User Manual

R/V KA'IMIKAI-O-KANALOA

The purpose of this page is to familiarize you, the scientists and user, with the Operating Procedures of the R/V KA'IMIKAI-O-KANALOA. We hope that this information will assist you in making your plans and provide you with background information for a cruise that is not only successful and productive, but enjoyable as well.

I. ORGANIZATIONAL STRUCTURE

A. Administration. The R/V KA'IMIKAI-O-KANALOA is owned by the State of Hawaii and operated by the University of Hawaii. The University of Hawaii research vessels are under the operational control of the School of Ocean and Earth Science and Technology (SOEST). Operation of the R/V KA'IMIKAI-O-KANALOA, including hiring of the crew, ship maintenance, and logistics support, is the responsibility of the staff at the University Marine Center (UMC) at Snug Harbor under the supervision of the Marine Superintendent. Responsibility for scientific equipment, ship scheduling, cruise planning, and reports is under the jurisdiction of the Port Operations Manager (UMC).

B. SOEST Key Personnel. The School of Ocean and Earth Science and Technology is located on the Manoa Campus of the University of Hawaii at 1680 East-West Road, Honolulu, Hawaii 96822. Personnel of SOEST involved in Ship Operations are: the Dean, SOEST, phone (808) 956-6182, and the Director of Administration, SOEST, phone (808) 956-9110.

C. UMC. The University Marine Center Marine Operations is located at #1 Sand Island Access Road, Snug Harbor, Honolulu, Hawaii 96819. Normal working hours are 0700 to 1530 Hawaii Standard Time.

Key Personnel: Marine Superintendent, phone (808)842-9814, Port Operations Manager, phone (808)842-9815, Purchasing Agent, phone (808)842-9811. The UMC fax number is (808)842-9833, E-mail is snug@soest.hawaii.edu.

D. Port Facilities. Snug Harbor is part of Honolulu Harbor. The facility is located on the left side of the Sand Island Access Road traveling South just before you reach the bridge to Sand Island. Sand Island Access Road is located mid-way between the airport and downtown on Nimitz Highway, the main highway between Honolulu Airport and Downtown Honolulu (State Route 92). Pier 45 at Snug Harbor is a modern concrete pier 500 feet long with a least depth of 25 feet. Directions and maps to Snug Harbor can be found at http://www.soest.hawaii.edu/UMC/marinecenter.html.
II. SCHEDULING AND PLANNING

A. The Schedule for the R/V KA'IMIKAI-O-KANALOA is prepared by the Port Operations Manager and is posted on the UMC homepage [http://www.soest.hawaii.edu/UMC/index.html](http://www.soest.hawaii.edu/UMC/index.html). KA'IMIKAI-O-KANALOA was designed to be a mother ship for the Hawaii Undersea Research Laboratory's (HURL) submersibles PISCES IV & PISCES V, using NOAA funding. More recently, she has been outfitted to support general oceanography. Because of her unique status as a mother ship to manned submersibles, she is used primarily in that role during the optimal diving season in Hawaiian waters, August through November. During that period, we will attempt to give priority to HURL's diving missions; however, other projects may be sandwiched in during this period, as needed. In general, however, other users can be best accommodated outside of this August - November time frame.

B. Scientific Party. The composition of the scientific party is the responsibility of the Chief Scientist. On all the cruises, the Chief Scientist will provide the Port Operations Manager with personnel data, medical and other forms for all members of their party prior to sailing. Some of the specific duties of the Chief Scientist are to: 1) establish standard procedures for contacting the scheduled research project, 2) maintain close liaison with the ship's Master and (if applicable), the Director of Dive Operations concerning the progress of the scientific mission and future planning, 3) supervise the work and safety of the science party, 4) ensure that all members of the science party are aware of and comply with ship regulations, 5) ensure that all equipment is properly secured for sea prior to departure, 6) ensure that all equipment brought onboard is removed from the vessel on return to port and that rooms assigned to scientist as well as lab spaces are picked up, debris and trash free, and as clean as possible prior to the science party departing for good, and 7) assign members of the science party to staterooms and bunks.

