/	/	_____/	_____
Name: _____/	/	_____/	_____
Name: _____/	/	_____/	_____

CRU 200L Part 1(b) – Signing-on

Vessel Particulars

(make copies as needed for multiple vessels)

A. GENERAL

Vessel Name/Type: _____/_____

Run or Route: _____

Official #_____

SS/MV_____

Call Sign_____ MMSI_____ SELCALL_____

EPIRB Registration #_____

LOA_____

LBP_____

Beam (molded) _____

Depth to Main Deck at Side_____

Load Line Draft (Summer)_____

Load Line Displacement (Summer)_____

Max Operating Draft_____

Displacement at Max Operating Draft_____

Light Ship Displacement_____

Light Ship Draft_____

Light Ship VCG ABL_____

Light Ship LCG from FP_____

Light Ship TCG from CL and STBD_____

Ship's Service Diesel Oil Capacity_____

Ship's Lube Oil Capacity_____

Ship's Service Reserve Feed Water Capacity_____

Ship's Service Potable Water Capacity_____

Tonnage (Gross)_____

Tonnage (Net)_____

Tonnage (Dwt)_____

Propeller: Fixed, Pitch (Type)_____

Adjustable, Pitch (Type)_____

CPP (Type)_____

Out-drive / Jet-drive (Type)_____

Thrusters: Location_____

Horsepower_____

Rudder Type and Number _____

Full Speed Turning Circle Data Corrected for Drift

STBD Turn:

Advance_____

Transfer_____

Tactical Diameter_____

Final Diameter_____

Time Required to Alter CSE to STBD 90^{o}_____

Quick Reversal Astern from Full Sea Speed

Time to Stop Ship_____

Distance to Stop Ship_____

B. ENGINE PARTICULARS

Engines (Type)_____

Boilers (Type & No.)_____

Bunker Capacity_____

Daily Consumption_____

Service Speed_____

Main Engine Output: Horsepower or Kw_____

at _____ Revolutions Per Minute

C. LIFESAVING

Lifeboats (No.)_____

Liferafts (No.)_____

Lifeboat Dimensions_____

Capacity Per Boat_____(Persons)

Capacity Per Liferaft_____(Persons)

Davits (Type)_____

Size of Falls (Diam.)_____

Lifebuoys (No.)_____

GMDSS Equipment (Type)_____

EPIRB (Type)_____

SARTs (Type)_____

D. FIRE FIGHTING

Fire Detection System _____

Fire Extinguishers (Number and Capacity)_____

Types Soda/Acid_____

Foam_____

Dry Chemical_____

CO_2_____

Fire Hoses (No. and Size)_____

Breathing Apparatus (No.)_____

E. MOORING

Mooring Lines_____

Natural Fiber_____

Synthetic Fiber_____

Wires_____

Towing Spring_____

Towing Bitts _____

F. CARGO OPERATIONS

Derricks/Cranes No. and SWL_____

Winches (Types)_____

Other Cargo Equipment_____

Cargo Pumps (Type)_____ No._____ Rating_____

Towing Equipment _____

_____

G. ANCHORS (weight, type, length of anchor chain, method of securing)

Port_____

Starboard_____

Spare_____

Stream_____

H. NAVIGATIONAL EQUIPMENT

GPS (Type)_____Software Version_____

ECDIS or ECS_____Software Version_____

Radar(s) (Type)_____No._____Are Charts Installed? Yes__ No__

Gyro (Type)_____No. of Repeaters_____

Magnetic Compass (Type)_____

Steering Control System_____

I. List all navigation programs and software used (i.e. weather routing, tides and currents, waypoint for windows, voyage planning software, etc.)

_____
_____
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CRU 200L Part 1(c) – Signing-on

Vessel Familiarization

(make copies as needed for multiple vessels)

	Observing Officer's Initials / Date
1. Read the Standing Orders.	
2. Know bridge layout thoroughly.	
3. Locate your emergency and abandon ship stations and list below: Emergency Station: Abandon Ship Station:	
4. Locate medical and first aid equipment.	
5. Locate all alarm activation points, including general alarm.	
6. Locate fire fighting equipment and stations.	
7. Locate C02 bottle room and control valves (or other fixed system(s)) for extinguishing apparatus in pump room, cargo tanks and hold, machinery space, and galley.	
8. Locate and understand the activation of all emergency shutdowns and mechanisms.	
9. Locate EPIRB and SARTs. Explain operation to ship's officer.	
10. Locate GMDSS suite and distress activation procedures.	
11. Locate and understand the operation of emergency generator.	
12. Locate and understand the operation of emergency fire pump(s).	
13. Locate the operation of power and manually operated watertight and fire screen doors and other hatch/scuttle openings.	
14. Locate and list tank/pump room extraction equipment.	
15. Locate and list locations of emergency gear lockers.	
16. Locate the station bill and describe your duties in an emergency.	

CRU 200L Part 2

Required Tasks and Observations

(make copies as needed for multiple vessels)

General Instructions:

The "Required Tasks and Observations" will be used by the project grader to assess the cadet's commercial cruise experience. The cadet must complete this section in order to successfully pass CRU-200L. This section is graded on a credit/no credit basis.

The specific areas addressed in this section are based on the STCW tasks for officers in charge of a watch on ships of 500 gross tons or more at the operational level. It has been designed to give the cadet a high level of exposure to the skills and subjects necessary for an officer in training.

The officer that signs off a required observation or task is **not** certifying a minimum standard of competence, knowledge, understanding, or proficiency. Successful completion of the section does **not** certify STCW competence or certification; it is merely used for academic assessment of your shipboard experience.

CRU 200L Part 2 – Required Tasks and Observations

General Navigation	Officer's Initials	Date
1. Describe to a ship's officer the use of the Smooth Deck Log Book.		
2. Describe to the ship's officer the use of Night Order Book.		
3. Assist in preparation of a voyage plan. (Submit it in Section C-Part 1)		
4. Assist in the correcting of charts and publications.		
5. Observe the operation and use of the course recorder.		
6. Calculate tides and currents for every arrival/departure port.		
7. Calculate slip.		
8. Assist in the pre-departure gear tests. Fill out A pilot card.		
9. Practice the use of the Bell Book and the Auto Bell Log (if applicable).		

Terrestrial and Coastal Navigation	Officer's Initials	Date
1. Pilot using landmarks, generating visual fixes and using compass bearings.		
2. Explain aids to navigation, including lighthouses, beacons and buoys. Make use of proper publications to aid identification.		
3. Plot dead reckoning positions and estimated positions (taking into account predicted set and drift).		

Electronic Position Fixing and Navigation	Officer's Initials	Date
1. Fix the vessel's position with the use of GPS.		
2. Assist in the set-up of the GPS, including the selection of routes and waypoints.		

Echo-Sounder/Fathometer	Officer's Initials	Date
1. Operate the speed and distance recorder.		

Compass - Magnetic and Gyro	Officer's Initials	Date
1. Practice obtaining an azimuth and determining gyro error. (at officer's discretion)		
2. Describe to the ship's officer the use of the Compass Record Book.		
3. Correct magnetic courses/bearings for variation and deviation.		
4. Describe to the ship's officer the gyro start-up and shut-down procedures.		

Steering Control Systems	Officer's Initials	Date
1. Describe to the ship's officer the operation of the steering control system.		
2. Change over from manual to automatic Steering control and vice versa.		
3. Describe adjustment of controls at steering station for optimum performance.		

Meteorology	Officer's Initials	Date
1. Use and interpret information obtained from the ship's meteorological instruments, psychrometer, anemometer, and barograph.		
2. Fill out a weather observation log and send it.		
3. Program the weather fax. Look-up stations.		
4. Program the NAVTEX for the reception of meteorological forecasts other than meteorological warnings.		
5. Observe the operation of all weather programs or software used aboard.		
6. Calculate relative humidity. Determine relative/true wind, look up corresponding Beaufort force.		

