UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Report of Meeting

on

RESEARCH VESSEL SAFETY STANDARDS

May 5-6, 1975
Woods Hole, Mass.

12 May 1975

ABSTRACT

The tragic loss of the Research Vessel GULF STREAM in January 1975 demonstrates the need that vessel operations everywhere must constantly seek to upgrade the practice of safety at sea. The GULF STREAM was a well-found and excellently equipped vessel. No violation of any law is known to have contributed to its loss. Whatever the case, research vessel operators must now look to their own practices in a self examination in order to insure the highest possible degree of safety standards.

As a visible effort, the Chairman of UNOLS directed that a small working group meet, discuss and develop a proposed set of safety standards which can serve as guidelines for individual laboratory usage. Many members of the research community offered their services and submitted well constructed comments. For their assistance UNOLS is most appreciative.

A meeting was held on May 5-6, 1975 at the Woods Hole Oceanographic Institution. A draft set of "Standards" was prepared along with recommendations for a community-wide program. This is a report of that meeting.

Finally, research institutions need not be reminded that oceanographic research sould be in the forefront of new and innovative research and development to enhance the practice of safety at sea.

SUMMARY OF
UNOLS WORKING GROUP MEETING
5-6 MAY 1975
ON
RESEARCH VESSEL SAFETY STANDARDS

1. The UNOLS Working Group Meeting met on May 5-6, 1975 at the Woods Hole Oceanographic Institution, was attended by ten representatives and had available to it the written responses and comments by sixteen institutions replying to the UNOLS letter of January 31, 1975, convening a safety standards effort.

2. Participants were:

R. P. Dinsmore, Executive Secretary, UNOLS, (Chairman & Secretary)
S. P. Berryman, RSMAS, University of Miami
P. S. Branson, Scripps Institution of Oceanography
C. A. Buehrens, University of Rhode Island
R. S. Edwards, Woods Hole Oceanographic Institution
Jonathan Leiby, Chairman RVOC
John Metcalf, Sea Education Association
Clifford Tetzloff, University of Michigan
Allyn Vine, Woods Hole Oceanographic Institution
J. B. Watkins, University of Washington
R. B. Elder, OFS- National Science Foundation

Written inputs to the meeting are attached as Appendix 4.

3. The group examined the scope and applicability of existing laws to oceanographic research vessels operated by academic institutions. There are approximately 90 such vessels which do or are capable of making overnight or cruises of more than one day or in open seas. Of these about eleven are subject to the inspection and manning regulations of Subchapter U of the Code of Federal Regulations. About 2 are "public vessels" and the remainder are motorboats or motor vessels subject to Subchapter C of CFR (Uninspected Vessels).

4. It was the general opinion of the group that standards ought to be set for the guidance of academic research vessels and voluntary use. In the case of inspected vessels rules are quite specific and effectively enforced by the Coast Guard, and no duplicative, conflicting

or overlapping standards should be made. In the case of uninspected vessels certain standards are needed which may not be adequately covered by existing rules in order to voluntarily establish the highest degree of safety within the research community. It was cautioned however that standards ought not become barriers which intentionally or inadvertently hinder the practice of good and innovative research at sea.

5. It was agreed that many standards already exist and that in most cases it is unnecessary to reinvent them but rather to compile appropriate references in a coherent fashion. Chief among these is Subchapter U of the CFR although which is intended for vessels over 300 gross tons does contain many areas that can serve as guidelines for use on smaller vessels or public vessels which are uninspected. Subchapter U was selected rather than Subchapter T inasmuch as the latter is intended for commercial passenger carrying vessels involving large numbers of passengers, but that Subchapter U was prepared with the nature of research vessel operations specifically in mind. Other standards are contained in ABS rules, American Yacht and Boat-Council Standards, Underwriters Guidelines, etc.

6. The meeting proceeded to examine each of the agenda areas along with appropriate existing rules and recommended standards and set down important areas which ought to be addressed in research vessel safety in the manner agreed above. The results of this are contained in the draft "Standards for Research Vessel Safety" which is attached as Part II.

7. The Meeting then examined what UNOLS can should do to assist research vessel operators to achieve the highest degree of safety standards. These included.

    . Continuing review and improvement of promulgated standards including the receipt of and action on proposals by UNOLS Members. This can be done through the medium of the existing RVOC which is an expert professional body on the nature of research vessels and their operations.

- Make available reference material and their interpretations on a routine basis to research vessel operators.

- Provide consultative services on request by research vessel operators.