III. SHIPBOARD PROCEDURES

A. Authority of the Master. The ship's Master is, by law and tradition, solely and ultimately responsible for the safety of the ship and all personnel involved. Because of these responsibilities, the Master is given full legal authority over all operations and personnel onboard ship. Our Masters are selected with great care and realize that their primary function is to assist the Chief Scientist by doing everything possible to help ensure a successful and comfortable cruise. In practice, the Chief Scientist tells the Master what he wants and, unless it is illegal or unsafe, the Master will do everything he can to carry out those wishes. From time to time, the Marine Superintendent may direct that certain economies be practiced with regard to the use of fuel, or other consumables or working overtime.
B. Authority of the Director of Diving Operations. The Director of Diving Operations is the final authority in determining whether or not a specific dive plan can be carried out safely. He will determine if the sub is ready in all respects to conduct a dive of any nature.

C. Authority of the Submersible Pilot. The Submersible Pilot has final authority over the operations of the submersible during a dive. He will ensure that the dive is safe at all times and will have full authority to abort a dive when appropriate.

D. Joint Authority. The Master of the vessel and the Director of Dive Operations must jointly agree that weather and sea conditions allow for safe diving operations. Either the Master or the Director of Dive Operations, on his own authority, may cancel a scheduled dive. Similarly, either may abort an ongoing dive due to worsening weather and/or sea conditions. When the submersible pilot is instructed by the tracking room to surface, he must comply with all due speed.

IV. GENERAL SAFETY

The seagoing profession is by nature a hazardous operation. This is especially true on research vessels where there is usually very little freeboard in the working area and the decks are frequently awash and slippery. Because of these conditions and the fact that most work is performed at or near to the side or stern of the ship, and heavy equipment and instruments are often lowered and recovered from the water, it is imperative that everyone scrupulously observe all safety instructions. Any situation that might involve danger should be corrected at once or reported to the Mate on Watch for further action. A minor accident at sea can prove serious or even fatal due to the fact that the ship may be days away from professional medical help. The Chief Scientist is responsible for the general operation and safety of the scientific laboratories and stowage areas; however, it must be remembered that ultimate legal responsibility for the safety of the entire ship lies with the Master. The Master must stop any procedure that he deems to be inherently unsafe. Periodic inspection of all scientific spaces and work areas should be made by a scientist and ship's officer to help find potential hazards. All hands are responsible for safety and, above all, they should exercise good common sense. Some specific rules and regulations are as follows:

When you go aboard, ensure that all your equipment and instrument are properly secured for sea. This includes your personal belongings in your stateroom;

- DO NOT wear open-toed shoes, sandals, or "go-aheads" while working on deck. Good work shoes with rubber soles and heels are recommended. Safety shoes (steel-toed) are strongly suggested when working heavy loads;
• DO NOT work out on the main deck alone at night or in heavy seas;
• DO NOT go topside when decks are secured because of heavy weather. If you must go out alone, be sure you inform the Mate on Watch when you leave and when you return;
• DO NOT climb any of the ship's masts or superstructure without the permission of the Mate on Watch;
• DO NOT sit or lean on life lines, railings, or other temporary barriers along the sides or stern of the ship;
• DO NOT smoke indoors. Fire is one of the most dangerous hazards encountered at sea and most fires are caused by personnel error and carelessness;
• SECURE all doors and hatches either open on their hooks or completely closed and dogged. DO NOT let them swing free;
• STAY out of the bight (loop) of all running rigging, especially wires, ropes, and blocks that are under stress; never straddle or step across a line laid out on deck unless you are absolutely certain that it is not a working line;
• When working with suspended weights, keep them under control at all times by using steadying line. DON'T let yourself get caught between a swinging weight and a stationary part of the ship;
• WEAR work vests when working on deck, or in areas where a fall might result in going overboard. Work vests and hard hats are available in the ship’s hangar. When working aloft, wear a safety belt;
• WEAR a safety helmet when working with overhead weights and whenever on the back deck during launch and recovery of submersibles or other heavy equipment.
• DO NOT put any equipment in the water until notified that it is safe to do so by the Mate on Watch.

ABOVE ALL, keep your eyes and ears open. Pick up, clean up, and securely stow all loose gear and after each use, report any unsafe conditions to the Chief Scientist and the Master.