7. Use Pub. 117 to determine local/GMT time of Sat C Safetynet broadcasts for current ocean region.	
8. Use Pub. 117 to identify nearest NAVTEX stations and broadcast time.	
9. Use Pub. 117 to identify VHF weather broadcast channels and times.	

Watchkeeping	Officer's Initials	Date
1. Know and understand the various watch conditions that pertain to the vessel.		
2. Describe to the ship's officer the correct procedure for changing the watch.		
3. Describe the conditions requiring extra lookouts.		
4. Describe to the ship's officer how various lights, shapes, and sound signals are reported.		

Radar/ARPA	Officer's Initials	Date
1. Start-up and adjust the radar display.		
2. Plot radar contacts.		
3. Determine: - Range and Bearing - Course and Speed (True & Relative) - CPA and TCPA		
4. Identify: - Critical contacts - Contact course and speed changes		
5. Switch between true and relative motion display, north-up and head-up modes.		
6. Obtain information from true and relative vectors; confirm with alphanumeric data.		
7. Practice using trial maneuver.		
8. Fix the vessel's position with the use of radar. Practice parallel indexing.		

9. Set up exclusion areas.	

Emergency Procedures/Search and Rescue	Officer's Initials	Date
1. Locate and familiarize yourself with the IAMSAR (search and rescue) manual.		
2. Know the maneuvers and procedures for the rescue of a person overboard.		
3. Describe to the ship's officer the operation of SARTs and EPIRBs for search and rescue.		
4. Describe the proper operation of the 3cm radar so that the detection of a SART is optimized.		
5. Describe to the ship's officer the local on-scene SAR organization and how it functions.		

Routine Communications	Officer's Initials	Date
1. Practice making calls on the VHF for traffic or ship's business.		
2. Practice making calls using DSC, VHF, MF, and HF.		
3. Send routing, ship's business or messages via Telex, SAT C, and/or SAT B.		
4. Prepare and send AMVER/weather reports.		
5. Locate the GMDSS reserve source of energy.		
6. Describe use of UHF radios during vessel operations. Describe radio and battery safety requirements.		

Distress Communications	Officer's Initials	Date
1. Describe to the ship's officer how to send a distress on all GMDSS/comms equipment.		
2. Describe the appearance of a SART on a radar screen.		
3. Describe how to cancel a false distress alert.		
4. Describe the activation of a SCT (Survival Craft Transceiver).		

General Port Operations	Officer's Initials	Date
1. Assist in the preparation of the ship for mooring.		
2. Observe and assist rigging the pilot ladder or pilot hoist.		
3. Read drafts for arrival and departure.		
4. Observe and assist in mooring operations from: a. Forward b. Aft c. Bridge		
5. Observe and assist in anchoring operations.		
6. Tend mooring lines and gangway while alongside.		
7. Observe and assist rigging the accommodation ladder.		
8. Observe and assist in the operation of self-tensioning winches.		
9. Locate the hydrometer and associated equipment and determine salinity. Determine the maximum allowable fresh water allowance.		

Cargo Handling and Stowage	Officer's Initials	Date
1. Observe and assist in preparation and interpretation of a cargo plan.		
2. Assist in preparing cargo documentation.		
3. Carry out a ship inspection prior to cargo work.		
4. Observe and assist in cargo gear operation and maintenance.		
5. Observe and assist loading and discharging of cargo.		
6. Assist in the keeping of a cargo operations record book/log.		
7. Assist in cargo calculations.		
8. Observe opening and closing of hatches/doors/ramps/ports.		
9. Accompany the person in charge of the reefer containers as he or she makes rounds.		
10. Accompany a mate as he or she makes the rounds checking lashings prior to departure.		
11. Assist chief mate with cargo/stores handling equipment inspection, testing, and recording.		
12. Using a sling psychrometer, take humidity readings in the cargo holds.		

Tank Vessel Specific Tasks	Officer's Initials	Date
1. Observe the entries made in the Oil Record Book.		
2. Observe and assist in tank cleaning operations and procedures.		
3. Observe and assist in operating the inerting system.		
4. Determine which type of purging system your vessel has: Dilution Method Displacement Method		
5. Observe and assist in the operation of fixed tank washing equipment.		
6. Observe and assist in the operation of tank gauging tapes.		
7. Observe and assist in the maintenance of a pressure vacuum valve.		
8. Observe and assist in tank stripping.		
9. Observe and assist in topping-off operations.		
10. Observe and assist in gas-freeing operations.		
11. Observe all pre-transfer conferences and inspections.		
12. Read and observe the use of the Declaration of Inspection.		
13. Observe and assist with the connection/ disconnection of cargo hoses or chiksans.		
14. Observe and assist with draining of the manifold containment system.		
15. Observe and assist in the testing of cargo tank atmospheres.		
16. Observe and assist in the maintenance and calibration of atmospheric testing equipment.		
17. Observe and assist in the operation of portable tank washing equipment.		

Tank Vessel Specific Tasks (cont.)	Officer's Initials	Date
18. Observe and assist with continuity testing of portable tank washing hose.		
19. Observe and assist with a pump room inspection during cargo operations.		
20. Determine cargo load and discharge rates, estimated time of completion, and total cargo on board.		
21. Observe and assist with an enclosed space entry.		
22. Observe and assist with cargo piping pressure testing prior to discharge.		
23. Observe cargo and vapor exposure precautions taken by crew during cargo operations (connecting, disconnecting, inerting, purging, tank cleaning).		
24. Observe and assist with vapor control during loading.		
25. Become familiar with the Oil Transfer Procedure Manual.		
26. Observe and assist the engineers with starting cargo pumps from the engine room.		
27. Observe and assist engineers with starting the inert gas system.		

Pollution Prevention	Officer's Initials	Date
1. Observe and assist in making entries in the Oil Record Book.		
2. Observe and assist in precautions taken to prevent oil pollution in the marine environment, (i.e., prior to fueling, loading, or discharging oil cargos).		
3. Observe rainwater management during cargo operations.		
4. Observe and participate in inventory of spill response gear.		
5. Observe location of all oil spill response and clean-up equipment.		
6. Become familiar with the oil spill response plan.		
7. Observe and assist with the operation of the oil content monitoring system.		
8. Observe the use of slop tanks and decanting systems during tank cleaning operations.		
9. Observe and assist with pump room bilge liquid management.		
10. Observe precautions taken to ensure ballast water is free of oil.		
11. Observe and participate in a ballast water change out.		

Stability	Officer's Initials	Date
1. Observe the calculating of the ship's stability.		
2. Try to learn to use the ship's stability program to calculate trim and stresses.		
3. Inspect the vessel's hydrostatic curves drawings.		
4. Observe and assist in ballasting operations.		
5. Trace your vessel's ballast system.		
6. Observe the calculation of sheer stress and bending moments for both in-port and at-sea conditions. Note maximum allowable limits.		

7. Observe the calculation of vessel sag (following loading) and hog (following discharge).	
8. Observe the procedures for dirty (storm) ballasting.	

Construction	Officer's Initials	Date

1. Determine if vessel is primarily transverse or longitudinally framed.	
2. Determine TPI at the summer loadline.	
3. Determine MT1 at the summer loadline.	
4. Find the shell expansion plan.	
5. Find and examine the capacity plan.	
6. Find and examine dry dock plan.	
7. Locate the outboard profile drawing and determine the frame spacing for your vessel.	
8. Locate and describe the use of the deadweight scale.	