- Utilize the medium of the NSF/NAVY SOCC material condition review program to examine and discuss safety matters through the on site reviews of the program by RVOC consultants.

8. In recognition that research vessels and oceanographic research in general should be in the forefront of contributing to maritime safety, it was agreed that research vessels should often lead the way in new and innovative research, procedures and equipment which would enhance the practice of safety at sea.

9. With the development of the draft Standards (Part II) and the recommendations set forth in the foregoing, the Working Group considered its work completed. The report of the Working Group shall be transmitted to the Chairman of UNOLS for action by UNOLS. The Working Group thereupon adjourned.

12 May 1975

AGENDA

Working Group on R/V Safety Standards

5 - 6 May 1975

1. The Working Group is requested to prepare a set of recommendations for submission to UNOLS and which would be appropriate for voluntary compliance by UNOLS Members and Associate Members.

2. The Working Group should examine the following suggested items plus other matters which it sees fit to consider:

A. CERTIFICATIONS

(1) ABS Classification

(2) Load Line Certification (vessels over 150 tons or 79-ft. LOA)

(3) USCG "Courtesy" Inspections for uninspected ships

(4) Documentation

(5) Other.

B. FIREFIGHTING

(1) Should uninspected R/V's comply with the provisions of Subchapter T or any portion (i.e. fixed CO_2 systems, numbers of portable extinguishers)?

(2) Other

C. LIFESAVING

(1) Lifejackets - marked with R/V Name - stowage.

(2) Liferings

(3) Waterlights and other signals.

(4) Liferafts.

(5) Epirbs.

(6) Should uninspected R/V's comply with Subchapter T in regard to lifesaving devices.

(7) Other

D. STABILITY

(1) Inclining Experiment

(2) Stability Calculations

(3) Written and Posted loading rules.

(4) Other

E. WATERTIGHT INTEGRITY

(1)

F. COMMUNICATIONS

(1) Required radios? Types? Freqs?

(2) Written & Posted communication policy.

(3) Base Radio Station

(4) Other

G. MANNING

(1) Officers Competency Act applicable to uninspected R/V's 200-300 tons

(2) Licensed Masters:

. 65-ft - 200 tons: Ocean Operator

. under 65-ft: Motorboat Operator

. other:

(3) Should uninspected R/V's have a "certified" number of scientific personnel for day and overnight trips?

(4) Other

H. OPERATIONS

(1) Written operations manual or instructions governing use and operation of inst. vessels.

(2) Posted Bills giving emergency duties of crew & Scientists.

(3) Drills & Exercises

(4) Other

I. OTHER

3. Format of recommendations: scope, applicability, enforcement, etc.

4. Group action and other services by UNOLS/RVOC.

5. Further Action:

UNIVERSITY - NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

An association of Institutions
for the coordination and support
of university oceanographic facilities

UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

January 31, 1975

TO: UNOLS Members and Associate Members

SUBJ: Safety Standards

1. The recent loss of the R/V GULF STREAM should make us all pause and consider certain matters so that we can be assured that as far as possible we conform to the highest possible degree of safety standards.

2. John Knauss, UNOLS Chairman, has directed that an ad hoc group set up to study and propose a set of standards which can serve as guidelines for individual laboratory usage. Obviously nothing can take the place of individual institutional practices, but as several members already have remarked, if we do not do something ourselves, then some Federal Agency will surely do it for us. We propose that a small group be formed to prepare a report with appropriate recommendations for consideration at the annual meeting in May. Your thoughts on this are solicitated including participants, specific ideas and other general areas of consideration.

3. For your information the attached discussion paper shows some points which emerged from the GULF STREAM search and subsequent Coast Guard hearings all of which I observed closely. Nothing in this should be construed as reflecting adversely on the operation of the GULF STREAM. On the contrary, the GULF STREAM was an excellent vessel, well operated whose performance was almost beyond question. So there is all the more reason why we should give particular attention to this case.