DURING submersible operations, the following applies to the back deck:

The transport, launch, and recovery of the submersible while underway presents a unique set of circumstances which mandates that those directly involved with the operation or are in close proximity to the operation remain safety conscious at all times. PISCES IV/V weights 15 tons and that weight, coupled with the accelerations and forces added by ship's motion and sea conditions, put considerable strain on all of the various components of the sub-handling systems. Persons embarked on KA'IMIKAI-O-KANALOA should be ever aware of their surroundings and alert for dangerous conditions that could arise due to ship’s motion. This is particularly true during submersible launch and recovery operations. For that reason, the following rules will apply:
The Surface Director will coordinate the launch and recovery of the submersible and is responsible for safety of the back deck during launch and recovery operations.

All persons on the back deck at any time during launch and recovery operations or when the submersible is on deck and not securely fastened, must wear both a life vest and hard hat.

Normally, only those directly involved will be on the back deck during launch and recovery; however, the Surface Director may allow an (observers) only if he/she is properly instructed and wearing the required hard hat and life vest.

Persons in or on top of the hanger are cautioned that, at times, both the tow line and life line are under heavy strain. If a fitting gives way or if a line parts, it will recoil. For that reason, never stand in close proximity with any line under strain during any operations. All persons are reminded to stay out of the bight (loop) of any line of deck under any circumstance. Also, never cross over or straddle a line in use, walk around.

BECAUSE OF THE CONSTANT GASSING OF THE SUBMERSIBLE BATTERIES, THERE WILL BE ABSOLUTELY NO SMOKING INSIDE THE HANGER WHEN THE SUBMERSIBLE IS PRESENT. Most of this time the batteries will be under charge and the atmosphere in the vicinity of the submersible could be quite combustible.

V. RVOC SAFETY TRAINING MANUAL

The RVOC SAFETY TRAINING MANUAL contains information on safety practices and procedures on board research vessels. Chapter 1, The Science Party Supplement, highlights safety matters that pertain to all embarked in a Science Party and is required reading. Additionally, all in the party should be aware of the contents of this safety manual and refer to the appropriate section(s) for specific operations.

VI. DRILL AND EMERGENCY PROCEDURES

Fire and Abandon Ship drills are required by law and are held weekly. A Fire and Abandon Ship drill will be held shortly after departure and all hands are required to participate. Life jackets must be worn at all drills. Immediately after joining the ship, you should learn the location of your life jacket, survival suit, life raft, and other lifesaving equipment. You should also learn the location of fire extinguishers and fire-fighting equipment in all areas you will frequent. Your assignments for all drills and emergencies are listed on the assignment card located on your bunk.
A. Signals

**Fire and Emergency:** One continuous blasts on the ship's whistle and General Alarm for a period of at least 10 seconds. Word will also be passed by mouth and general announcing system.

**Abandon Ship:** Seven short blasts and one long blast on the ship's whistle and General Alarm. Word will also be passed by mouth and general announcing system.

**Man Overboard:** Pass the word "Man Overboard" to the bridge. Five short blasts on the ship's whistle.

**Dismissal from Drills:** Three short blasts on the ship's whistle and General Alarm. Word will also be passed by mouth and general announcing system.

B. Procedures.

**Fire and Emergency:** Upon hearing the Fire and Emergency signal, all scientists and passengers must don a complete set of clothing and life jacket and muster on the top of the hangar and await instructions. Survival suits will not be required for drills. The ship's company will fight the fire and may call upon the scientific party for assistance.

**Abandon Ship:** Upon hearing the Abandon Ship signal, all scientists and passengers don a complete set of clothing, including a hat if possible, and a life jacket and proceed to the assigned abandon-ship life raft. Bring any equipment listed on your bunk assignment card including your survival suit. Stand by and wait for instructions from Ship's Company.

**Man Overboard:** Upon hearing the words "Man Overboard", pass the word along throughout the ship by word of mouth. If you see the person overboard, keep your eye on him, point continuously at him to assist the Bridge Lookout, and throw a life ring over the side if one is near – or anything else that floats. Ensure that the Mate on Watch is aware of the person overboard. As soon as possible, the Chief Scientist should conduct a muster to determine who is missing. Stay clear of the bridge and recovery area unless assistance is requested. If you fall overboard, don't swim toward the vessel; tread water, and let the ship come to you. Remember - in a Man Overboard situation the number one priority is "**DO NOT TAKE YOUR EYES OFF THE PERSON IN THE WATER**".
VII. NORMAL SAILING HOURS

In port, the working day begins at 0700 and ends at 1530. An "operational day" begins at and ends at 0800. The R/V KA'IMIKAI-O-KANALOA will sail from pier 45 at 0800 of the first funded day and must return to pier 45 no later than 0800 after the last funded day.

