

R/V Pelican Cruise Planning Manual



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Introduction

Louisiana Universities Marine Consortium

The Louisiana Universities Marine Consortium (LUMCON) was formed in 1979 to coordinate and stimulate Louisiana's activities in marine research and education. LUMCON provides coastal laboratory facilities to Louisiana universities, and conducts research and educational programs in the marine sciences.

To increase society's awareness of the environmental, economic and cultural value of Louisiana's coastal and marine environments by conducting research and education programs directly relevant to Louisiana's needs in marine science and coastal resources and serving as a facility for all Louisiana schools with interest in marine research and education.

LUMCON's primary facilities are located at the Defelice Marine Center in Cocodrie, approximately 85 miles southwest of New Orleans. The W.J. Defelice Marine Center is the principle site of LUMCON's activities. The Marine Center is a 75,000 square foot complex of research, instructional, housing, and support facilities. The Consortium also operates a fleet of research vessels providing platforms for research conducted in Louisiana's bays, estuaries and the open waters of the Gulf of Mexico. This document provides a complete description and cruise planning format for prospective users of LUMCON's flagship vessel, the R/V *Pelican*.

More information about LUMCON including directions to the facilities can be found on the LUMCON [Website](#).

Vessel Operations

R/V *Pelican*, along with the rest of the LUMCON's research fleet, is administered through the Vessel Operations Office at the Defelice Marine Center. All questions concerning scheduling, pre-cruise planning, financing, onboard hazardous materials or any other aspect of the operation or outfitting of vessels should be referred to Marine Operations:

Marine Operations LUMCON

(985) 851-2800
8124 Hwy 56
Chauvin, LA 70344

Joe Malbrough, Marine Superintendent

(985) 851-2808
jmalbrough@lumcon.edu
Fax: (985) 851-2863

John Bourg, Administrative Assistant

(985) 851-2807
jbourg@lumcon.edu
Fax: (985) 851-2863

Scheduling for the R/V *Pelican* is done through the Universities National Oceanographic Laboratories Systems (UNOLS). Operating Schedules and time requests for the R/V *Pelican* can be found at the [UNOLS Time Request Website](#).

A number of smaller LUMCON vessels are docked at the Marine Center and are available for charter alone, or in conjunction with the R/V *Pelican*. They include the 58' R/V *Acadiana* and a number of small, shallow draft vessels. Additionally, LUMCON operates the R/V *Point Sur* for the University of Southern Mississippi out of the Port of Gulfport.

R/V Pelican

History and Vessel Management

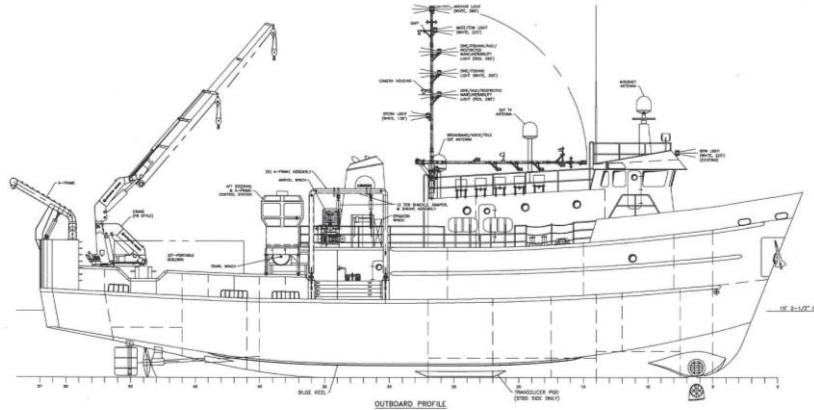
The R/V *Pelican* was built in 1985 with state funding at Allied Shipyard in LaRose, Louisiana. The vessel is owned by LUMCON and is operated out of the Marine Center in Cocodrie, Louisiana. In 2003, the R/V *Pelican* underwent a refit upgrading most of the scientific equipment onboard and adding an additional ten feet to the stem.

The R/V *Pelican* was designed and outfitted to conduct a variety of oceanographic research missions. The reliability, utility and seaworthiness of this vessel have been well demonstrated. The R/V *Pelican* has successfully conducted scientific trawling, large box core sampling, thirty-foot piston cores, shallow seismic surveys, current meter array and benthic boundary array deployment and recovery. The R/V *Pelican* has also successfully conducted plankton sampling, hydrographic casts with CTD-rosette systems and underway sampling with towed water-sampling systems.

The R/V *Pelican* is operated as an Oceanographic Research Vessel as designated by the United States Coast Guard and is maintained as an American Bureau of Shipping (ABS) Class A-1+, AMS vessel. The Consortium is a member UNOLS and the R/V *Pelican* is a designated UNOLS vessel.

Revenues generated by the operation of the vessel support the R/V *Pelican*. The vessel is available for legitimate research and education programs of Consortium members, state and federal agencies and other nonprofit groups. For more information about costs and the availability of the vessel contact the Marine Superintendent.