4. Please consider this carefully and advise me. It is most urgent.

R. P. Dinsmore
Executive Secretary, UNOLS

APPENDIX 3

UNOLS Office
1/31/75

A DISCUSSION OF SEVERAL MATTERS WHICH EMERGED DURING THE SEARCH FOR THE R/V GULF STREAM AND THE SUBSEQUENT COAST GUARD HEARING

NOTE: *The following items are informal and preliminary. In some instances because of brevity they can be taken out of context and controverted. Nothing here should be construed to reflect adversely on the R/V GULF STREAM as a vessel or on its operation. On the contrary, the GULF STREAM was found to be extremely able and exceptionally well equipped and operated. Nevertheless, as in any investigation, there emerges facts (or lack of facts) which suddenly become important.*

Situation

The R/V GULF STREAM of Nova University, Fort Lauderdale, Florida departed on January 4, 1975 from the Bigelow Laboratory, Boothbay Harbor, Maine, where it had been on a "visiting scientist" project for the development and testing of various kinds of drift buoys. The plan was to recover eight buoys which had been located the previous day by an aircraft using radio homing. The buoys were spread over an area from about thirty to ninety miles south of Boothbay Harbor and from thirty to fifty miles offshore. The plan was to recover the southernmost buoys on the first day putting into Gloucester overnight and calling in information on subsequent operations. When nothing was heard from the GULF STREAM by the 7th, the laboratory reported the boat overdue to the Coast Guard which instituted a search.

The search found two liferings, a wooden drawer, a lifejacket and one body within a 30 mile stretch about 20 miles offshore from Kennebunkport, Maine to Cape Ann, Mass, between the 8th and the 10th. The two southernmost buoys were recovered by the Coast Guard with no definite reason to think they had been earlier visited or retrieved. Only other evidence were two lobster vessels who reported seeing the GULF STREAM near Boothbay on the 6th and radio transmission heard on the night of the 4th afternoon of the 6th and morning of the 7th. The weather from the 4th to the 6th was good, but by the afternoon of the 7th a severe NE gale swept through the area.

Coast Guard hearings were conducted on the 16th at Boothbay Harbor and Portland, Maine on the 20th.

The R/V GULF STREAM was a 54-ft twin engine steel hull modified crew boat design built in 1963 and acquired by Nova University in 1966. It had four radios and extensive navigational equipment. At a normal cruising speed of 15 knots it had fuel for about twenty fours hours or about 400 miles. It carried two experienced crew members and three experienced scientific staff under the direction of Dr. William S. Richardson, Director of the Nova University Oceanographic Laboratory.

Discussion Points

1. Other than a word of mouth broad description, there was no succinct written cruise plan or track filed before sailing. While most principals agreed that the vessel was to proceed south and then into Gloucester for the night, contradictory evidence was presented which indicated other possible plan(s). At the outset of the Coast Guard search and throughout there was some confusion on the intended track of the vessel.

2. On this occasion as well as previous operations there was no regular system of reporting in or of routine communication checks. The Bigelow Laboratory did not have a base radio station. Radio communications, when conducted, were via the marine operator or a neighboring Coast Guard Station.

3. The vessel sailed on the 4th with about one day's fuel. Although Base personnel were seriously concerned on the 6th, an "overdue" vessel report was not made to the Coast Guard until the 7th. Any standing overdue procedures, if they existed, were not brought out at the hearing.

4. There was no evidence that any emergency signalling devices were on board.

5. Sufficient approved lifejackets were on board. However, they were unmarked except that one recovered had the previous name of the vessel (prior to 1966) and was almost overlooked. This was the same as the one on the body recovered and was an older cork type no longer recommended because it does not keep the head out of water.

6. The vessel carried two inflatable type life rafts. There is no evidence that these rafts had ever been inspected or serviced since they were acquired with the vessel in 1966. It could not be ascertained whether they were self releasing or inflating or had canopies. The type, description and color were not available during the search or at the hearing.

7. The captain and mate were known to be experienced seamen; each had previously been licensed. However, the captain's ocean operators license had recently expired and the mate's motorboat operators license had long expired. The Coast Guard report will show that no one on board had a valid license.

8. Radio calls from the vessel were heard by several Coast Guard and other stations through 7 January. If any distress or emergency existed, these calls were not in the form prescribed for emergency calling.

9. Emergency Position Indicating Radio Beacons are required by law to be carried on certain classes of vessels in coastal and ocean service effective March 1, 1975. The buoys that the GULF STREAM was retrieving had radio beacons of which several were located by the Coast Guard the first day of the search. There is no evidence that the vessel itself carried an emergency beacon.

10. The GULF STREAM was a documented vessel registered with the Coast Guard as an oceanographic research vessel of 43.21 tons. It had only recently been documented (June 29, 1974) on the insistance of the Bureau of Customs which considered its previous motorboat number certificate as a "pleasure vessel" unsuitable. Its incumbency under SOLAS or Federal Regulations as a registered, uninspected research vessel has not yet been determined.

11. The vessel carried no hull insurance, having been dropped the previous year as an economy move. The last survey was in 1966. The vessel's condition had not been reviewed under the UNOLS/SOCC Program although a review was scheduled in Mid-March 1975.