VIII. MESSING FACILITIES

A. Mess Deck. The mess seats 24 people and is quite comfortable. All the scientists and ship's company mess together. Meal hours at sea are:

- Breakfast: 0700 to 0800
- Lunch: 1115 to 1215
- Dinner: 1700 to 1800

Meal hours in port are:

- Breakfast: 0630 to 0700
- Lunch: 1130 to 1200
- Dinner: 1700 to 1800 (when served)

We ask that you remain clear of the mess deck one half-hour before and one hour after meal hours to allow the galley crew to set up and clean the mess deck. Due to the close proximity of people eating in the mess deck, high standards of neatness and cleanliness are required. Footwear, shirts, and suitable shorts or trousers will be worn at all times. Dirty, ragged, or smelly clothing will not be tolerated in the mess deck or lounge area. Hats, caps, or swimming attire will not be worn in the mess deck during meal hours. Because everyone cannot be seated at the same time, we ask that you do not loiter in the mess deck after you have finished eating.

B. Night Rations. Night rations and snacks are available on the mess deck and in the gallery refrigerator. Ice cream and other frozen foods are available in the ship's freezer. Please feel free to help yourself at any time to any night rations that are available. All hands are expected to keep the mess deck clean and to place all dirty dishes and utensils in the galley sink.

C. Personnel Authorized to Eat in the Mess Deck. When the ship is in port in Honolulu, only the Ship's Company is allowed to eat on board. In all ports, the scientists authorized to live on board are also authorized to eat on board. Guests may be invited to eat on board provided the Cook is informed in advance and permission is obtained from the Master or, if he is unavailable, a ship's officer.
D. Personnel Authorized to Live On Board. Normally, the scientific party will not move on board ship until after the evening meal on the day before the ship is scheduled to get underway. Upon return to Honolulu, the scientific party should move off the ship prior to the noon meal on the day of return if the ship returns prior to 0800. Breakfast will be served. If the ship returns after 0800, the scientific party should be off prior to noon meal on the following day. In this latter case, the noon and evening meals will be provided on the day that the ship returns as well as breakfast on the following day. The Master or Marine Superintendent must approve all exceptions to this policy.

IX. PROHIBITED ITEMS

A. Alcoholic Beverages. The consumption of alcoholic beverages while the ship is underway is NOT permitted.

- Embarked personnel shall not be intoxicated at any time.
- Embarked personnel shall not consume any intoxicant while on watch or on duty.
- Embarked personnel may consume a legal prescription or non-prescription drug, provided the drug does not cause the individual to be intoxicated.

B. Illegal Drugs. The University of Hawaii is committed to maintaining a drug free work place in a safe and healthy work environment for all employees. This policy is strictly enforced on KA'IMIKAI-O-KANALOA. Consequently, all persons embarked are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession or use of drugs or controlled substances. The possession or use of illegal drugs is a violation of U. S. Law. Discovery of even trace amount of illegal drugs by U. S. officials can result in the vessel being impounded, and some or all persons on board being arrested. Because of the serious consequences of even minor drug violations, the following procedures shall be enforced:

The Master shall exert every effort to prevent illegal drugs or substances from being brought on board ship. Unannounced and thorough searches of the ship, including staterooms and personal effects will be made when deemed necessary and the results of these inspections entered in the ship's log.

Any illegal drugs or substances discovered by the Master, Chief Scientist or other ship's officers will be confiscated and placed in the Master's safe. Complete details concerning the amount and type of drugs, how, when and where they were discovered, together with the offender(s) name(s) will be entered in the ship's log. Upon arrival in port, the offender(s) and drugs will be turned over to the U. S. officials.
C. Search and Seizure. The Master of a vessel at sea is responsible for the safety of the vessel and persons embarked therein. For this reason, he has broad authority to inspect all areas of his vessel including personal belongings, for dangerous conditions or contraband. Persons embarked do not enjoy the same right to privacy as in their homes or temporary quarters ashore. All searches will be conducted by two persons (one scientist for science spaces) in a manner least offensive to the individual. Any contraband will be seized and disposed of accordingly.