R/V *Pelican* Particulars and Description

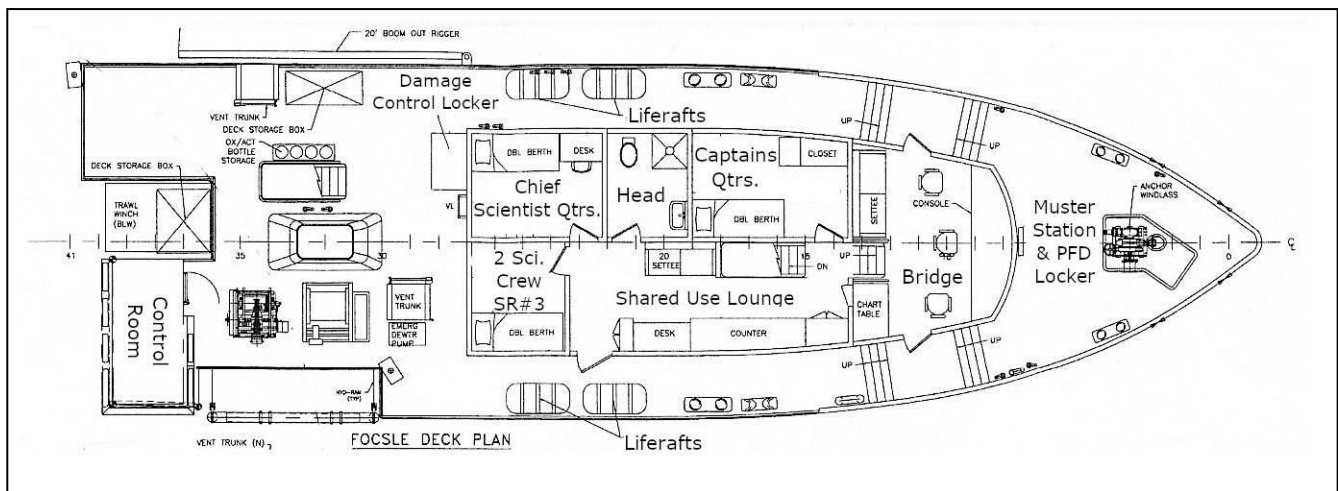


Length Overall	116 ft. 4 in.
Beam	26 ft. 6 in.
Draft (full load)	9.5 ft.
Height (to top of mast)	53 ft.
Displacement tonnage	514.59 LT
Gross Registered Tonnage	261 GRT
Maximum deck load	25 LT
Maximum sustained speed	9.2 knots
Maneuvering speed	0-9 knots
Range	3,490 miles
Endurance	18 days
Weather Limitations	Limited over-the-side capabilities in Force 6 conditions (8-12 ft.)
Work Schedule	24 hour/day
Total Berths	22
Crew	6*
Marine Technician	1*
Scientific staff	14*
Electrical	460/208(3-phase)/120(single phase) VAC 60 Hz
Propulsion	2x 3412 Caterpillar Diesel Engines
Bow thruster	80 h.p. Schottel

*These are mission dependent factors. The number in the ship's crew increases and the scientific crew decreases when occupying stations where extra crew is required for running deck equipment

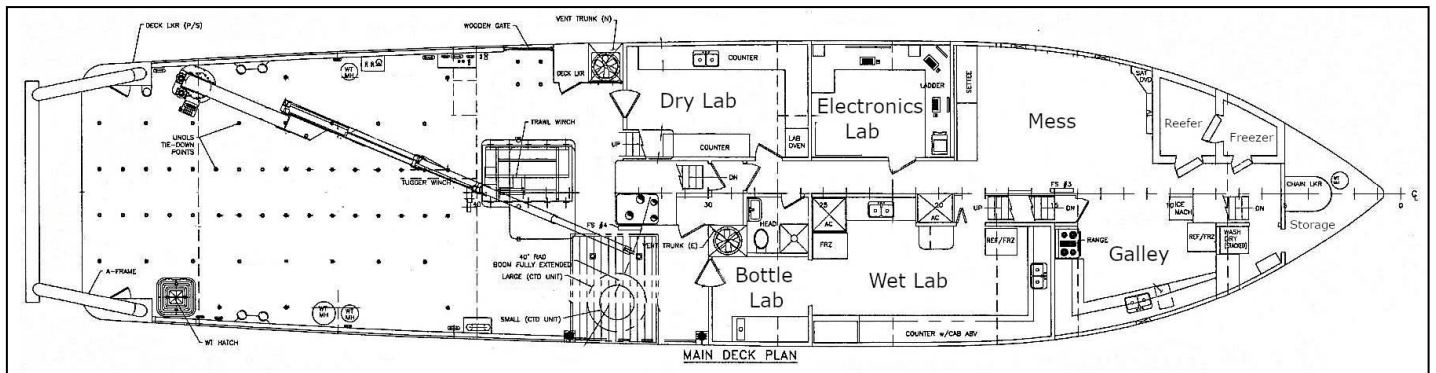
Decks

- Upper (01) Deck
 - 936 sq. ft. above the labs, galley and mess, and accessed via a stairwell on the main, weather deck or through the bridge. The ship's hydrographic winches and two aft control stations are located on this deck. A starboard aft control station contains complete ship's controls including bow thruster, hydrographic and trawl winch controls, A-frame controls, remote readout for winches, and a VHF radio. This station gives full view of main deck and is enclosed with air conditioning.



- Ship's navigation (radar domes, GPS antennas) and communication antennas are located above the bridge. Air conditioner compressors are mounted centerline above the staterooms. Access to the area above the bridge is restricted.
- A Shared Use Area in the cabin on the Upper Deck has limited dry counter space. Other items on this deck include:
 - Life Rafts: Two 10 man and two 12-man inflatable life rafts are located along the rail mid-ships port and starboard. Extra life jackets (21) are carried in a locker on the bow.
 - Life rings: 8 total, 4 with water lights.
 - Damage control locker: Located aft on the 01 Deck house. This locker contains emergency equipment to be used by the ship's crew in the event of a fire or collision.
- There is very little unused space on this deck. Some scientific gear (coring pipe, containers etc.) can be stored along the rails and under stairwells leading to bridge.

- Main Deck



- Bottle Lab

- 56 sq. ft., located starboard amidships (see photo Appendix A). Access is forward through the dry lab, aft through watertight door to aft deck. Wash table and bottle rack (SCUBA tanks), 110 VAC ship's power, running seawater and MIDAS flow through system is located in this lab.

- Wet Lab

- 273 sq. ft., located starboard, forward of bottle lab (see photo Appendix A). Access is aft through the bottle lab, forward into the mess. Wood surfaces with tie-downs on countertops, drawers and cabinets for storage, two double sinks, running hot and cold potable water, reverse osmosis and Nano-pure purified water systems, 7 cu. ft. freezer, 10 cu. ft. refrigerator/freezer, multiple outlets with 110 and 208(3 phase) VAC ship's power, network ports, computer monitor with ship's navigation and MIDAS readout, navigation data serial hubs, and computer terminal for general science use.

- Dry Lab

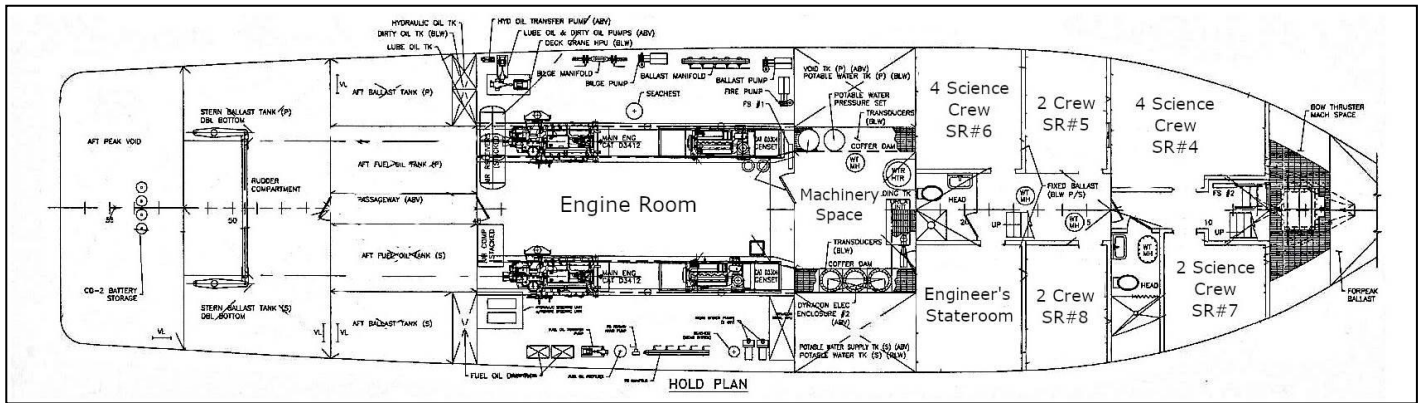
- 124 sq. ft., located port amidships (see photo Appendix A). Access is aft through watertight door onto the back deck and forward into passageway. Wood surface with tie-downs on countertops, cabinet storage below, one double sink with running hot and cold potable water, fume hood, 110 and 208(3phase) VAC ship's power, network ports, computer monitor with ship's navigation and MIDAS readout, computer terminal for general science use, and navigation data serial hubs.