Fire Prevention and Fire Fighting	Officer's Initials	Date

1. Observe and assist the officer in charge when he/she is organizing and conducting fire and emergency drills.	
2. Practice sounding the general alarm.	
3. Observe and assist in testing fire detection systems. a. Fire Alarms b. Fixed Auto Sprinklers c. Fixed Steam System d. Fixed Foam Systems e. Fixed CO2/Halon Systems f. Additional Systems	
4. Observe and assist an officer in the inspection of fire stations.	
5. Observe and assist an officer in the inspection of all fire fighting equipment.	
6. Observe and assist in the maintenance of fire and foam deck isolation valves.	

7. Observe precautions taken to prevent cargo vapor from entering the accommodations.	
8. Observe and assist with inspection, testing and maintenance of Self Contained Breathing Apparatuses and Emergency Escape Breathing Devices and any re-filling/cascade systems.	
9. Trace and describe the water firefighting piping system, including pumps, stations, isolation valves, deck foam monitors, etc.	
10. List locations of local and remote ventilation shutdowns and fixed extinguishing systems associated with them.	

Life Saving Officer's Initials Date

1. Observe and assist an officer in the organization and implementation of abandon ship drills.	
2. Practice sounding the abandon ship signal.	
3. Observe and assist an officer while inspecting survival craft (lifeboats/rafts) and other life saving appliances	
5. Observe and assist an officer in the inspection of immersion suits, thermal protective aids (TPAs), and life rings.	
5. Practice donning an immersion suit.	
6. Observe and assist an officer in the inspection and readiness of rescue boat(s).	

Medical Aid Officer's Initials Date

1. Observe and assist an officer in the inspection of medical stations and appliances.	
2. Observe and assist an officer in the inspection of emergency stations (eye wash, chemical wash, etc.)	
3. Observe and assist an officer in the organization and implementation of a medical evacuation drill.	
4. Become familiar with the procedures for helicopter evacuation.	

5. Observe and note the location of trauma kits, litters, etc.	
6. Observe use of chemical data guide and material safety data sheets (MSDS).	

Miscellaneous	Officer's Initials	Date
1. Stand one entire sea watch with each of the deck watch-standing officers. 8-12 12-4 4-8		
2. Stand at least one arrival and one departure watch with the engineering watch officer.		
3. Stand one watch with an engineer in port.		
4. Observe and assist in bunkering operations.		

Additional Tasks and Observations
Specific to the Type of Vessel

Task	Officer's Initials	Date

CRU 200L Part 3

Cadet Daily Activity Log

You are required to keep a daily log/journal of your professional and academic activities for a minimum of 60 days while on-board the vessel (not your personal time). Format as follows:

- typed, black ink
- single-spaced, multiple days on one page is OK! Save paper.
- 12-point Times New Roman font
- 1" margins all around
- cover sheet indicating where the activity log begins
- separate each day with a blank space, include the date for each entry
- mechanically fastened into CRU 200L folder as the last section
- each page must have header information that includes the name of your vessel in italics, and the type of vessel

Each daily entry should include a detailed daily account of your duties and tasks.

Remember, this is an activity log. Detail every important evolution in which you were involved. Include your role in these evolutions. Be as detailed as possible. Don't just say you were on watch or daywork; describe what you *did* on watch. Do not include what you did on liberty, or what you had for dinner, or what movie you watched.

Diary-like entries will detract from your grade. We don't want to read entries like these from previous projects: "I woke up today at 0610 and really craved a ham and cheese omelet." "The Chief Mate is a meanie." "Peering over the bow, I suddenly became transfixed with awe upon spying six bottlenose dolphins cavorting merrily in the crystal clear cobalt blue of the mighty Pacific rushing by." These are not the types of entries we want to see. We'd like to read about the specifics of your watch and/or daywork to give us an accurate sense of your commercial cruise experience, exposure and training.

General Instructions for Written Work for CRU 200 Parts 1-7:

Format

All written work, such as essays and short answers, are to be:

- Mechanically fastened (with metal, *not the plastic clip-ons*) in cardstock report covers provided
- MLA style
- typed, black ink, three-hole punched paper
- single-spaced, double-sided is preferable, as it saves paper (be sure to allow 1"margins sufficient to read the answer once it's in the folder)
- 12-point Times New Roman font
- 1" margins all around
- each page numbered within a section
- each part and question number clearly identified, so we know what question you are answering
- each page has header information that includes the name of your vessel in italics, type of vessel, and the section of project you are answering
- source all information (as appropriate) using MLA style
- where lists are called for, use a list format instead of a paragraph or narrative form

Not following formatting instructions will cause a loss of 1 – 60 points, regardless of content. You must label each answer indicating the question you are answering. Organize your work by heading and question number. *Do not include the entire question in your text. This will only trigger the* www.turnitin.com *program's plagiarism check.* Only include the number of the question you are answering.

Spelling and Grammar

Proof read your submissions. Points will be deducted for careless, sloppy spelling, improper punctuation, and/or poor grammar. A ship's name should always be italicized. The term "captain" should only be capitalized if a person's name immediately follows it, such as Captain Jones, but say, "My ship's captain was a grouch." Don't confuse "their", "they're", and "there", or "it's" with "its" or "you're" with "your." Submissions should conform to the MLA style. Submit only your very best work.

Research Required

The written portion of your project (Parts 1-7) will require you to do research, both aboard the vessel and possibly ashore. If you are unable to answer the question because the officers aboard can't answer your queries, or a specific text, document or feature does not exist aboard your vessel, do your best to research the matter before or after cruise and indicate your difficulties to the grader.

Complete Answers Required

Use as many words as necessary to completely answer the question without reverting to "filler" or redundancy. If a question does not apply to your vessel, try to modify the intent of the question to better fit your vessel, and indicate this to the grader. If a question asks about cargo

booms, you may have to answer about a towing winch, or stores boom, or barge lifting apparatus for example.

If you are having extreme difficulties responding to the project, contact the Assistant Director of Seagoing Careers as soon as possible. He or she will try to contact the instructor of record, but faculty are usually unavailable during the summer months.

Most Common Errors:

- ***Failure to Follow Instructions!***
- Failure to follow format and/or submission guidelines
- Failure to place proper header on each page
- Failure to italicize the vessel's name
- Improper capitalization of the word "captain" (Only capitalize "captain" if it is followed by a person's name, such as Captain Jones.)
- Failure to define all acronyms at their first use
- Failure to use page numbers and identify numbered or lettered paragraphs to correspond to questions
- Failure to appropriately spell-out numbers when required
- Use of a numeral to start a sentence. For example, "100 years ago . . ." is incorrect.
- Failure to use paragraphs indented five spaces to organize an answer
- Incomplete answers or drawings, sloppy drawings
- Use of repetitious, slang, immature, objectionable, or inappropriate words (like "sucked" ballast instead of "pumped" ballast)
- Bizarre, random capitalization or formatting
- Failure to proofread

While content is important, so is being able to present your thoughts and observations clearly and effectively. As college students, and soon to be licensed professionals, it is expected that you have the ability to express your ideas in a clear, concise manner. Regardless of the content, a significant portion of the points for written work will be lost if the format, spelling, punctuation, and/or grammar of your written work are improper. Be careful. Proofread. Pay attention to spelling and grammar, as well as to content. If poor writing makes it difficult for the reader, you are not communicating effectively and your score will suffer.

General Instructions for Drawings

All drawings shall be submitted only on the drawing cardstock which cannot be traced through, and may be placed in sheet protectors. They must be secured in the folder. Drawings must be clearly labeled and neatly drawn with a sharp pencil or pen. Drawings must be titled so the grader knows what is being displayed. Crude, freehand sketches are unacceptable. Draw only on one side of each page. Photocopies and computer drawings (CAD) are unacceptable. Drawings and diagrams must be done by hand using straightedges, triangles, compasses, drawing templates, stencils, etc. Drawings should use common symbols for shipboard items, such as life rafts, valves, etc. Drawings should have a symbol key. Lettering should be done very neatly, preferably using a stencil. Lists of required drawings are included in the instructions for each section and should be submitted with that section.