D. Drug and Alcohol Testing. There are drug and alcohol test kits on board. In the event of an accident involving personal injury, oil spills, or significant material damage, federal law requires persons who may have contributed to the accident be tested for drugs and alcohol. There are no exceptions. The Master will decide who will be tested. Additionally, if accused of drug or alcohol use, an individual not in the crew may elect to be tested to show innocence. For example, a negative breathalyzer test would eliminate reasonable cause for search for alcohol.

E. Firearms and Sheath Knives. Firearms and large sheath knives are not permitted on board. Should these items be purchased ashore during a voyage, they must be given to the Master to hold until the ship returns to port and the owner debarks.

X. PERSONAL CONDUCT

A. Because of the confined space, isolation, and intimate living conditions, the social environment on board a research vessel is considerably different than that ashore. Privacy is greatly reduced, and interactions can become more intense. Instances that would be annoying in every-day living can take on exaggerated importance in a shipboard environment. In general, everyone should be very sensitive to this altered social condition and strive to be good shipmates. Be alert that your personal habits and mannerisms could be annoying to others who, by virtue of the circumstances, must maintain a close association both in a working and off-work environment. In matters that are non-essential to the job at hand, be willing to modify your behavior somewhat if necessary to diffuse a possible conflict.

B. Sexual awareness and tensions can be heightened at sea. Anyone on board ship may be subject to more intense attention, welcomed or not, than they might experience on shore. This attention can be magnified to the point of sexual harassment. In order to reduce the possible occurrence of an unwelcomed incident, everyone should consider the effect that certain actions and attitudes may have on others. Immodest dress, provocative gestures, and flirtatious behavior could create an atmosphere that would lead to a sexual harassment incident. Public displays of affection can easily lead to unsolicited and unwelcome sexual advance by another. Sexual harassment is defined as
manifestation of sexual discrimination that results in appropriate, coercive, or illegal communication that degrades the dignity of an individual. Examples are:

- Repeated sexually oriented communications, comments, gestures, or physical contact which demean the individual or create an intimidating, hostile, or offensive work environment.
- Showing of sexually explicit videos, photographs, etc., in common areas as the ship's loungers. (Showing of sexually explicit videos on the ship entertainment system is not allowed.)
- Offers or threats to influence or to alter, either directly or indirectly, an individual's career or other conditions of service in order to secure sexual favors.

C. Sexual harassment is unlawful. As an assault on an individual's rights and dignity, it is clearly inconsistent and unacceptable with the standards of the University of Hawaii. All persons are asked to use common sense and judgment in such matters; however, in the case of overt sexual harassment, it is the aggrieved person's rights and obligation to report the offense to the Chief Scientist or Master of the vessel. The failure of a supervisor to take immediate, appropriate action where it was known, or should have been known, that a case of inappropriate conduct existed, would place that supervisor in serious jeopardy should future legal action be warranted. All personnel must be aware of this position and be warned that we will take decisive action whenever an allegation is made.

XI. HOUSEKEEPING

There are no stewards assigned in R/V KA'IMIKAI-O-KANALOA; therefore, all hands are expected to keep their staterooms and work areas clean and sanitary. The ship's crew will take care of general cleaning in the mess deck, lounge, common heads, passageway, and ship's operating spaces. You can make their job easier by cleaning up any mess you may make in these areas. Scientists will be responsible for cleaning the laboratories and scientific work areas. If you require assistance, check with the Chief Mate. The supply of fresh water is adequate but limited. Do not waste water when cleaning, showering, or washing clothes.

XII. COMMUNICATIONS

R/V KA'IMIKAI-O-KANALOA is equipped with modern communications equipment. The most reliable method of communication while the ship is at sea is via the INMARSAT-C system; both voice and data services are available. The ship is also equipped with HF SSB and two VHF radios. All radio communication from the ship are regulated by law, and all messages transmitted via radio must be approved in advance by the ship's Master or Mate on watch. Brief personal messages or emergency communications can be sent between UMC and the
ship at anytime. Contact the UMC office if assistance is required. The telephone number of KA'IMIKAI-O-KANALOA in port is (808) 842-9818 / (808) 842-9845 and the cellular number is (808) 690-5393.