- Electronics Lab

- 100 sq. ft., located port amidships, forward of dry lab (see photo Appendix A). Access is from main deck passageway. Amenities include wood counters, VHF radio, 110 VAC ship's power. This lab is for Marine Technician operations, containing data acquisition computers (including CTD, MIDAS, ADCP, etc.) and supplies.

- Hold Level

- Forward of the machinery space, in two separate watertight compartments, is berthing for six ship's crew and ten science crew members. Personnel are requested to use the stairwells to move between the two berthing compartments as the watertight doors are reserved for emergency use only.



Shipboard Equipment

**The scientific party is prohibited from operating deck equipment. Extra boat crew may be needed for activities requiring the simultaneous use of more than one piece of deck gear.*

Crane

The Appleton crane is a pedestal mounted, articulating and extending, foldable boom unit designed for a marine environment. The crane consists of a mounting pedestal with a turntable bearing which supports the rotating portion of the crane. The rotating portion includes the crane turret, main boom, jib boom, two hydraulic extensions and two manual extensions. With the extensions, the crane is rated dynamically for 3,100 lbs. at 40 feet. The crane is capable of operation with rated loads at list angles of up to 8 degrees and is American Bureau of Shipping certified.

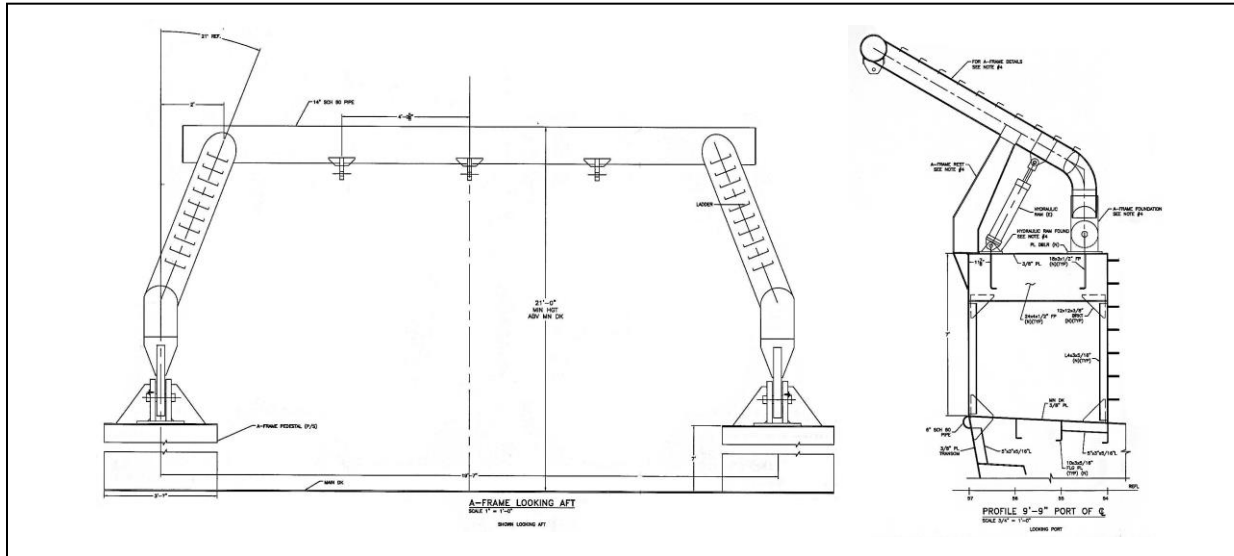
Lift Capacities:

Radius	Lifting Weight
5 ft. 9 in.	22,500 lbs.
10 ft. 6 in.	14,750 lbs.
16 ft. 2 in.	9,550 lbs.
27 ft. 7 in.	6,800 lbs.
33 ft. 11 in.	4,000 lbs.
40 ft. 2 in.	3,100 lbs.

Main (Stern) A-Frame

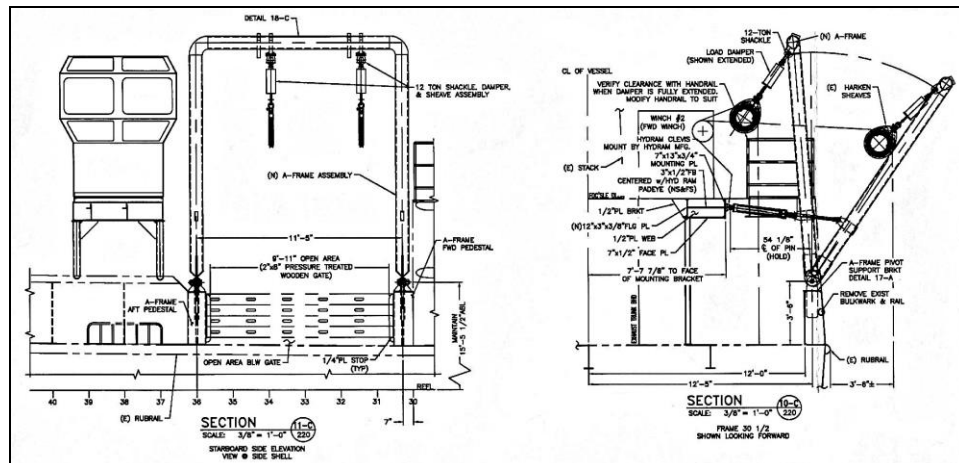
The stern-mounted A-frame has an SWL of 15,000 lbs., a clearance height of 17' 8", and a clearance width of 15'. The A-frame is hydraulically powered and swings outboard to give a 6' 8" clearance over the stern. It is equipped with a modified General Oceanic trawl block designed for ½" cable. With this block attached, the overhead clearance is 13' 11". The A-frame is primarily used in conjunction with the trawl winch for mooring deployment and retrieval, net trawls, and tow packages.

The A-frame is equipped with lights, various cleats and pad eyes, and other smaller blocks.



Starboard (CTD) A-frame

The starboard A-frame is located on the starboard side main deck, and is used in conjunction with both the Markey COM7 and Dynacon 394T hydro winches. It has a safe working load of 7,000 lbs. and a clearance height of 17' (14' 1" and 13' 2" with use of blocks, see figure), and a clearance width of 8' 3" through the loading gate. The A-frame is hydraulically powered and swings outboard to give a 4' clearance over the starboard side. Uses include deployment of CTD rosette, sediment samplers, small nets, etc.