CRU 200 Part 1 – Vessel Information (25 points)

A. Give a general description of your ship. This should include, but not be limited to when and where she was built, who owns her, what type of cargo she carries, ports of call, her business or trade, if she is a tramp or liner, etc.
B. What organizations are responsible for the inspection of your ship (U.S. Coast Guard, American Bureau of Shipping, etc.) and how are these inspections scheduled and conducted?

CRU 200 Part 2 – Cargo and Vessel Mission (100 points essays/50 points drawings)

Note: You need to complete only one cargo section for the type of vessel on which you sailed. Include drawings in the submissions for this part.

General Cargo/RO-RO/LASH/Heavy Lift Ship

Required Drawings:

- Main Deck Cargo Equipment Arrangement
- Diagram of the Main Equipment Used for Cargo Operations
- Bridge Layout (including arcs of visibility)
- Main Deck Line Handling and Anchoring Equipment
- Lashing or Cargo Securing Gear Used

Required Essays:

A. Describe all cargo handling equipment. This should include cranes, booms and any other equipment used to load or off-load cargo. This description should include:
    a. Type of Equipment
    b. Manufacturer of Equipment
    c. Capability of Equipment, Lift Capabilities, etc.
    d. Source of Power for Equipment
    e. Any Special Operating Instruction or Procedures
    f. Type and Location of Hatches, Ramps, Doors, Side Ports
B. What sort of preparations must be done prior to loading, such as cleaning, outside inspectors, fumigation, equipment testing, cool down, etc.? Discuss the use of cargo plans and established safety rules and regulations.
C. Describe procedures for the completion of cargo operations. Explain how the cargo is secured for sea. Discuss lashing systems, shoring/tomming, locking mechanisms, etc. Who does this work? How long does it take? How much strain can the cargo lashings withstand?
D. What is a cargo damage survey and who conducts it? What forms and log entries are completed?
E. Describe in detail the normal states of stability aboard your vessel. What is the normal GM and rolling period? Are stability calculators used? How often is stability calculated and by whom? Is stress calculated aboard your vessel? How is stability information recorded?
F. What are the security arrangements and procedures utilized during the loading of wheeled vehicles? If passengers drive on, how are people leaving their autos handled with respect to security requirements?

Container Ship

Required Drawings:

A. Main Deck Hatch Arrangement
B. Profile Loading Plan Showing Maximum Load
C. Bridge Layout (including arcs of visibility)
D. Main Deck Line Handling and Anchoring Equipment
E. Lashing or Cargo Securing Gear Used (e.g. a stacking cone)

Required Essays:

A. Describe all cargo handling equipment including cranes, booms, and any other equipment used to load or off-load cargo. Include discussions of shore side equipment. This description should include:
    a. Type of Equipment
    b. Manufacturer of Equipment
    c. Capability/Capacity of Equipment
    d. Source of Power for Equipment
    e. Any Special Operating Instructions or Procedures
B. What sorts of preparations must be done prior to loading, such as cleaning, outside inspectors, fumigation, equipment testing, etc.? Discuss the use of cargo plans and safety rules and regulations. What happens when the ship and shore numbers don't match?
C. Does your vessel have a load program or is the load provided by shore? How is stability calculated? Who is responsible for the vessel's stability calculations? Describe how final stability numbers are determined. Describe in detail the normal states of stability aboard your vessel. What is the normal GM and rolling period? Are stability calculators used? How often is stability calculated and by whom? Is stress calculated aboard your vessel? How is stability information recorded?
D. Describe how containers are lashed aboard your vessel. Describe the different lashing methods used aboard your vessel for season or route. How much strain can the cargo lashings withstand? What is the maximum stack height? What determines stack height limits? Does it depend on your route or weather? What are the stress limits of a stacking cone or twist lock? What is the deck capacity of the hatch covers?
E. What is a cargo damage survey and who conducts it? What forms and log entries are completed?

Tanker

Required Drawings:

A. Tank Arrangement
B. Main Deck Cargo Gear Piping Diagram
C. Bridge Layout (including arcs of visibility)
D. Main Deck Line Handling and Anchoring Equipment
E. Manifold Piping Diagram and Deck Layout

Required Essays:

A. Describe all cargo handling equipment. This should include cranes, booms and any other equipment used to load or off-load cargo. This description should include:
    a. Manufacture of Equipment
    b. Type of Equipment
    c. Capability of Equipment, Pump Capacities, etc.
    d. Source of Power for Equipment
    e. Any Special Operating Instruction or Procedures
B. What is your usual cargo? At what temperature is it carried? How much do you carry? Discuss the characteristics of the cargo.
C. Describe the order in which tanks are discharged. Explain why the order is important. What is a normal discharge rate and pressure for your vessel? Which pumps are used? What are their rates? How are they checked and by whom? Describe stripping practices in detail. Are allowances made for trim and list?
D. Describe the order in which tanks are loaded. Explain why the order is important. What is a normal load rate? How long does the process take? Which pipelines are used? Describe topping-off practices in detail. What rates are used?
E. Describe the type and components of the inert gas system. Below what limit is the oxygen concentration maintained? Describe the deck seal and what purpose it serves. Discuss P/V valves. What logs or instruments monitor the IG system?

Passenger Ship

Required Drawings:

A. Main Deck Arrangement
B. Profile Plan
C. Bridge Layout (including arcs of visibility)
D. Main Deck Line Handling and Anchoring Equipment

Required Essays:

A. How many passengers does the vessel carry? What market is it in? Is it a family oriented cruise or does the ship cater to an older crowd? Are there any age/health limitations placed on passengers? Were any disabled passengers aboard? If so, what accommodations were made for them?
B. Describe the manning and crew organization aboard your vessel for each department. What nationality are the officers and crew? Are there language difficulties? Where did the officers get trained and how does their training compare with U.S. training? How long have most been working on passenger ships? Describe the pay and vacation schedule?
C. Describe the duties of the vessel's safety officer and any additional training or certification required. Describe any special security systems, inspections, and process. Describe access control to/from the vessel. Discuss screening of stores, baggage and persons. Are there any special precautions, training or personnel for anti-piracy protection? How are onboard passenger disturbances handled?
D. Describe the ballast and stabilization capabilities of your vessel. Under what conditions and at what speeds can stabilizers not be used? How much ballast does the vessel carry? Describe normal stability conditions aboard your vessel. How often is stability calculated and by whom? What is a normal GM and rolling period?
E. Describe onboard revenue streams such as casinos, bars and restaurants. What percentage of profit do these revenue streams represent?
F. Beyond the general safety system required in part Part 5, describe in detail the vessel's evacuation system from signal to releasing survival craft to the water. How are separate passenger and crew drills handled?

Hopper Dredge

Required Drawings:

A. Main Deck Equipment Arrangement (especially dredging gear)
B. Inboard Profile
C. Bridge Layout (including arcs of visibility)
D. Pumproom Layout
E. Drag-arm, showing all articulations
F. Dredging System Hydraulics
G. Jetting System (if fitted) and/or Pump Ashore System (if fitted)

Required Essays:

A. Give a detailed description of the project on which your vessel is currently working. Who is the client? Does the project involve new work or maintenance work? How large is the project in cubic yards? What is the project's estimated total duration? What is the expected project revenue (if you are on a private dredge)?
B. During the 60 days of your assignment aboard the dredge you are likely to see at least one of the following normal operations: replacing a draghead, changing out a drag wire, rebuilding a dredgepump, replacing a section of dredge piping, or replacing a sluice valve. Describe in detail how one of these operations is conducted and any safety precautions that must be observed.
C. How does the vessel get survey information of the project? Who is in charge of surveying? How often does the dredge receive survey information?
D. What type of electronic positioning system does the dredge use? Is it produced by the dredging company or an independent contractor? How does it compare with the vessel's ECDIS in function and ease of use?
E. Does your vessel have pump-ashore capabilities? If so, even if you did not actually observe the operation, describe how it is done. What are the procedures used for approach, hook-up, line-up, and start up, pumping ashore, shut down, disconnecting and moving away from the pump ashore station? Are tugs or assist boats used? How?