12. The official description of the vessel filed with UNOLS in 1972 listed radar. At some time prior to the Maine operation the radar was removed. The reason for this is not known.

The foregoing have been presented not as violations of any law or regulation - indeed there were none - but rather as points of self examination for research vessel operations in order to insure the highest degree of safe practice.

APPENDIX 4

THE ATTACHED MATERIAL IS A COLLATION OF PERTINENT REPLIES TO THE UNOLS MEMO OF 31 JAN. 1975, CONCERNING SAFETY STANDARDS. BECAUSE THE PERMISSION OF THE CORRESPONDENTS HAS NOT BEEN GIVEN TO DISSEMINATE THEIR REPLIES, THE MATERIAL SHOULD BE TREATED AS PRIVILEGED.

UNIVERSITY OF MIAMI
Dorothy H. and Lewis Rosenstiel
SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE
10 RICKENBACKER CAUSEWAY
MIAMI, FLORIDA 33149
(305) 350-7211
Cable: UOFMIAMI

24 March 1975

Capt. R. P. Dinsmore
UNOLS Office
Woods Hole Oceanographic
Institute
Woods Hole, Mass. 02543

Dear Bob:

In response to your letter of 31 January regarding GULFSTREAM, enclosed please find responses to your "Discussion Points". The responses are based on operating policy for small boats at the RSMAS.

1. The Coast Guard suggests a Float Plan for small craft. For boats with a one day cruising range, an operating area identifiable by a range and bearing from a geographic position should be on the written Cruise Plan, and identified as a Noon Position. A 1500 hours local time radio check should reconfirm the area of operations. A missed radio check should be an Alert and six hours after missed radio check boat should be considered Overdue.

2. Operating range of boat should be limited to the ability to communicate by radio. Routine checks should be a requirement for small (day) boats.

3. Overdue should be the best estimate of the situation. Bad weather, poor communications could shorten the time, and vice versa (see 1 above).

4. Emergency signalling equipment; distress signals and flashlight are required essential by Coast Guard although not required by law.

5. Approved life jackets are required by law, and should be worn during rough weather. Ship's name is not required for motor boats, but some identification seems prudent (perhaps name of institution, so that jackets would be interchangeable, boat to boat).

6. Encapsulated, approved and inspected (limited service) liferaft is not required, but is good precaution for offshore operations. Record of raft inspection would have answered all questions in case of GULFSTREAM.

7. Licensed Master and Mates are not required for Class 3 motor boats not carrying passengers. Lack of licensed personnel could indicate a lack of standards for boat crews, and failure to renew license could be interpreted as physical disability or incompetence.

8. Radio procedures are prescribed by FCC. If radio telephone licenses were aboard, procedures should have been followed.

9. Emergency position indicating radio beacons are not required on less than 300 gross tons. However, as in (6) above it is good precaution for offshore operations at modest cost ($300.00).

10. Reasons for Customs requiring documentation should be investigated. In most cases, there are no advantages and several disadvantages in documenting a research vessel.

11. It would seem that if hull insurance were carried, U.S. Salvage or other independent marine surveyor would have inspected the boat. Hull surveys by outside consultants (ABS, USCG, U.S. Salvage, etc.) are not normal for small boats. It is assumed that the Master was competent to assess hull and machinery condition, and to request additional professional advice as necessary. Cancellation of insurance is very poor economy.

12. No requirement for radar. Reliability of small boat in radar is marginal.

If we can be of further help, please let us know.

Sincerely yours,

James Gibbons
RSMAS Operations Manager

JG:oer
cc: Chm/MOC
Dr. Wooster
SPB

March 31, 1975

TO: To Whom It May Concern

FROM: Frank A. Davis, Master RESEARCH VESSEL BELLOWS

SUBJ: Research Vessel Safety Standards

The following is primarly aimed at the small, under 100 foot class vessel

The work preformed by small research vessels falls in line with some of the work preformed by the larger NOAA type ships and therefore:

1. All safety equipment used on inspected ocean going ships should be used aboard smaller vessels.

2. Safety rules & regulations governing inspected vessels should be followed by the smaller vessels.

The above suggestions should be followed within logical reasoning and in close accordance with the U.S. Coast Guard rules and regulations.

The following should be the guide lines for safety at sea: Adaquate navigation lights, life rafts, life jackets, life floats, electronic aids including navigation, radios, radar, proper fire equipment, water lights and most important a good model boat well found. All vessels used in oceanographic research work should come under A.B.S. rules whenever practical. The crew should be well acquainted with the sea and weather conditions within the area of their work and the capibilities of their vessel.