Hydrographic Winches

Hawboldt Industries SPRE-2640/RS with a right angle level-wind. Capacity: 5000m of 0.322" triple conductor EM cable in 29 layers. SWL is 2640 lbs. Includes an active heave control and electronic load compensation. Fitted with IEC slip ring. Located starboard aft 01 deck, used in conjunction with the side A-frame for primary CTD operations. This winch is controlled from the outboard station of the control room.

Markey COM7 diamond screw level wind. Capacity: 2100 m of 0.322" three conductor EM cable. SWL 2000lbs. Located forward of the Hawboldt, used in conjunction with side A-frame. Controls in starboard aft control station. Networked and centrally logged LCI-90i electronic readout including: line count, speed, and tension.

Trawl Winch

DYNACON 805 Multi-Purpose Oceanographic Winch System

Specifications:

- Overhead, Right-Angle Level Wind System
- Local Control Station with Line Count, Line Speed and Line Tension
- Remote Control Station with Line Count, Line Speed and Line Tension Display
- Data displayed and recorded with LCI90i Winch DAC system.
- Interchangeable Winch Drums: 7000 meters 0.5" 3 X19 wire rope cable, 1600meters 0.5" 3X19 wire rope cable, and 6000 meters 0.322 in. three conductor cable.
- Level wind Sheave Double Grooved to Accommodate Multiple Cable/Wire Diameters:
 - 0.322 in. OD Cable
 - 0.500 in. OD Cable
 - 0.680 in. OD Cable Safe Working Load:
- 17,000 lbs. @ bare drum in low speed
- 8,580 lbs. @ bare drum in high speed Maximum Line Pull (SWL X 1.25): 21,250 lbs. High Speed Line Speed:
 - Max. Pull: 179fpm @ full drum
 - Min. Pull: 341fpm @ full drum
 - Low Speed Line Speed:
 - Max. Pull: 113 fpm @ full drum
 - Min. Pull: 215 fpm @ full drum

This winch is usually used in conjunction with the stern-mounted A-frame. Local controls are primarily used for trawling, coring, towed arrays, and mooring deployment.

Miscellaneous Deck Equipment:

- **Ground Tackle-** McElroy Model 524 double drum windlass, with 900 feet of chain. Located forward of the bridge with local controls.
- **Tugger Winch-** hydraulic, with line pull of 5,000 lbs. Located aft of main trawl winch.
- **Capstan-** Marco hydraulic, line pull of 800 lbs. Located on aft main deck. The capstan is used for handling loads suspended from A-frame (fair led to deck).

- ***Small boats-***

- 15' aluminum hull/foam collar Safe Boat used for dive operations, small buoy retrieval, etc. Equipped with a 90 h.p. Evinrude motor.
- 10' AVON inflatable, with floorboards. Equipped with 15 h.p. Johnson outboard motor. This small boat is usually stowed ready for use on the 01 Deck. However, it may be used in conjunction with the larger safe boat for cruises needing extensive small boat work, or as backup.

R/V Pelican Technical Services

The marine technician department at LUMCON services the UNOLS vessel, R/V *Pelican*, the 57' non-UNOLS R/V *Acadiana*, and several small boats as well as providing help to institution members where skill overlap occurs. The R/V *Pelican* is the technician's primary responsibility.

Technicians are responsible for all scientific gear aboard the R/V *Pelican*. This includes all items listed on the UNOLS shared equipment inventory under R/V *Pelican*; CTD, ADCP, Echosounder, Gyrocompass, GPS, flow through, meteorological equipment, etc. The technicians are also responsible for maintaining the instrumentation and proper function of the three winches. Satellite communications and the ship's computer network are maintained by the two technicians. Typically, any electronics aboard the ship fall under the tech's responsibility including the bridge navigational equipment. This is in part due to the small crew size but also due to the marine tech's unique skill set. Onshore, techs are involved with maintenance of equipment, preparation for future cruises, and any other tasks deemed necessary to support the Vessel Operations department.

Pre-cruise planning is led by the marine superintendent, initially. Once contact has been made, the technicians contact the chief scientist and their crew to determine science needs and any special preparations that need to be made. The UNOLS Cruise Planner is used as the starting point for the conversation we have with the scientists prior to the cruise. We go over each piece of equipment requested to ensure the scientist understands its capabilities and limitations and to clarify if it will serve the purpose they hope it will. Sometimes details such as rated depths for particular CTD auxiliary equipment are missed and we go over this in our pre-cruise dialogue that is typically done by email. The R/V *Pelican* tends to have shorter cruises relative to some larger vessels, which make the crew accustomed to altering operations to accommodate each user. Calibration of instrumentation is managed in accordance with manufacturer's recommendations. For most Seabird sensors, annual calibrations are conducted. Ideally, equipment is serviced during slow periods but that is often difficult as the vessel's schedule is very busy. The vessel ideally carries a full complement of spares on board, no savings can be made by delaying calibrations.

**A comprehensive list of R/V Pelican's scientific instrumentation and equipment is listed in Appendix C*

Cruise Preparation

Finance

The standard daily rate for the R/V *Pelican* covers costs of fuel, food and of the all ship's equipment for a total compliment of 22 including a standard 6- person ship's crew and one LUMCON Marine Technician. Extra crew will be added for 24 hour operations using equipment requiring additional manning. Generally, deployment and recovery of large packages (1/4m² large trawls, etc.) require extra personnel to operate deck equipment. Additional crew costs are not prorated.

Loading time in excess of 12 hours will be charged at the standard at-sea rates. All costs incurred outside of normal fees for preparing the ship for sea will be added to the final billing. Loading time away from our dock at the Defelice Marine Center will be charged at the standard rate.

There will be no reimbursement made for days lost due to weather. The user will be responsible for crew and vessel preparation cost if this office is not notified of significant deviations in cruise plans at least 24 hours in advance of planned departure time.

All prices are subject to change, unless guaranteed in writing by the Marine Superintendent.

Scheduling

Requests for ship time should be submitted to the Marine Superintendent as soon as possible through the [UNOLS Ship Time Request System](#). Requests will be accommodated on a first come first serve basis in most cases. However, fully funded research activities will be given priority over proposal stage requests.

Because every effort is made to recover the operating costs of the R/V *Pelican* through external funding, short cruises or cruises for which full funding is not yet available may be superseded by major, fully funded cruises. Affected cruises will be rescheduled into the next available time slot.

There is no scheduling deadline, but to avoid confusion, and prevent the necessity of rescheduling existing cruises, we ask that you notify this office as soon as your research proposal is submitted.

UNOLS Cruise Planner

A pre-cruise form can be found on the [UNOLS Cruise Planner](#): This form should be submitted as early as possible in order to provide ample time to prepare the vessel and equipment for your cruise. Before the ship sails, a cruise plan must be on file in our office. While at sea the Captain should be informed of all requested changes to the approved cruise plan.

Insurance

LUMCON does not provide Medical or Accident Insurance for passengers aboard the R/V *Pelican*. The Marine Superintendent may require evidence of insurance coverage.