Tug

Required Drawings:

A. Main Deck Arrangement Including Line Handling and Anchoring Equipment
B. Profile Plan Including Underwater Propulsion Gear
C. Bridge Layout (including arcs of visibility)
D. Main Winch or Tow Handling Equipment

Required Essays:

A. Describe main propulsion arrangement. Is the vessel conventional, Z-drive, azipod, Voith-Schneider, etc.? Give the number of screws and whether they are open or ducted. What is the rudder type and arrangement? Describe the steering control arrangement. Describe any thrusters or pods. Describe the maneuverability of the vessel. Does she have a skeg and what purpose does it serve.
B. What is meant by the term "tripping the tug?" What procedures are enlisted to prevent or minimize danger to the tug during towing operations?
C. Describe the tow. Is the tow dedicated to the tug? What is the usual cargo, length overall (LOA), beam, and any specialized equipment or construction aboard the barge?
D. Describe towing arrangements such as towline, articulated tug and barge (ATB), integrated tug and barge (ITB), notch, pushing, or other. What precautions are taken when the vessel is towing that are not taken when the vessel is running light?
E. Describe the deck machinery including type and capacity of tow winches and associated wire or line. Describe any anchor windlasses, line handling winches, tuggers, fairleads, or cranes. Describe any remote operating stations for the tow winch. Does your vessel have any winch tension or line slippage alarm systems?

Offshore Supply Vessel (OSV)

Required Drawings:

A. Main Deck Arrangement Including Line Handling and Anchoring Equipment
B. Profile Plan Including Underwater Propulsion Gear
C. Inboard Profile
D. Bridge Layout (including arcs of visibility)
E. Main Winch/Crane or Cargo Handling Equipment

Required Essays:

A. Describe all cargo handling equipment. This should include cranes, booms, and any other equipment used to load or off-load cargo. This description should include:
    1. Manufacture of Equipment
    2. Type of Equipment
    3. Capability/Capacity of Equipment, Lift Capabilities, etc.
    4. Source of Power for Equipment
    5. Any Special Operating Instruction or Procedures
B. Describe procedures that are followed prior to and at completion of cargo operations. Discuss the use of cargo plans and established safety rules and regulations. Explain how the cargo is secured for sea aboard your vessel. Discuss lash-down points, shoring/tomming, etc. How much strain can the cargo lashings withstand?
C. Is your vessel subject to any weather/sea state restrictions? What can be done to protect the cargo if adverse weather is expected?
D. Describe the vessel stability letter and any operating constraints imposed by it. Describe the ballast and stabilization capabilities of your vessel. How much ballast does the vessel carry? Describe normal stability conditions aboard your vessel. How often is stability calculated and by whom? What is a normal GM and rolling period?
E. Describe the deck machinery including type and capacity of tow winch and associated wire or line. Describe any anchor windlasses, line handling winches, tuggers, fairleads, or cranes.

Miscellaneous Vessel

Required Drawings:

A. Main Deck Arrangement Including Line Handling and Anchoring Equipment
B. Profile Plan Including Underwater Propulsion Gear
C. Inboard Profile
D. Bridge Layout (including arcs of visibility)
E. Main Equipment Used to Complete the Vessel's Mission

Required Essays:

A. Describe the mission of your vessel in detail. Was the vessel originally constructed for this purpose or has she been modified? If so, describe the modifications.
B. Does the vessel have any special maneuvering capabilities or equipment (thrusters, nozzles, etc.)? What special techniques are utilized by the officers to maneuver the vessel? Is special training or documentation required?
C. Describe the vessel stability letter and any operating constraints imposed by it. Describe the ballast and stabilization capabilities of your vessel. How much ballast does the vessel carry? Describe normal stability conditions aboard your vessel. How often is stability calculated and by whom? What is a normal GM and rolling period?
D. Describe in detail all equipment used specifically to perform the vessel's mission. Include only mission specific equipment, not engines, etc.
E. Who runs the gear that allows the vessel to conduct its mission (scientists, mates, ABs, etc.)? What does it do? Who maintains it? It is required to be inspected? Explain.

CRU 200 Part 3 – Navigation (50 points)

You are expected to complete calculations for this section while onboard the ship. Clearly indicate which task or requirement you are fulfilling, such as noon slip calculations, sailings, and tides and current calculations. Take advantage of any opportunity you may get to do celestial work, such as sunrise and sunset calculations, star and sun reductions, compass error determination, and chronometer error and rate.

Solutions to problems should include clear step-by-step calculations with intermittent solutions indicated, with proper and logical form from beginning to end. Do not just record intermittent solution numbers from calculator registers and expect the grader to follow what you have done.

Noon slips and other documentation should be submitted neatly.

All pertinent navigational diagrams are to be neatly hand-drawn on cardstock. Drawings must be hand drawn. Computer graphics are unacceptable. All calculations must be calculated by you and all drawings and diagrams must be drawn by you. Noon slips calculated by a ship's officer will not enhance your grade and are no indication of your skills or progress. The list of required calculations and drawings follows.

If you are on a non-traditional vessel, you still will be expected to display your navigational skills by generating problems for ports you would like to visit. Be creative, but you must demonstrate your skills. If your vessel has equipment for celestial navigation you are expected to avail yourself of any opportunity (with permission) to try to use it. If your vessel does not have a gyrocompass repeater or other necessary equipment you must have the master sign a form so stating.

All navigation calculations must be submitted in the appropriate project report cover. Each entry should be clearly dated and labeled.

Scratch paper and sloppy submissions will not be considered and will adversely affect your grade.

Minimum required submissions:

A. Five noon slips. If your vessel does not calculate noon slips, so state and provide examples of whatever daily calculations the vessel performs. Regardless of what the vessel does, you are expected to calculate some version of a noon slip and a day's run for five days you're at sea. Noon slips should include: position, day's distance run, total distance run for the voyage, slip/efficiency, distance to go, required speed for ETA, desired ETA at next port, weather, sea temp, etc.
B. Calculate slip for your vessel. Include at least five slip calculations for different days. If your vessel does not have a shaft counter, ask the engineers for an estimate. Include daily vessel running information, or whatever operational information is submitted to the company on a daily basis.
C. Submit a copy of a voyage plan that you helped generate. Have an officer sign or otherwise indicate that you participated in the generation of the plan. If your vessel does not use voyage plans, explain what type of trip planning is done and provide an example in which you participated.
D. Submit four tide calculations (not a computer's) and four current calculations for four arrivals or departures, preferably of different ports. Use tide and tidal current table publications and work out the problems by hand, showing all work. Do not submit a

computer print out! If your vessel doesn't have tide and current tables, do them once you're ashore for ports you'd like to visit.

E. Submit a copy of an arrival and a departure slip or whatever information your vessel maintains to indicate the end/beginning of a voyage or job. Show all calculations and explain all entries.