Navigation lights should be of ship intensity and physical size to help prevent being run down at night. Range lights should be installed on all vessels preforming work in areas of shipping lanes if at all practical. All vessels working off shore should carry two (2) life floats with quick release and an automatic release mechanism, in addition proper size or capacity, two each, inflatable, U.S. Coast Guard approved rubber boats equipped with a quick release and an automatic release mechanism.

Life jackets should be inspected and have the boats name printed in contrasting color. Life jackets should be placed in accordance with the U.S. Coast Guard rules aboard inspected vessels.

I have found in my years of professional boating, life jackets are usually stored in the most inaccessible place.

In addition to the proper number of life jackets sufficient life jackets should be properly stored near the work area to be used during bad weather or, for a man overboard they will be readily available. Within the same area of the weather deck, work area, a life ring with an approved water light should be placed so it is possible to get it overboard at a moments notice. This life ring should be in addition to the life ring and light that is required near the bridge on inspected vessels.

The first aid medicine chest should be properly equipped including a good first aid text book, equal to the American National Red Cross publication..

A profile photograph should be available at anytime to anyone.

Emergency Position Indicating Radio Beacon should be a must aboard every ocean going vessel regardless of length or tonnage to aid search and rescue personnel in an emergency.

Other safety equipment for the small vessel should be a power source independent of regular internal power. This emergency power supply should be in a dry place well above bilges and out of weather. Direct connection should be provided to one or more radios. Radio contact should be made each day with office personnel, providing weather conditions permit radio transmissions. Radios should have ample power to insure radio contact staying within the rules and regulations of the F.C.C.

An intercommunication system through out the vessel is an important safety system. The bridge should be informed of any changes in the ships routine. The vessel should not be moved until the chief scientist informs the bridge he has finished his work. It is important to the master to be kept informed as to any problems below deck or engine room or fantail so he will be able to keep his thoughts clear and enable him to make good, clear, and concise decision at a moments notice.

All safety equipment including electronics and hull with its' components should be the responsibility of the master and he must report his findings to top authority before each trip.

A written cruise plan should be on file each trip and any change of plan should be reported to the vessels home port or at off hours to the U.S. Coast Guard providing they are willing to accept the message and pass it on when possible. The cruise plan should not be altered until some responsible people on shore have been notified and understand the change.

I feel some of our smaller vessels are preforming duties beyond their safe capabilities. Through out the world, boats are built and designed to suit their particular needs and the type of work they preform, also the weather and sea conditions are taken into design. Certainly a power driven Chesapeake Bay oyster boat would not be suitable for use as a Maine lobster boat, this is also true in reverse.

Weather and sea conditions along the New England coast require a life time of study before you acquire a fair knowledge of this area. "Although we have not had bad weather along the coast I am sure just over the horizon is not the place to be." Quote. This is a quotation that is well said and very true of the New England coast.

Dr. Richardson, Bill Campbell and Jim Riddle were very close friends of mine and I have been deeply hurt by their loss. I was master of the Research Vessel Gulf Stream for two years for Nova University and knew the vessel quite well.

I hope the tragic death of Dr. Richardson will open the minds of people who feel what we have is good enough and continually say "It costs too much and we don't have any money."

Respectfully submitted,

Frank A. Davis

Frank A. Davis

DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
ARLINGTON, VIRGINIA 22217

IN REPLY REFER TO
480T:JEB:ct

[illegible] 1975

Captain R. P. Dinsmore, USCG (Ret.)
UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

Dear Bob:

Your 31 January circular on safety standards review appears to be timely and effective.

Based upon my own experience over the past six years, at the center of government concern, the biggest flaps regarding R/V operations are the direct consequence of there appearing to be no one in charge. It has been like pulling eyeteeth to nail down where the R/V is supposed to be, worse trying to determine where she is and precisely what she is doing, and next to impossible to establish direct radio communication with the ship from an appropriate situation/operations center. In this respect the UNOLS R/V's are unique because all other U.S. ships are closely tethered to a shore-based controller who has, or can quickly find, answers to all these problems.

If a criticism were to be made of R/V operations, therefore, I suggest that such lack of central control point would be high on the list. It is therefore my view that the UNOLS ad hoc group should consider the feasibility of initiating at least once daily position/situation reports from each R/V at sea on a required basis, plus a 24 hour radio watch ashore for receipt of urgent communications from R/V's at any time. Where possible, existing communications networks such as AMVERS; where not possible, UNOLS may wish to task an existing station at SIO or WHOI or other to cover geographic areas and to fully exchange data by land line. If desired, I could explore possibilities of establishing contact via Naval area commands (but not sure of legality of this).