Diving

LUMCON is a member of the American Association for Underwater Sciences (AAUS) and has

adopted the dive manual drafted by this organization. Diving activities aboard LUMCON vessels must be in compliance with the regulation set forth in the AAUS Standards for Scientific Diving Certification and Operation of Scientific Diving Programs. In addition, all divers MUST be AAUS certified.

All divers must be certified through a nationally recognized diver training organization and be at least a LUMCON Scientific Diver in Training. Divers should also provide evidence or references to substantiate their ability to conduct the planned diving activities. An approved dive plan containing copies of participants "C" cards, a full description of the work to be performed, with locations, water depths, and approximate bottom times, must be available before departure time.

The LUMCON Dive Safety Officer should be contacted well in advance of the planned activity because he or she must approve all diving activities.

David Muncher
Dive Safety Officer
Email: dso@lumcon.edu

Hazardous Chemicals

A chemical cabinet is available on board for storing hazardous materials. All hazardous chemicals must be stored in shatterproof bottles or protected by shock absorbent containers.

In the event of a spill, notify the ship's crew immediately. Do not flush caustic or toxic chemicals down the sink unless you have cleared it with a member of the ship's crew.

Radioisotopes

The LUMCON Radiation Safety Officer must approve the use of radioisotopes in advance. A radioisotope van is available for use on the vessel. The Chief Scientist should be prepared to discuss procedures for the safe handling, usage and storage of these materials before the ship sails. He/she must also provide a copy of his/her permit to handle radioactive materials and show evidence of having conducted a wipe test upon leaving the vessel. A copy of the results of this test must be forwarded to the Marine Superintendent.

Brian Roberts
Radiation Safety Officer
Email: broberts@lumcon.edu

**Radioactive materials are not allowed inside the skin of the vessel.*

Shore Support and Facilities

The R/V *Pelican* is accessible at the Marine Center via a paved road. The small tidal amplitude in this region of the Gulf makes the task of loading and unloading the ship rather simple. The ship's crane is available for equipment weighing up to 8,000 lbs. The lifting of heavier loads (up to 25 tons) can be accommodated by a heavy lift crane next to the Marine Center. This is a privately owned facility and the charges for the heavy lift crane's use will be added to the final vessel invoice. A 4,000 lb. capacity forklift is available at the Marine Center at no cost.

A limited number of personnel will be available for loading the ship. Since it may be necessary to move the ship to load, please be explicit about your loading requirements on your vessel request form so that the appropriate crewmembers will be available.

Shipments

There is no air service to Cocodrie, Louisiana and very limited service to Houma, Louisiana, which is the nearest city. All airfreight should be sent through a delivery carrier (e.g. Flying Tigers). Major express carriers (UPS, Federal Express, etc.) have daily service to the Marine Center. Most major truck lines know where we are but you should allow extra time for your shipment. All shipments should be addressed as follows:

Marine Superintendent
Louisiana Universities Marine Consortium 8124 Hwy. 56
Chauvin, LA 70344

*Note: DO NOT USE THE U.S. POSTAL SERVICE FOR LARGE SHIPMENTS. The Chauvin Post Office is very small and space to store large shipments is limited. LUMCON is NOT responsible for shipping scientific equipment. It is the responsibility of the scientist to see that equipment is shipped from LUMCON properly. We do not accept COD packages.

There is limited covered storage for equipment shipped in preparation for upcoming cruises. Please notify the Marine Superintendent of your intent to ship and identify clearly on the outside of the package your cruise number or chief scientist. Mishandling or improper storage of your equipment may result if we have no way of identifying its owner.

The Marine Center is about two hours from the New Orleans International Airport. In most cases rented transportation cannot be returned to Houma. Uncovered, guarded parking is available at the Marine Center. Scientific staff will not be allowed to bunk onboard at the dock more than 12 hours in advance of the scheduled departure time. Housing is available at the Marine Center.

Limited shop facilities are available at the Marine Center. There are excellent fabrication (metal and wood) shops available a short distance from the Center. Hardware and supply stores are also available in Houma and Chauvin. We prefer that you establish your own accounts with the local vendors. Ground transportation can be provided for last minute trips to the hardware store.

Visiting scientists can request laboratory space at the Marine Center. A variety of analytical services are available, in addition to various pieces of laboratory or sampling gear not listed with shared use equipment. Please contact the Marine Superintendent for more information about the availability and cost of specific items.

Aboard Ship

Pre Cruise Meeting

Before departure a pre-cruise meeting will be held aboard ship. The Captain, Marine Superintendent, or his representative and appropriate members of the ship's crew should be present. The Chief Scientist and other members of the scientific staff deemed appropriate should attend.

The cruise plan, scientific work schedule or any other pertinent information about the planned cruise should be discussed at this time. This allows all of the members of the crew and shore side staff to be informed of the planned activities.

Before leaving the dock the captain will give a brief introduction to the ship and her crew to the entire scientific party.

Chief Scientist's Responsibilities

The Chief Scientist is the official liaison between the ship's crew and the scientific staff. All changes in cruise plan must be directed to the ship's Captain through the Chief Scientist. Appropriate, general information for the scientific staff will be transferred through the Chief Scientist.

During 24 hour operations, a scientific watch officer should be appointed to act in the absence of the Chief Scientist. During dangerous over-the-side operations an experienced and capable scientific deck officer should be appointed to oversee the deployment and recovery of gear. The Chief Scientist shall be responsible for the rest of the scientific crew on deck and will interact directly with the ship's chief deck officer. Standard hand signals or VHF radio should be used at all times when communicating with the equipment operator or ship's officer at the stem station.

The Chief Scientist shall also be responsible for assigning bunks to the scientific staff. The general conduct of the scientific staff is the responsibility of the Chief Scientist. Research Vessel Cruise Assessments should be completed and returned to LUMCON Vessel Operations by the Chief Scientist.

The Chief Scientist is responsible for the following:

1. [UNOLS Ship Time Request](#)
2. Approved Dive Plan
3. Approved Radioisotope Plan
4. Pre-Cruise Plan ([UNOLS Cruise Planner](#))
5. Cruise Plan ([UNOLS Cruise Planner](#))
6. Science Crew Medical Information ([UNOLS Cruise Planner](#))
7. Research Vessel Cruise Assessment

**(1-6) Are to be subitted prior to planned cruise dates. (7) Is to be completed after the cruise and sent to LUMCON Vessel Operations.*

Shipboard Administration

The standard crew aboard the R/V *Pelican* consists of the Captain, Mate, Chief Engineer, Assistant Engineer, Cook, Marine Tech and Deckhand.

The Captain of the ship has authority over operation of the vessel. Although his primary responsibility is the safety of the ship and her crew, he also must provide every facility within his control to guarantee the success of the scientific mission. The decision to terminate operation due to unsafe conditions will be made by the Captain. The decision to proceed to a port of refuge and the cruise tract to that port are the responsibility of the Captain. Extra costs resulting from such changes will be the responsibility of the scientific charter.