CRU 200 Part 4 – Bridge Procedures (100 points)

A. Were pre-arrival meetings held where the arrival into port, pilotage, mooring arrangements, etc. were discussed? Describe.
B. Describe all means by which the vessel fixes its position.
C. If the vessel is equipped with an Electronic Chart Display and Information System (ECDIS) or Electronic Chart System (ECS), describe the unit and its features in detail. What make and model is it? How easy is it to use? Are paper charts still used? If so, are they kept up to date as required?
D. If your vessel has radar equipped with AIS integration, describe how it is used? Do the mates use it mainly for collision avoidance? Do they use it for communications with other vessels?
E. Describe the process of handing over a navigational watch aboard your vessel. What time does it occur? What information is passed? In your opinion, was the watch turn-over done in a professional manner or was it too relaxed?
F. What is the CPA for vessels:
    1. Meeting
    2. Crossing
    3. Overtaking
G. Is your ship GMDSS compliant? If so, what sea area is the ship certified for? If your ship is not GMDSS compliant, how would distress alerting be accomplished? Explain what GMDSS/communication equipment tests are performed on daily/monthly basis, and before arrival/departure? Who maintains and tests the batteries?
H. How and when are AMVER reports sent? What events require AMVER reporting? Describe how AMVER is sent on your vessel. Even if your vessel does not participate, explain AMVER requirements. (This information is found in Pub. 117).
I. What communications equipment does the vessel have for high speed data if any, and how is utilized? Does the ship have an internet connection? How is used? Does the system allow for instant messaging? What is the ship's primary means of communicating with shore-side support?
J. Describe in detail a gear test. This is a complete test of all bridge equipment, not just the steering gear.

CRU 200 Part 5 – Emergency Procedures (essays 100 points/drawings 50 points)

Required Drawings (50 points):

A. Firefighting Water Piping Arrangement
B. Foam System Piping Arrangement
C. Fixed CO2 System Arrangement and/or Halogen or other gas system
D. Lifesaving Gear/Liferaft/Lifeboat Layout (may be on multiple decks)
E. Ballast System

Required Essays (100 points):

A. Describe all fixed fire-fighting systems (CO2, water, halon, foam, etc.) aboard your vessel. Completely describe (make, type, capacity, RPM, prime mover, etc.) the types of fire pumps on your vessel and give their location. Discuss all protected spaces.
B. What types of emergency breathing apparatus are found on your vessel and where are they located? Describe their function and how long they last. Describe any cascade or refill system onboard.
C. Describe all emergency escape routes aboard your vessel. Which routes are marked? How are they marked and why? Is a low-light system and/or reflective signage used to indicate evacuation routes?
D. Describe emergency lighting and power generation aboard your vessel. What equipment and lights is serviced by the emergency generator or power source?
E. How many and what types of survival craft are aboard your vessel. Describe in detail each type of survival craft aboard. How many people can each hold? How are they launched? Who inspects them and how often?
F. Describe a fire and emergency drill aboard your vessel. Was it a substantial drill? Did people take it seriously? What could be done to improve the quality of the weekly drills?
G. Did the vessel ever conduct or did the officers ever discuss security drills? What were their concerns? Who is the vessel's security officer? Was the vessel ever modified for security reasons (e.g. additional lighting, doors modified, panic buttons, etc.)?
H. Describe any security related equipment aboard your vessel. Describe any security related incident aboard your vessel.
I. What forms or procedures are required before going aloft or into confined spaces on your vessel? What forms or procedures are required before working on a piece of electrical equipment? Describe the type of personal protective equipment supplied by the company to the vessel's crew.

CRU 200 Part 6 – Ship's Business and Environmental Protection (essays 100 points)

For each question, use an underlined topic heading in addition to the question letter. Use other than narrative format in questions that ask for things like lists or costing information. Please do not include a lot of unneeded narrative or editorial. This section is strictly concerning information, not your opinion. When discussing an issue driven by regulation, include the requirements of the regulation in addition to its applicability to your vessel. If any of the questions below are not applicable to your vessel, do not just ignore them, discuss the requirements the best you can by researching or interviewing senior officers. For Navy or MSC vessels, even though public vessel status may not require some of the items below, investigate and discuss them the best you can.

A. List every certificate your vessel maintains. Discuss the regulations that require each certificate, who issues it, how long it is valid, etc. Separate ship certificates from individual equipment certificates.
B. What logs does your vessel maintain? Discuss each log, who maintains it, and what it records. What information is entered into the USCG required Official Logbook (not the smooth deck log)? What is done with this log? Is it submitted to a regulatory body? What information is entered in it? How long is it maintained aboard?
C. Who is the charterer of your vessel? What is the vessel's charter or hire rate? How much money does the vessel make? What are fuel costs, labor costs, operating costs, etc. for your vessel? How much does the company charge its customers for service, carriage of cargo, towing, etc.? While some chartering rates may be sensitive or even unknown, do your best to investigate using senior officers or office personnel.
D. Who is the vessel's insurer? What types of insurance does she carry and what exactly is covered, or not covered? How much does it cost? Include COFR information in this section. If you cannot discover the premium amount because of sensitivity, discover the types of things insurances cover and how insurance is structured.
E. Describe the watch rotations for officers and crew. Describe how many people stand the bridge and cargo watches, and who stands each watch. How many hours per day do the officers and crew work? Does this change in port or during vessel mission operations? Does your vessel have formalized "watch conditions?" What are STCW or U.S. law (coastal) rest requirements? How does the vessel implement mandatory STCW rest periods? How does the master/mate ensure people are getting enough rest? Is this logged? In port, or during cargo operations, are the required rest periods often violated?
F. What is the Marine Pollution Act of 1973/1978 (MARPOL)? Does it apply to your vessel? How does your vessel prove compliance with MARPOL? Does the vessel have any documentation or certificates relating to MARPOL? If the vessel violates a provision of MARPOL, what happens?
G. Is your vessel ISM compliant? How does the vessel's Safety Management System (SMS) address MARPOL regulations and procedures? Discuss SMS on operational and maintenance procedures. Does your vessel utilize Job Safety Analysis and hazard (JSA & JSH) and is anything logged?
H. Describe the precautions your vessel takes to prevent pollution by stack emissions. Does your vessel engage in active emission controls such as speed limits, changing of fuel grades, etc.?
I. Describe precautions your vessel takes to prevent pollution from sewage. Describe the sewage treatment system aboard your vessel. Investigate the USCG MSD approved type, stages of process and how the system works. Discuss MARPOL Annex IV (Sewage) including effluent discharge and distances from shore.
J. Describe the precautions your vessel takes to prevent invasive species in ballast water? What regulations govern this?
K. Discuss MARPOL Annex I. Discuss engine room and pump room bilge water processing by OWS systems. If a tank vessel, describe the operation, record keeping, tests and training associated with the Oil Discharge Monitoring Equipment (ODME). Include oil record book details even though you may have mentioned it in the logs section.

CRU 200 – Part 7 – Reading Assignment and Book Report

Read a book selected from the list below and write a book report of 4-6 pages in length, following the submission guidelines for written work outlined earlier in the project. It should be clearly organized, not just a rambling discussion. Do not write a summary of the book's theme(s) or plot. In your report at a minimum discuss:

- if you learned anything from the book
- how the book has affected your thinking, behaviors, or perspectives
- if the tone, setting, or voice of the book enhanced or detracted from its message
- if any parts of the book dragged, or seemed like filler, or otherwise added nothing to the book, or even detracted from its message, or if it was a tight, concise, satisfying read, and
- ultimately, whether or not you would recommend the book to others and why.

The books selected by the Marine Transportation Department vary each year. All are award-winning, best-selling, culturally important, and/or industry-specific works.