I seriously doubt that establishment of such a communications network would materially improve implementation of contingency action when needed, but it would minimize the extensive lost motion of extracting peripheral information from an amorphous mass, and it would preclude any criticism for not having a reporting routine or regular radio checks.

Perhaps it is time for the academic community to stop resisting all regulatory interference in a negative way and to start more positive and demonstrable self-regulation procedures. This is a suggestion only, and may be an over reaction on my part. The Navy position continues to be that the operator has ultimate responsibility and authority for safety of the ships and embarked personnel and for compliance with pertinent rules and regulations of established authorities.

Congratulations to UNOLS for taking the initiative on this matter.

Joe

J. E. BENNETT
Special Project Officer
Ocean Science & Technology Division

THE FLORIDA STATE UNIVERSITY MARINE LABORATORY

507 PS/A Building
Florida State University

Tallahassee, Fla 32306
904-599-3144

Feburary 6, 1975

R. P. Dinsmore,
Executive Secretary
UNOLS Office
Woods Hole Oceanographic
Institution
Woods Hole, Mass. 02543

Dear Captain Dinsmore:

Reference your letter of January 31, 1975, regarding safety standards applicable to research vessels.

The loss of the R/V GULF STREAM and its personnel is certainly regretable to the extreme and was a serious impact to individuals at this institution who knew them. However, everyone agrees that we will be extremely remiss if we do not profit from this experience.

The points I would like to advance are without question as obvious to others as to us but we believe they require reemphasis at this point.

1. There will be a written and approved cruise plan for each cruise. Any deviation from this plan must be reported by the chief scientist via radio to the approving agency.

2. Location of the vessel will be reported via radio at least once during each twelve hour period while vessel is at sea.

3. Dock side briefing will be given all personnel by the Captain prior to departure covering safety regulations, location of life jackets and life rafts, man overboard procedures, watch assignments, abandon ship drill, communicative

facilities aboard, fire drill procedures and location of fire extinguishers and any other matters peculiar to the particular vessel.

4. All life jackets, life rafts and small boat motors will be tested for operational efficiency prior to each cruise.

Sincerely yours,

George W. Flager
Acting Director

GWF/jkj

Institute of Marine Science

UNIVERSITY OF ALASKA
FAIRBANKS, ALASKA 99701

February 6, 1975

Mr. R. P. Dinsmore
Executive Secretary, UNOLS
UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

Dear Bob,

Regarding the safety standards ad hoc group, I believe that (1) It is imperative, and (2) USCG participation should be invited. As you say, if we don't do it we will find it done "for" us.

Specific areas of consideration should include:

(1) Drills. Types, timing, frequency, and logging.
(2) Communications. Types and timing.
(3) Inspections, within UNOLS family by UNOLS family.
(4) Equipment minimums, including lists of recommended types and a list of not-recommended types.
(5) Licensing requirements, standardized within UNOLS
(6) UNOLS position on the Emergency Position Indicating Radio Beacon. Should be a standard and affirmative.
(7) UNOLS recommended standard colors for emergency equipment, specifically life rafts, rings, and vests.
(8) UNOLS recommended standard markings for equipment.
(9) UNOLS standard recommended signal and communication plan between rescue aircraft and vessel/survivors.

We here would be happy to help in any way needed.

Sincerely,

John C. Garland

John C. Garland
Facilities Manager

Marine Science Programs THE UNIVERSITY OF ALABAMA
TUSCALOOSA / BIRMINGHAM

February 6, 1975

R.P. Dinsmore
Executive Secretary, UNOLS
UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Mass. 02543

Dear Bob:

Your memo of January 31 was not altogether unexpected. I have reviewed the R/V Gulf Stream tragedy with Captain Frank Davis, a former master of the Gulf Stream and I would strongly urge that UNOLS solicit a statement from Captain Davis. When I had the opportunity to talk with him, he indicated that he had been asked to inspect what wreckage was available.

Captain Davis is an experienced, highly respected R/V skipper who has worked the smaller vessels and programs. I would strongly recommend that he be included in any study group which UNOLS might sponsor.

I would also like to recommend Bob Haines (SIO) be included because of his breadth of experience with ship operations, from the bridge to the scheduling office.

With regard to your "discussion points", the obvious recommendations contained therein should certainly become part of a safety code.