In the absence of the Captain, the Mate will be available for routine matters. The Captain must be consulted in the event of major changes in cruise plans.

A ship's deck officer will also be present during all over-the-side activities. This officer has complete responsibility and control of all activities on deck during these times. He will follow the directions given by the scientific deck officer, but will have control should an unsafe situation occur.

Living Aboard

The vessel will be available for loading and unloading for at least 12 hours before and after each cruise. Meals are not normally provided during this time.

Before the ship sails, the Chief Scientist will assign scientific staterooms. The R/V *Pelican's* stateroom layout can be seen in the Upper Deck and Lower Deck sections. Towels and linen will be provided. There are no stewards aboard R/V *Pelican*, so you are responsible for the cleanliness of your own quarters.

Laundry facilities are available aboard and are open for general use unless restricted by the Chief Scientist (i.e. 24 hour CTD stations, etc.) Rough weather may at times preclude use of the washing machine. You should bring enough clothing to last the entire cruise. The ship does not provide foul weather gear. Rubber boots, deck shoes or other non-skid footwear is required on the open decks at all times. Flip-flops or other open toe shoes may not be worn outside the skin of the ship.

Upon completion of the cruise, please remove the linens from your quarters and put them in the laundry room. Please make an effort to remove and dispose of all unwanted items before leaving the ship.

The engine room, fiddley, machinery space and the area above the bridge (where radars are located) are off limits. If you have business in these areas or wish to visit the engine room, please notify the appropriate crewmember.

Shoes and shirts (not undershirts) must be worn to all meals. The galley and dining area must be cleared of personnel one hour before and after each meal. Meals are served buffet style and individuals on watch should be given priority. Between meals, snacks and access to the freezer and refrigerator with soft drinks and snacks are available to all personnel. You are responsible for cleaning up after non-designated meal times.

Meals will be served at the following hours:

Breakfast	0600-0700
Lunch	1200-1300
Dinner	1800-1900

Those with special food requirements or dietary restrictions should make note of these items when submitting cruise requests, or provide this information on the pre-cruise form.

Shore to Ship Emergency Communications

In case of emergency messages, the R/V *Pelican* can be reached directly via satellite connections at (985) 377-1626. Normal domestic charges apply when calling the ship from land.

Medical Facilities

A medical locker is maintained aboard ship in the shared use area. The ship's medical officer controls access to the locker and he will be happy to help should you need any of the ship's medical provisions. Additionally, first aid kits are located forward of the galley and in each of the labs. An AED can be found in the galley along with supplemental oxygen cylinders.

Please bring your own seasick medication or any other prescriptions that you anticipate needing

**Scientists must submit medical information at least one week prior to the cruise using the [UNOLS Cruise Planner](#).*

Shipboard Safety

Upon boarding the ship, familiarize yourself with the location of all life rings, preservers, rafts, fire extinguishers, and other emergency equipment in the compartments you will be occupying. Fire and Emergency drills will be conducted soon after leaving the dock and once a week after the ship is at sea.

Emergency instructions are posted in the galley and in all staterooms. The following standard fire and emergency procedures will be used:

Fire and Emergency

continuous blast of ship's whistle and ringing of the general alarm bells for a period of 10 seconds. (Report fires immediately to the bridge.)

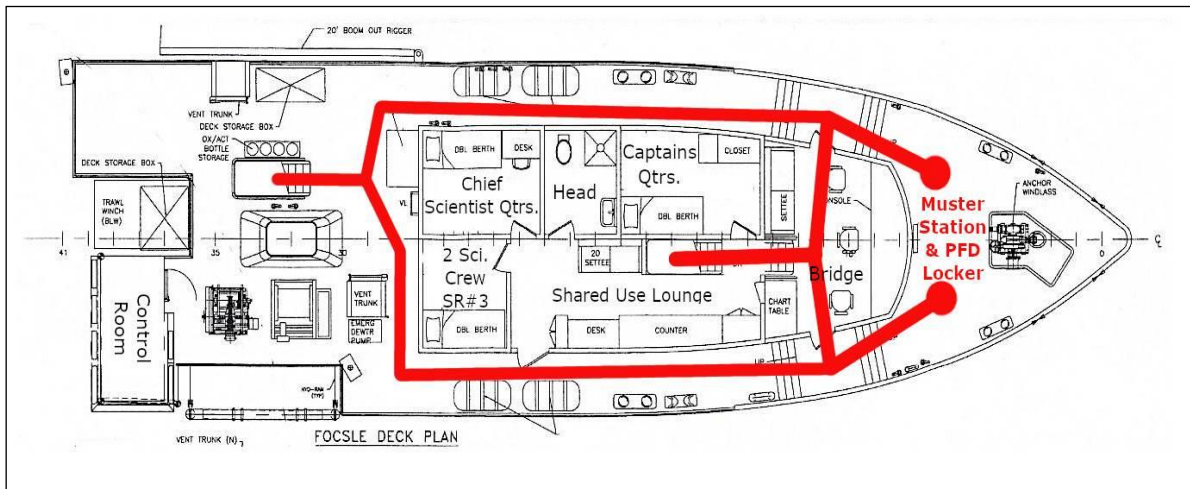
- Don a life jacket. Lifejackets can be located in all staterooms, under the tables in the galley, forward in the wet lab, and in the locker forward of the wheelhouse on the 01 Deck. Do not return below decks for lifejackets or personal affects.
- Scientific staff musters on the 01 Deck forward of the wheelhouse. The cook and other members of the crew will be available on the 01 deck to direct you further.



Man Overboard

Signal same as emergency signal above.

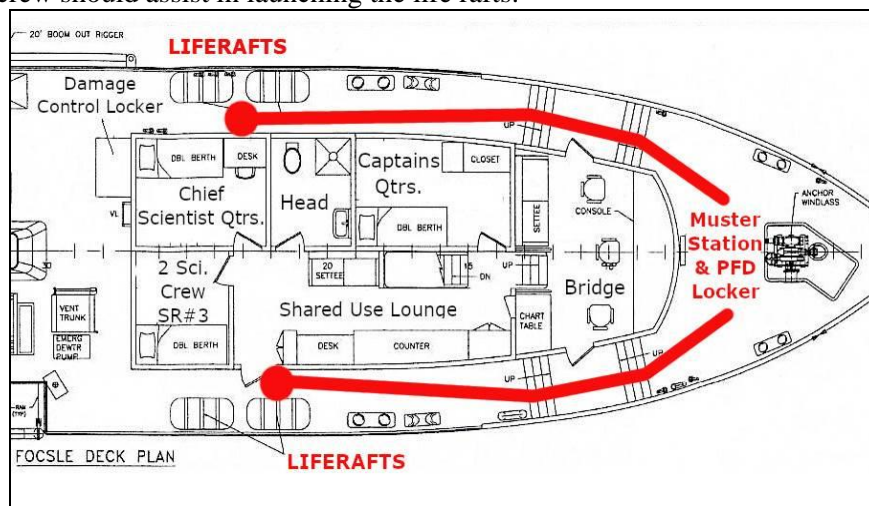
- Throw a life ring toward the person.
- Hail and pass the word “MAN OVERBOARD” to the bridge.
- All hands muster on the 01 Deck for a head count and lookout.
- Report the position of person overboard



Abandon Ship

Seven short and one prolonged blasts on the ship's whistle and the same on the general alarm bell.

