

R/V SAVANNAH Dive Operations Diving from a UNOLS Vessel

The SKIDAWAY INSTITUTE OF OCEANOGRAPHY (SkIO), State of Georgia University System, is an organizational member of the American Academy of Underwater Scientists (AAUS).

As a UNOLS vessel the diving standards practiced aboard the R/V Savannah shall meet or exceed those specified in the UNOLS Scientific Shipboard Diving Safety Addendum Report (April, 1996), the Research Vessel Operators' Committee (RVOC) Safety Training Manual (Section 16. Diving Operations), and the 2006 AAUS operations manual.

The purpose of the Research Vessel Dive Standards is to ensure that safe practice is maintained at all times during dive operations. To that purpose procedure and protocol are described.

All cruises involving dive operations shall have a designated lead institution campus dive administration that adhere to the standards listed above. In many cases divers will be AAUS member divers from the University System of Georgia. In the event of multiple participating institutions the Chief Scientist/Principal Investigator for the cruise is responsible for designating a lead institution or designation will be made by the SkIO Unit Dive Officer.

DIVE PLANNING:

Prior to the cruise an online R/V SAVANNAH Request form <http://www.skio.usg.edu:443/resources/rvsavannah/shiprequest.php> must be submitted by the Chief Scientist. Details and personnel involved in the dive operation are included in the Diving Operations section of the form. The SkIO Dive Officer receives a copy of the request form for approval. In addition, a current diver reciprocity form is required for each AAUS diver or reciprocity credentials for other organizations, such as the NOAA, or the EPA.

A Pre-Dive meeting attended by all divers, the principal investigator, participating crew, and the Captain will be held prior to commencement of dive operations to clarify working responsibilities and to explain the emergency procedures and safety plan of the vessels involved and of the dive operation. Following the dive meeting there will be a walk-through of the equipment to be used including the small boat, the diver staging area, and the emergency medical equipment.

All dive operations are to be supervised and administered by the on-board Dive Supervisor, either from the lead institution or designated by the SkIO, however ultimate

authority and responsibility for ship operations rests with the Master of the R/V SAVANNAH.

DIVER RECIPROCITY:

All visiting divers must meet AAUS reciprocity requirements as outlined in Section 1.27, Section 5.00 and Appendix 8 of the AAUS *Standards for Scientific Diving* manual. NOAA and EPA divers meet and exceed these standards, but must show proof of NOAA training, date of last dive, and medical information. All persons cruising on the R/V SAVANNAH are required to complete a medical form and a waiver form provided by the ship before leaving the dock.

The R/V SAVANNAH Dive Officer may issue a Temporary Diver Permit in cases where an individual may not meet all of the requirements of the AAUS manual, but has demonstrated diving proficiency, is essential to the dive operations and is able to dive safely in the judgment of the Dive Officer and the R/V SAVANNAH Master. This permit is valid for the current Dive Plan only.

Commercial Divers, if self-insured and carrying out dive operations outside the limitations of scientific divers may be exempt from this requirement, but must provide essential emergency information and a dive plan to conduct operations from the R/V SAVANNAH.

DIVING FROM THE RESEARCH VESSEL:

The R/V SAVANNAH will provide transport, accommodations, and support for cruise dive operations. The ship will be responsible for launch, recovery, and oversight of the dive tender vessel. During dive operations the ship will maintain communications and proximity to render assistance to the dive tender (see Small Boat Operations).

There are circumstances where divers may enter the water directly from the R/V SAVANNAH. At those times the Ship will be at anchor and the engines shut down. Divers will stage at the stern of the vessel and enter and exit the water via the ship's dive platform ladder. The dive tender will be deployed, manned by a crew member and down-current in close proximity to the ship, in order to render assistance to the divers during these operations. In addition, a floating buoy line will be trailed from the ship stern.

PROVIDED EQUIPMENT

Dive operations on cruise aboard the R/V SAVANNAH should be self contained. All personal dive gear, underwater tools, and dive tanks must be provided by the user. The ship is not equipped for surface-supplied diving. At present, the R/V is not equipped with a dive tank fill station. If more than 18 dive tanks are to be loaded for dive operations "Pelican" type upright storage tank racks must be provided by the user for safe storage.

The R/V provides support crew for the dive tender, the dive tender, a safe launch and recovery platform, radio communication, an emergency plan, medical and oxygen supplies if needed, trained personnel for administration of oxygen and first aid, and a dive flag.

SMALL BOAT OPERATIONS

The R/V Savannah carries as standard equipment a 13' AVON RHIB equipped with a 50 horsepower Honda outboard. This small boat is the dive tender and is manned by a crew member familiar with dive operations.

The RHIB is stowed on the R/V SAVANNAH in a cradle on the winch deck of the R/V. Launch is accomplished with the deck crane using a sling arrangement to place the vessel in the water. This is a common procedure for the ship, is considered separate from dive operations and is handled entirely by the ship's crew.

Loading and offloading of the tender may be done from either the starboard side of the SAVANNAH or from the stern, depending on sea conditions and ship operations. In either case a stainless steel ladder is mounted for access and flotation gear is worn by everyone working over the side.

Equipment carried on the small boat includes: a dive flag, waterproof VHF radio, horn, flares, flotation devices, first aid kit, a water-resistant watch, and bottled water. A dive flag must be displayed at all times divers are in the water. As dive support vessel, the R/V SAVANNAH must also display a dive flag.

Communication between the dive tender and the R/V SAVANNAH is essential. As standard practice the tender carries a water-resistant VHF radio using Channel 19. The R/V will remain in close proximity to the tender and cease any conflicting operations. A designated crew member or, preferably the Dive Supervisor will be posted as Observer and will maintain communications with the tender. The dive log will be kept by the Observer on board ship and the tender operator will radio dive times and depths to the Observer.

Divers in the water are to communicate with the dive tender operator with standard diver hand signals upon submerging and resurfacing. All divers should give the OK signal upon surfacing. The tender operator will advise the Dive Supervisor aboard the R/V SAVANNAH of diver status upon submerging and resurfacing and before return to the vessel.

Upon surfacing and before divers approach the dive tender, the dive tender operator will place the tender down-current from the divers, stop the engine and then signal the divers that it is safe to approach and board the vessel. The operator will assist the divers in boarding as needed.

EQUIPMENT STORAGE:

All NITROX and air tanks are to be stored upright in “Pelican” type steel racks located in the dry lab. Dive gear bags may be stowed in the air hood closet or in the wet lab. After use, dive gear may be washed down with fresh water and hung to dry on the main working deck

EMERGENCY PROCEDURES:

In the event of a dive-related injury the affected diver must be transported as quickly as possible to the R/V SANANNAH. All members of the ship’s crew, all AAUS divers and the Dive Supervisor are trained in first aid and in the administration of oxygen. A complete Medical Advisory Systems medical locker is maintained by the R/V SAVANNAH and the ship carries medical grade oxygen to supply an injured diver for over 3 hours at 12 l/min or 6 hours at 6 l/m.

The Master of the SAVANNAH is responsible for notification of medical response personnel. In the event of a medical emergency a United States Coast Guard medical evacuation helicopter will be deployed from the USCG Emergency search and Rescue operations.

The nearest **Hyperbaric** Chamber is the Candler Hyperbaric Unit (see Emergency Numbers) at **Candler Hospital at 5353 Reynolds Drive, Savannah, phone: 912-819-6000.**