The report must include a cover sheet reading "Part 7 – Book Report" and a title block in which the exact title, author, publisher, and edition must be stated. Your name should not appear on the report. No page header (vessel name and type) is required on the book report. All book reports must be submitted to www.turnitin.com

Please choose one of the below works:

Fiction/Memoir

"The Cruel Sea" by Nicholas Monserratt
"Atlas Shrugged" by Ayn Rand
"One Hundred Years of Solitude" by Gabriel Garcia Marquez
"The Caine Mutiny" by Herman Wouk
"Homage to Catalonia" by George Orwell
"Beloved" by Toni Morrison
"The Satanic Verses" by Salmon Rushdie
"The Adventures of Augie March" by Saul Bellow

Non-Fiction

"Drive" by Daniel Pink
"Unbroken: A World War II Story of Survival, Resilience, and Redemption" by Laura Hillenbrand
"The Closing of the American Mind" by Allan Bloom
"Outliers" by Malcolm Gladwell
"The Outlaw Sea" by William Langewiesche
"The Shallows: Is Google Making Us Stupid" by Nicholas Carr
"The Earth is Flat" by Thomas Friedman
"The Mis-Measure of Man" by Stephen Jay Gould
"I Know Why the Caged Bird Sings" by Maya Angelou
"The Boy Who Harnessed the Wind: Creating Currents of Electricity and Hope" by William Kamkwamba
"How We Decide" by Jonah Lehrer
"Shop Class as Soulcraft: An Inquiry into the Value of Work" by Mathew B. Crawford
"The Power of Habit: Why We Do What We Do" by Charles Duhigg

Appendix

Commercial Cruise Grading Matrix 2014

Cadet: _____ Code Number: _____

Date Submitted if Late? _____

Class of Vessel: _____ Route: _____

CRU-200L (3 units CR/NC)

Part 1 – Signing-on	CR/NC/INC
Part 2 – Required Tasks and Observations	CR/NC/INC
Part 3 – Cadet Daily Activity Log	CR/NC/INC
CRU 200L Grade:	**CR /NC/INC**

CRU-200 (5 units letter grade)

Part 1 – Vessel Information (25 pts)	_____
Part 2 – Cargo and Vessel Mission Essays (100 pts)	_____
Required Drawings (50 points)	_____
Part 3 – Navigation (50 points)	_____
Part 4 – Bridge Procedures Essays (100 points)	_____
Part 5 – Emergency Procedures Essays (100 points)	_____
Required Drawings (50 points)	_____
Part 6 – Business and Pollution Essays (100 points)	_____
Part 7 – Book Report 4-6 pages (25 pts)	_____
Points CRU-200 (600 points possible)	_____
- Late Penalty	(_____)
- Failure to Follow Format and/or Submission Instructions (1-60 points)	(_____)
Total Points CRU-200	**_____**
Letter Grade CRU-200	_____

Instructor of Record:

_____

Capt. Tuuli Messer-Bookman
Professor – Marine Transportation

Cadet Evaluation Form

Cadet's Name: _____ (Page 1 of 2)

Vessel Name: _____

To the Cadet's Supervising Officer:

In order for us to accurately assess the cadet's performance while onboard your vessel; we would appreciate your personal evaluation of his/her performance. This evaluation will factor in to the cadets education and conduct record.

Please return this evaluation to the cadet a sealed envelope, with **your signature across the flap**.

TASK	ALWAYS	SOMETIMES	RARELY	NEVER
Reports daily at expected time and remains the required length of time.				
Completed assigned tasks as directed and in a timely manner.				
Wore proper uniform/work attire at all times.				
Exhibits a positive attitude toward assigned tasks.				
Always prepared with proper Personal Protective Equipment (PPE).				
Demonstrates a mature understanding of a mate's responsibility.				
Openly shares ideas and asks meaningful questions.				
Demonstrates an understanding of the importance of responsible watch standing.				
Demonstrates honesty in all situations.				
Adapts to the needs of the ship and fosters teamwork.				
Respects authority and follows chain of command.				
Seeks to maintain a pleasant atmosphere for working/learning.				
Shows adequate knowledge of bridge equipment and proper use.				
Able to conduct safety/security rounds independently aboard vessel.				

Cadet Evaluation Form

Please feel free to comment on any of the strong or weak areas of the cadet's performance you have noticed. Should you wish to discuss this cadet's performance aboard your vessel, please don't hesitate to contact me at careerdevelopment@csum.edu or (707) 654-1072.

I supervised the above cadet for approximately _____ days.

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Officer's Printed Name: _____ Position: _____

Officer's Signature: _____ Date: _____

Officer's Contact Information (optional) _____

Thank you for your time and consideration in this important matter.

Department of Career Services
careerdevelopment@csum.edu
(707) 654-1072
The California Maritime Academy
200 Maritime Academy Drive
Vallejo, CA 94590

Cadet Ship Evaluation Form

Cadets shall complete this form and return to **Career Services**.
Please complete this form after you depart from your vessel. Be honest and thorough in your answers.
Your evaluation may be used to educate next year's cadets.
If so your name will be removed.

Cadet Name: _____

……

Company:_____

Vessel: _____

Route: _____

1. Would you consider working for this company after graduation? If No, why not?

2. What would you tell a freshman cadet if they asked you about your experience?

3. After your experience on commercial, what would be your Dream Job?

4. What was your favorite thing about commercial cruise?

5. Did the officers treat you fairly and take an interest in your education?

6. Did you have your own room?

7. If you were paid on your commercial cruise, how much did you make?

Sample PIC/DL Letter on Company Letterhead

Date
Officer-in-Charge
UNITED STATES COAST GUARD

RE: Tankerman Assistant Endorsement

To Whom It May Concern:

Cadet_____, SS#_____, has completed at least ninety days aboard the steam tanker Prince William Sound, having employed in the capacity of cadet between the dates of March 7 to June 13, 2002.

During his employment on board, the vessel loaded and discharged Alaskan North Slope crude oil at Valdez, Alaska and has discharged at various ports in the states of Washington and California.

Cadet_____ has participated in at least five loading operations, including at least two commencements and two completions. He/she also has participated in at least five discharge operations, including at least two commencements and two completions. He/she has also participated in at least five discharges that included crude oil washing.

The seaman above has demonstrated the following:

- Knowledge of pre-transfer inspection requirements
- Basic knowledge of the inert gas system, including vapor recovery operations
- Basic knowledge of pre-transfer conference and execution of Declaration of Inspection
- Able to assist in connection of cargo hoses and loading arms
- Able to assist in line-up of cargo system for loading
- Able to assist in line-up of cargo system for discharging
- Observed start of liquid flow for loading
- Able to assist with start of cargo pump and increasing pressure to normal discharge pressure
- Able to assist with topping off of cargo tanks during loading operation
- Able to assist with monitoring of ballast transfer
- Able to assist with stripping of cargo tanks
- Able to assist with ballasting and deballasting
- Able to assist with disconnection of the cargo hoses or arms
- Able to assist with securing the cargo system
- Ability to safely execute duties assigned by the PIC without direct supervision of the PIC

For further information concerning Cadet_____'s employment with Alaska Tanker Company, LLC, please contact me at the numbers listed below. Thank you for your attention.
Best regards,

PERSON-IN-CHARGE (PIC)