- Don a life jacket
- Scientific party musters on the 01 deck near the rescue boat. The cook will be available to direct you further.
- The entire crew should assist in launching the life rafts.



Drill Dismissal

Three short blasts from the whistle and three short rings on the general alarm.

**A detailed accounting of all emergency procedures, deck, and operational safety will be given to the science crew on the evening before departure.*

Restrictions

- The R/V *Pelican* is a Zero Tolerance (Alcohol and Drugs) ship. The possession of all non-prescription controlled substances is strictly forbidden.
- Anyone with prescriptions containing narcotics will be required to notify the Captain; such medications will be logged.
- No smoking is permitted inside the ship.

Appendix A: R/V *PELICAN* NAVIGATION

Importing Waypoints and Routes

The navigation software used onboard the R/V *Pelican* allows for the downloading of waypoints and routes from an external source (for example, an emailed file or copy brought onboard by the scientific crew). The crew of the R/V *Pelican* encourages the use of this feature for its simplicity and also to help reduce the possibility for errors when manually entering multiple waypoints. If received ahead of time (i.e. with the cruise plan), the crew can better prepare for your upcoming cruise (possible port of entries, fuel consumption, etc.).

Importing Waypoints:

Your text must be formatted such that a comma separates each piece of information. The first field must be the mark's name, followed by the latitude, then the longitude. Any extra fields will be combined into the notes for the mark. Hemispheres are recognized by negative or positive latitude and longitude. Since the R/V *Pelican* works primarily in the Gulf of Mexico, your waypoints will have a positive value for the latitude, and a negative value for the longitude. KML files are preferred for uploading to the ship's navigation system. Google Earth is a simple way to obtain this formatting. All values must be given in decimal degrees.

Example: Mark Name, 30.12345, -80.123 45, CTD #1, Water Samples

Importing Routes:

The text for the importing of routes is much like that of waypoints. A comma must again separate each piece of information. However, the first field must contain the characters "\$XXWPL" (allows the software to recognize the text as a route). This field is then followed by the latitude, the latitude hemisphere, longitude, longitude hemisphere, and the waypoint name.

Example: \$XXWPL,4030.0000,N,06045.0000,W,WaypointName

Appendix B: R/V *Pelican* Lithium Battery Safety and Handling Guide

Lithium Ion Batteries

Lithium batteries are used extensively in consumer electronics and within the oceanographic community. This section provides a general overview; more detailed information and procedures are provided in the references below. There are two types of lithium batteries:

- Primary lithium batteries – non-rechargeable, containing lithium metal which reacts with water.
- Secondary lithium-ion batteries – rechargeable, containing no lithium metal. These are the type normally found in consumer products such as laptop computers.

The most dangerous failure of primary and secondary lithium batteries is a hot cell condition, caused by an internal or external short-circuit of a cell or battery. If the temperature continues to rise, the battery may vent fumes that can irritate the respiratory tract, eyes and skin, and it may explode. Manufacturers report that inadvertent short circuits caused by abuse during handling are the largest single source of field failures for both lithium and lithium-ion cells. All primary lithium batteries must be treated as hazardous material while aboard a vessel.

Guidelines for primary lithium batteries onboard research vessels:

- Identification: It is important that the planned use of primary lithium batteries aboard an R/V be identified and discussed as part of cruise planning. It is the responsibility of the Chief Scientist to provide the R/V crew a list of all primary lithium batteries to be brought aboard, including identification of type, size and any special handling instructions.
- Handling, stowage and use aboard R/Vs: Primary lithium batteries must be handled carefully during loading, unloading and use to prevent battery damage. New, unused lithium batteries that arrive in undamaged condition from the manufacturer pose less risk than batteries that have been used and recovered from the “hostile” marine environment. After use, especially in an underwater deployment, lithium batteries should be carefully inspected for possible damage. Whether new or used, primary lithium batteries must be stowed in a flammables storage cabinet and identified on the space hazard placard. Both crew and embarked science parties must be trained in safe handling procedures and to recognize an unsafe lithium battery condition.
- Charging: Improperly charging lithium batteries usually degrades battery performance and life, but can cause more serious issues such as fire or explosion. There are many types, chemistries, and cell configurations for lithium batteries used to power remote controlled vehicles (drones, boats, underwater vehicles, etc.), portable electronics, or other equipment. If the equipment has a dedicated, simple (no user input) charger, the battery charger and cables should be inspected for damage, labeled, and only used for the specified equipment. Generally, most consumer based electronic devices (phones and laptops) have dedicated chargers. However, remote controlled vehicles (and possibly other devices) often do not come with a dedicated battery or battery charger. Because of the varying types and chemistries, many chargers used for these batteries can accommodate many different battery configurations. Inputting the correct settings for each battery type and chemistry is important, and not necessarily intuitive. Therefore,

it is important that personnel responsible for the equipment be properly trained on charging the batteries safely.

- Emergency procedures: In general, hot cells or fires in or around primary lithium batteries should be cooled with ample amounts of water, and affected spaces secured and vented to prevent the spread of fumes. A portable ABC extinguisher should be used on secondary lithium batteries. Previous guidance may have advised use of a class D extinguisher, but more recent information indicates that a class D extinguisher should not be used for either type of lithium. Halon 1301 has also been shown to be ineffective for lithium batteries. Emergency response teams must be trained in lithium battery emergency procedures. If an onboard fire threatens to raise the temperature of lithium batteries significantly, the batteries may be jettisoned.

Guidelines for secondary lithium batteries aboard research vessels:

- Identification: No special inventory or identification is required for secondary lithium batteries in widely-used consumer electronics.
- Handling, stowage and use aboard R/V: No special handling or stowage requirements, beyond normal care and avoidance of exposure to high temperatures, flames, corrosive chemicals, etc., are required. Secondary lithium batteries may remain installed in the equipment powered by the batteries.
- Charging: Secondary lithium batteries in consumer electronics should only be charged with the dedicated charger in accordance with manufacturer instructions.
- Emergency procedures: A portable ABC extinguisher should be used in the event of a hot cell condition or fire in a secondary battery. A class D extinguisher, contrary to previous guidance, should not be used. As with primary batteries, secondary batteries may be jettisoned if threatened by an onboard fire.