I think all of us have been aware of the needs but many have had to adjust to available funds in dealing with them. Perhaps this is an area in which UNOLS could be of some help.

Certainly I think UNOLS should consider expending some time and effort toward strengthening the chain of shore facilities which currently exist along many areas of the continental margin

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DAUPHIN ISLAND, ALABAMA 36528
TELEPHONE (205) 861-3702

One approach might be analogous to the "flight control" concept. To this end, an R/V would notify marine science stations in its operational area of its presence and plans. This would require some form of standardized communications, emergency response procedures, etc.

Please take this initial response, though limited, as an indication of my concern and willingness to respond to any material you may be able to generate.

Sincerely,

George F. Crozier, Ph.D.
Director - MSP

GFC:eb

HARBOR BRANCH FOUNDATION, INC.
RFD 1 BOX 194
FORT PIERCE, FLORIDA 33450
TELEPHONE: 305/465-2400

February 7, 1975

Capt. R. P. Dinsmore
Executive Secretary
University-National Oceanographic
Laboratory System
Woods Hole, Mass. 02543

Dear Capt. Dinsmore:

We at the Harbor Branch Foundation have your letter of January 31 and are very interested in cooperating with you, especially in drawing up certain guidelines and operational procedures for various types of vessels, as well as equipment and ABS certification on certain vessels.

We operate three oceangoing vessels, ranging from 100' to 124'. One vessel is just about complete with ABS certification. The second one is in the process of ABS certification and the third will shortly be in the process for certification.

In addition to the above, we operate a number of small craft, ranging from 20' to 35', and two submarines. Both submarines are operated always in conjunction with one of the larger vessels as the Mother ship.

We certainly are interested in any input for safety and would be glad to cooperate with you in establishing such safety procedures. We have many ideas of our own which we impose upon ourselves.

It is our feeling that sensible restrictions should be made but also if restrictions are too severe, oceanographic laboratories like ourselves could be imposed an unnecessary expensive burden and might, in instances, even have to give up seagoing operations. Therefore, it is very critical and important that sensible operations and restrictions for various types of vessels be set-up.

We shall be glad to participate at any time.

Sincerely,

E. A. Link
Consultant

EAL:csz

MEMORANDUM

TO: Dean Byrne

FROM: E. B. Rittenhouse

SUBJECT: Answer to memo from R. P. Dinsmore/UNOLS dated 31 January 1975

DATE: 5 February 1975

The following recommendations to the UNOLS/SOCC Panel regarding safety standards are the result of a meeting held at the Marine Science Center on 4 February 1975, with Capt. R. Redmond, Capt. T. A. Loskota and B. M. Pierce the Port Engineer and myself:

1. UNOLS or Navy/NSF Panel on SOCC should place greater emphasis on regular material condition reviews to those vessels which are not Coast Guard inspected, particularly when the institution concerned does not have a marine staff ashore.

2. Reduce the size of the inspection team to two persons, deck and engineer, and conduct the above reviews annually.

3. Suggest use of marine surveyors, or retired marine superintendents/ port engineers or other qualified personnel who will work on a part-time basis as inspectors (reviewers) or as consultants to institutions without marine staffs ashore.

4. Recommend that the scope of SOCC material review be expanded in the case of small operators, to include an evaluation of personnel, standard operating procedures and other related matters.

EBR:mjg
cc: Capt. R. Redmond
Capt. T. A. Loskota
Mr. B. M. Pierce

RIT

SAFETY REGULATIONS

For Vessels Operated by the Skidaway Institute of Oceanography

RADIO CHECKS:

1. Prior to departure from SIO docks a radio check will be made with the SIO Base Station on VHF frequency 158.835. Give working areas and/or cruise track together with estimated times for major area changes to base operator. A noon check will also be made with the base operator giving location at that time. Any changes in cruise plans affecting the location of the vessel will be transmitted to base prior to making change. Information received will be logged in the radio log book by the base operator. The log will be reviewed by security personnel as they come on duty and will be maintained by them during their tour of duty.

2. An anchor watch will be maintained any time the vessel is anchored (2 or 4 hour tours) with scientific staff participating at the Captains request. From 1800 to 0600 radio checks will be made with SIO Base Station every 4 hours commencing at 1800 during the period from 10 minutes before the hour to 5 minutes after the hour. Lack of communication with the vessel for an 8 hours period will be considered an emergency by base personnel and the U.S. Coast Guard will be notified.