Cadet Full Name:_____ SSN#_____

Sea Time: 90 Days Required

Vessel	Date Shipped	Date of Discharge	# of Days	Master's Signature

Loadings: 5 Required

Vessel	Date	Port	Product	PIC Signature

Discharges: 5 Required

Vessel	Date	Port	Product	PIC Signature

Commencement of Loading: 2 Required

Vessel	Date	Port	Product	PIC Signature

Commencement of Discharging: 2 Required

Vessel	Date	Port	Product	PIC Signature

Completion of Loading: 2 Required

Vessel	Date	Port	Product	PIC Signature

Completion of Discharging: 2 Required

Vessel	Date	Port	Product	PIC Signature

WRITTEN PROJECT GRADING RUBRIC				
CONTENT	**ORGANIZATION**	**SENTENCES**	**WORD USE AND TONE**	**PUNCTUATION AND MECHANICS**
A 24-27% Superior understanding of writing context; valuable central purpose/thesis convincingly defined and supported with sound generalizations and with substantial, specific, and consistently relevant details; rich content distinctive because of its originality or perceptiveness or persuasiveness or thoroughness; strong reader interest.	A 21-23% Unusually clear plan related to thesis; developed with consistent attention to proportion, emphasis, logical order, and smooth flow and synthesis of ideas; paragraphs coherent, unified, and effectively developed; strong title, introduction, and conclusion.	A 18-20% Sentences skillfully constructed: unified, coherent, forceful, effectively varied; deftness in coordinating, subordinating, and emphasizing ideas; skillful use of parallelism; harmonious agreement of content and sentence design; impressive.	A 15-17% Diction distinctive: fresh, precise, concrete, economical, and idiomatic; word form mastery; transitions between quotations and original text strong; appropriate, consistent, and engaging tone.	A 12-13% Clarity and effectiveness of expression promoted by consistent use of standard punctuation, capitalization, and/or spelling; quotations punctuated correctly.
B 22-23% Accurate grasp of writing context; worthwhile central purpose/thesis clearly defined and supported with sound generalizations and relevant details; substantial reader interest.	B 18-20% Clear plan developed with attention to proportion, emphasis, and logical order and synthesis of ideas; paragraphs coherent, unified, and effectively developed; transition between paragraphs usually smooth; effective title, introduction, and conclusion.	B 16-17% Sentences correctly and coherently constructed with some variety; capability in coordinating, subordinating, and emphasizing ideas; no errors even in complicated patterns; clear.	B 14% Clear diction: accurate, effective, and idiomatic; minor errors in word form or occasional weakness in word choice, but clear; appropriate and generally consistent tone; satisfactory transitions between quotations and original text.	B 10-11% Flow of communication occasionally diverted but not confused by errors in standard punctuation, capitalization, and/or spelling.
C 19-21% Acceptable but cursory understanding of writing context; routine purpose/thesis supported with adequate generalizations and relevant details; suitable but predictable content, somewhat sketchy or overly general; occasionally repetitive or irrelevant material; one or two unsound generalizations; some reader interest.	C 16-17% Conventional plan apparent but routinely developed; paragraphs unified, generally coherent, but minimally effective in development; one or two weak topic sentences; transitions between paragraphs clear but abrupt, mechanical or monotonous; routine title, introduction, and conclusion.	C 14-15% Sentences constructed clearly and correctly but lacking in distinction; minimal skill in coordinating and subordinating ideas; little variety; clarity weakened by 1-2 awkward, garbled, incomplete, fused, improperly predicated or comma spliced sentences; 1-2 errors in modification; acceptable.	C 12-13% Diction adequate: generally accurate, appropriate, and idiomatic but often predictable, wordy, or imprecise; limited vocabulary; clarity weakened by any combination of 2-3 errors in subject-verb agreement, pronoun agreement, point of view, forms of nouns, pronouns, verbs, adjectives, or adverbs; mechanical or inconsistent tone; awkward or jarring transitions between quotations and original text.	C 9% Adequate clarity and effectiveness of expression, but weakened by any combination of some errors in punctuation, capitalization, and/or spelling.
D-F 0-18% Little or no grasp of the writing context; central purpose/thesis not apparent, weak, or irrelevant to assigned topic; inadequate supporting points or details; irrelevant material, numerous unsound generalizations, and/or needless repetition of ideas; insufficient, unsuitable, unclear, vague, or insubstantial content; minimal or no reader interest; less than required length.	D-F 0-15% Plan not apparent, inappropriate, undeveloped, or developed with irrelevance, redundancy, inconsistency, or little order or progression; paragraphs frequently incoherent, underdeveloped, or not unified; transition between paragraphs unclear or ineffective; weak and ineffective title, introduction, and conclusion.	D-F 0-13% Sentences marred frequently enough to annoy or frustrate the reader; numerous sentences incoherent, fused, incomplete, comma spliced, or incorrectly predicated; excessively monotonous or simple construction; unacceptable.	D-F 0-11% Diction unacceptable: vague, inappropriate, unidiomatic, or substandard language that distracts the reader or obscures content more often than is comfortable; numerous errors in word form; inappropriate or inconsistent tone.	D-F 0-8% Communication hindered or obscured by frequent errors in punctuation, capitalization, and/or spelling.

CAREER SERVICES

SUPPLEMENTAL INSTRUCTIONS FOR DOCUMENTATION

You **must** submit the following ***original documents*** by the due date to Career Services in the color plastic pouch provided in your Cruise Project materials (include *copies* with your submitted project, and keep *copies* for yourself):

- Your **original** discharges or sea service letters
- All supervisors' evaluations (sealed)
- PIC/DL forms (for cadets on tankers)
- TOAR documents (for deck cadets on tugs only)
- Cadet's Ship Evaluation
- Sea Service Report form

Copies of all sea service letters/discharges, TOAR and PIC/DL documents are to be submitted with your written project for grading. Both Career Services and the Commandant's Staff will review the evaluations received from Masters, Chief Mates, and Chief Engineers.

Failure to submit the required documentation to the Career Center by the due date of the project in the color plastic pouch provided will result in not receiving credit for your sea time, endorsements, cruise project and/or cruise course (8 credits).

Please do not hesitate to contact the Career Center if you have any questions.

Deborah Bauer, M.S.
Assistant Director of Sea Going Career Services
Cadet Shipping Coordinator
CAL MARITIME
200 Maritime Academy Drive
Vallejo, CA 94590
707.654.1072 office
707.654.1073 fax
dbauer@csum.edu

SEA SERVICE REPORT

CRU 200, 225, 250, 275

Cadet Name (*Last, First*):_____

Mariner Reference Number:_____

Employer/Company Name:_____

Vessel Name	Vessel Number *(USCG or Port of Registry)*	Vessel Number *(IMO)*
Type of Vessel *(Tanker, Tug, Ro-Ro, Ferry, Dredge, ATB, etc)*		
Vessel Tonnage (Gross/Net)	Mode of Propulsion *(Motor, Steam, Gas Turbine, etc)*	Horsepower (HP or KW)
Date of Embarkation	Port of Embarkation	
Date of Disembarkation	Port of Disembarkation	

If service dates are broken, or cadet serves aboard various vessels – use additional tables to record each set of dates served and/or each vessel.

Vessel Name	Vessel Number *(USCG or Port of Registry)*	Vessel Number *(IMO)*
Type of Vessel *(Tanker, Tug, Ro-Ro, Ferry, Dredge, ATB, etc)*		
Vessel Tonnage (Gross/Net)	Mode of Propulsion *(Motor, Steam, Gas Turbine, etc)*	Horsepower (HP or KW)
Date of Boarding	Port of Boarding	
Date of Disembarkation	Port of Disembarkation	

Vessel Name	Vessel Number *(USCG or Port of Registry)*	Vessel Number *(IMO)*
Type of Vessel *(Tanker, Tug, Ro-Ro, Ferry, Dredge, ATB, etc)*		
Vessel Tonnage (Gross/Net)	Mode of Propulsion *(Motor, Steam, Gas Turbine, etc)*	Horsepower (HP or KW)
Date of Boarding	Port of Boarding	
Date of Disembarkation	Port of Disembarkation	

Vessel Name	Vessel Number *(USCG or Port of Registry)*	Vessel Number *(IMO)*
Type of Vessel *(Tanker, Tug, Ro-Ro, Ferry, Dredge, ATB, etc)*		
Vessel Tonnage (Gross/Net)	Mode of Propulsion *(Motor, Steam, Gas Turbine, etc)*	Horsepower (HP or KW)
Date of Boarding	Port of Boarding	
Date of Disembarkation	Port of Disembarkation	

Vessel Name	Vessel Number *(USCG or Port of Registry)*	Vessel Number *(IMO)*
Type of Vessel *(Tanker, Tug, Ro-Ro, Ferry, Dredge, ATB, etc)*		
Vessel Tonnage (Gross/Net)	Mode of Propulsion *(Motor, Steam, Gas Turbine, etc)*	Horsepower (HP or KW)
Date of Boarding	Port of Boarding	
Date of Disembarkation	Port of Disembarkation	