Further Reading:

- WHOI Lithium Battery Safety Procedure:
<http://whoi.edu/ehs/occsafety/lithiumbattery.pdf>
- FAA testing information:
http://www.fire.tc.faa.gov/pdf/systems/lithiumion_battery_04112006.pdf
- UL 1642: Standard for Safety of Lithium Batteries. URL:
https://standardscatalog.ul.com/standards/en/standard_1642_5
- UL 2054: Standard for Household and Commercial Batteries. URL:
https://standardscatalog.ul.com/standards/en/standard_2054_2
- NAVSEA TM-S9310-AW-SAF-010: US Navy Technical Manual for Batteries, Navy Lithium Safety Program Responsibilities and Procedures.
https://my.nps.edu/documents/103425239/106436235/LithBatt_NAVSEA_TMS9310-TechManual-Rev2-2010.pdf/f274b46d-ca26-4e0f-83e7-cf13df49dc62
- NAVSEA SG270-BV-SAF-010: High-Energy Storage System Safety Manual
file:///C:/Users/user/Downloads/SG270-BV-SAF-010_27APR2011.pdf
- USCG 46 CFR Subchapter J, Electrical Engineering.
- <https://www.gpo.gov/fdsys/granule/CFR-2005-title46-vol4/CFR-2005-title46-vol4-chapI-subchapJ>

Works Cited:

University National Oceanographic Laboratory System. "Lithium Batteries." *Research Vessel Safety Standards*, 10th ed., UNOLS, 2015, pp. 9–6–9–8.

Appendix C: R/V *Pelican* Tech and Deck Equipment

CTD/ROSETTE SYSTEM

R/V Pelican is equipped with Seabird Electronics 9/11 CTD system. Standard package includes the following: Pressure, Dual SBE03 Temperature, Dual SBE04 Conductivity, Dual SBE43 Dissolved Oxygen, Altimeter, and Beam Transmission

YOU MAY SELECT UP TO 4 AUXILIARY SENSORS

- Fluorometer: Chlorophyll a, Chelsea Aquatracka III, 6,000m DEPTH RATING
- Fluorometer: Chlorophyll a, Wetlabs Wetstar Mini Fluorometer, 600m DEPTH RATING
- Fluorometer: Chlorophyll a, Seapoint, 6,000m DEPTH RATING
- Fluorometer: UV/CDOM, WETLabs CD-2000, 2,000m DEPTH RATING
- Fluorometer: UV, Chelsea Aquatracka III, 6,000m DEPTH RATING
- Fluorometer: UV, Seapoint, 6,000m DEPTH RATING
- Optical Backscatterance Sensor, D&A Model OBS-3+, 1,000m DEPTH RATING
- PAR, Biospherical Instruments QSP-2300, 1,000m DEPTH RATING
- pH and Redox Seabird SBE27, 1,200m DEPTH RATING (Requires 2 positions, if selected you can ONLY pick 2 more)

THE FOLLOWING SENSORS CAN BE ADDED TO THE CTD UPON REQUEST IN ADDITION TO THE 5 AUXILIARY SENSORS

- WETLabs AC-9, 9 wavelengths spectral transmittance & absorption, 500m DEPTH RATING
- SPAR, Biospherical Instruments Surface PAR

CTD CAROUSEL WATER SAMPLING

- Seabird SBE32 12 position 5L bottle carousel (60-L total capacity)
- Seabird SBE32 12 position 12L bottle carousel (144-L total capacity)
- Seabird SBE32 24 position 10L bottle carousel (240-L total capacity)

SCS UNDERWAY DATA ACQUISITION AND FLOW-THROUGH SEAWATER

- The vessel's seawater intake is located 2.75m (9ft) below the water's surface*
- The seawater system can provide flow rates up to 7.5 L/min (2 gal/min) depending on location of scientific equipment and number of connections

The Vessel's SCS Underway Data Acquisition System Includes the Following Oceanographic and

Meteorological Sensors:

- Sea-bird Electronics SBE 21 Thermosalinograph for Temperature, Conductivity, and Salinity
- WetStar Fluorometer for Chlorophyll a
- Biospherical Surface PAR Deepwater Echosounder
- Eppley Long and Shortwave Radiometer System
- Primary & Secondary R.M. Young 92000 Response-One All-in-One Weather Sensor Includes: Air temperature, relative humidity, barometric pressure, wind speed and direction)

In addition, you may select one of the following transmissometer for the flow-through system:

- WETLabs C-STAR 25-centimeter path length transmissometer (Recommended for relatively clearer water)
- WETLabs C-STAR 10-cm path length Transmissometer (Recommended for relatively turbid/cloudy water)

ACOUSTIC DOPPLER CURRENT PROFILER (ADCP)

The vessel utilizes University of Hawaii Data Acquisition System (UHDAS) to collect and process ADCP data.

CORING/BOTTOM SAMPLING

- m2 Gomex type Stainless Steel Box Grab
- Bauma 0.25 m2 Stainless Steel spade footbox grab with 3 boxes
- Benthos Gravity Corer (Recommended core liners: 10ft length, 2.5in ID, and 2.75in OD)
- Ocean Instruments MC-800 Multi-corer Deep Ocean Sediment Sampler
- Box Dredge

ADDITIONAL INSTRUMENTATION & EQUIPMENT

- Freezer and Refrigeration for sample storage
- Tracklink USBL for tracking equipment. 6000m depth, 5000m slant range (Transponders weigh 55lbs each)
- Thermo/Barnstead mn 7155 Reverse Osmosis type I water purifier:
- Barnsted Nanopure Diamond Ultrapure 18.2M Ω water:
- Lab Van 20'X8' Air Conditioned, running water, 120VAC, hepa-filter air, and small refrigerator:

POWER/VOLTAGE SUPPLY

- 120VAC at 20amp is supplied throughout the vessel. Other voltages may be provided upon request

RADIOISOTOPE WORK

- 10'X8' Rad Van
- 20'x8' Rad Van

SMALL BOATS

- 10 foot Small Avon
- 15 foot Safe Boat

Appendix D: R/V
Pelican Medical
Form



R/V *Pelican*
Louisiana Universities Marine Consortium
Medical Information Form

Date: _____ Cruise: _____

Name: _____ Phone: _____

Address: _____

Birth Date: _____ PhD / Technician / Student / Other _____

Employer/School: _____

In Case of Emergency, Notify: _____

Relationship: _____ Phone: _____

Personal Physician or Clinic: _____

Allergies: _____

Blood Type: A / AB / B / O RH Factor: Pos / Neg

Please list and explain any major conditions that the captain/emergency medical personnel should know (diabetes, heart trouble, epilepsy, hearing problems, asthma, high blood pressure):

Please list prescriptions and over the counter medications you take regularly (including motion sickness medication):

I authorize personnel of the R/V *Pelican* and LUMCON to release necessary medical information to health care providers in the event of illness or injury:

Signature

**Please do not email forms with personal/medical information. Print a hard copy to give to the captain upon arrival at the vessel. Medical forms will be kept in a locked file cabinet for the duration of the cruise in case of emergency and then destroyed at the end of the cruise.*