XIII. POST CRUISE REQUIREMENTS

A. Clean up. Every effort is made to make R/V KA'IMIKAI-O-KANALOA a clean and comfortable ship for each scientific group coming on board. If this goal is to be accomplished, each departing scientist must do his/her share to clean up the laboratories and staterooms. In the laboratories, all personal gear and debris should be removed and the area left in a clean and neat condition. In the staterooms, in addition to cleaning the room, sinks should be scoured and the rugs vacuumed. Blankets should be folded neatly at the foot of the bed and all soiled linen placed in the laundry bags provided. The heads and showers should also be scoured and cleaned. The location of any personal gear left on board must be reported to the Master.

B. Off-loading. When the ship returns to port, all cruise-specific gear should be taken off the ship. Off-loading requirements should be noted in the cruise plan. On multi-leg cruises, material left on board for future use should be specified in cruise plans and coordinated with the Master. Heavy loads that will require use of a commercial shore crane must be allowed for and the Master notified well in advance of arrival.

XIV. MISCELLANEOUS INFORMATION

A. General Restrictions. With very few restrictions, you are free to visit any part of the ship, we encourage you to look around and get acquainted with the crew. Do not enter voids, tanks, or other isolated spaces without checking with the Mate on Watch. If you would like to visit the engine room, make arrangements to do so with the Chief Engineer who will be glad to show you around. Normally you are free to visit the bridge at any time with the permission of the Mate on Watch. Visitors to the bridge are restricted by law when the vessel is getting underway, mooring, or operating in restricted waters. If you have any questions about R/V KA'IMIKAI-O-KANALOA, please feel free to ask any of the ship's officers. Our only purpose is to help you accomplish your mission in a safe and economical way. We are eager to do anything we can to make your stay a profitable and happy experience.

B. Medical Information. Medical treatment resources on board are very limited. No medical doctor is assigned, but the Mater and Ship's Officers have first aid training. The ship has a small medical locker that contains pain killers, various antibiotics, aspirin, cough medicine, cut and burn log and other common-use items recommended by the Medical Advisory Systems (MAS). Only persons in good general health should be assigned to the scientific party. Individuals that require medications to sustain good health take a great risk in going to sea. Loss
of medications overboard or due to flooding, or abandoning ship, etc., is always a possibility. Special medications are not normally stocked in the medical locker. Members of the scientific party who require special medications must ensure that they have adequate supplies on board before getting underway. The Master will provide a Release and Consent Form to all scientists scheduled to depart on a cruise. This form has a section for providing medical information that will help in case of an emergency. This information can be sent to Medical Advisory Systems headquarters to assist in providing medical advice if an emergency occurs. Except in extreme emergencies, prescription drugs will not be dispensed without the approval of MAS physicians.

All injuries must be reported. The Master will ensure that an Employee's Report of Injury Form is completed and forwarded to the University Marine Center as soon as practical. The Chief Scientist will assist in completing this form when members of the scientific party are involved. All injuries, sickness, no matter how slight, will be entered in the ship's log. All medical information is kept confidential.

C. Swimming and SCUBA Diving. Swimming from the ship at sea for recreational purposes will NOT be permitted. Recreational SCUBA diving is not permitted when the ship is at sea. If swimming or SCUBA diving is scheduled as part of the scientific operation, it will be noted in the Ship's Operational Plan. Diving must be approved well in advance by the University of Hawaii Diving Control Board. All diving or swimming operations must be approved by the Master.

D. Hazardous Materials. Programs requiring the use of hazardous materials, including all radioactive substances, will be coordinated with the Port Operations Manager well in advance of the cruise. Special permission is required by the University of Hawaii for the use of such materials aboard ship. Material requiring special handling or exposure will be severely limited, both in its use and locally aboard ship. Permits required for the acquisition, transportation, or use of hazardous material must be obtained by the Chief Scientist and copies made available to the Port Operations Manager.

E. Exercise Equipment. There is limited exercise equipment available on board.

F. Smoking. There is no smoking inside the vessel. Smokers must go outside to smoke. Any problems should be brought to the attention of the Master.