3. In the event of an emergency aboard the vessel, the U.S. Coast Guard will be notified on channel 16 using standard Coast Guard procedures. If circumstances allow, SIO Base should also be notified.

4. When the vessel is beyond range of VHF radio (approximately 40 miles), communications will be established on Single Side Band (SSB)

Radio on SIO Channel 1. SSB is not routinely monitored by SIO base; therefore arrangements will be made prior to departure (or by VHF radio in case of cruise track changes) to have the base SSB monitored at specified times.

FIRE ABOARD:

The Captain will assure that all personnel aboard the vessel are familiar with the location and operation of fire extinguishers. When personnel unfamiliar with the vessel are aboard, a fire drill will be held within one hour of leaving the dock. Egress from the stateroom area (such as the fore castle hatch) will under no circumstances be blocked.

MAN OVERBOARD:

Man overboard drills will be held periodically at the Captains discretion, both during the night and in daylight hours. Overboard personnel should be simulated using a free floating buoy to obtain realistic wind and current drift.

SAFETY EQUIPMENT:

The Captain will assure that all safety equipment, including navigational and communications equipment, are aboard, properly stowed, functional, and periodically inspected. The Captain will enforce any regulation stated herein as well as others he deems necessary for the safety and well being of crew, passengers, and vessel.

GENERAL:

The following information will be posted in a conspicuous place aboard the vessel and a copy will be furnished to all new personnel (crew, scientists, technicians, etc.):

1. Life jackets are stowed in forward stateroom locker.
2. Work jackets will be worn by all personnel when on deck.
3. Familiarize yourself with location and use of fire extinguishers.
4. Foredeck is off limits to hard or black sole shoes, biological specimens and any heavy gear unless loaded and stowed by the crew.
5. Stay clear of the radar, Lorans, fathometers, radiotelephones, binoculars, charts and plotting instruments. Use of navigational equipment is restricted to the navigator, but will gladly be demonstrated at a proper time.
6. Do not congregate on bridge during heavy weather or at night.
7. Do not use deck machinery until you have been briefed by the Captain or Mate.
8. Observe posted "Rules of the Head" and extend fresh water conservation measures to galley and deck areas.
9. Each person is required to:
    a. leave stateroom clean and orderly at end of cruise.
    b. clean up galley after between-meal snacks.
    c. help maintain an orderly work deck and lab area during cruise.
    d. help swab down work deck/cockpit area after work is completed, preferably while boat is returning to port.

There are of course many more "rules to go by" to make a cruise more beneficial and enjoyable to all, but all are a matter of common sense and good judgement. These need not be listed, but if there are any questions please ask.

UNIVERSITY OF MAINE *at Orono*

Ira C. Darling Center for Research, Teaching and Service
(The Marine Laboratory)

Walpole, Maine 04573
207/563-3146

12 February 1975

Capt. R. P. Dinsmore
Executive Secretary, UNOLS
UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

Dear Capt. Dinsmore:

Your recent letter concerning the loss of the R/V GULF STREAM has been received. While the specific cause for its having been written is most unfortunate, the ideas expressed therein regarding self-regulation are long overdue. There can be no doubt that research vessels, so often excluded from the jurisdiction of existing regulatory agencies, should be equipped in a safe and professional manner. I would submit, however, that safety standards proposed by any agency should clearly reflect the type of vessel being utilized, the waters for which she is intended, and the mission or missions she is expected to perform. Perhaps the vessels of the Ira C. Darling Center are a case in point -- we are exclusively involved with river and estuarine work in several of the estuaries along the Maine coast. We do not venture offshore with our vessels and any safety standards proposed should, I feel, recognize this limited area of operations.

In response to your request for suggested participants of an ad hoc committee, I feel that this committee should be established on as broad a base as practical. Not only should representatives of research institutions be included but also personnel from the Coast Guard, major funding agencies (e.g. NSF), various insurance companies, and, perhaps, representatives of manufacturers who are heavily involved with marine communications or safety items. Now is not the time to propose unilateral regulation derived from emotional reaction or over-reaction to an, indeed, most emotional incident. While the loss of the GULF STREAM makes us all more aware of the perils involved with marine research, it would seem appropriate to proceed in a methodical and rational fashion. (After all, isn't that what scientific research is all about?) If this

approach is to be accepted, then discussion should not be limited to those of us who, in spite of varying emphases and missions, play similar roles. We should look beyond ourselves for information and additional points of view upon which to base our decisions -- decisions which will, undoubtedly, have far-reaching impact. What it boils down to, in its simplest fashion is, "let's not do it piecemeal; rather, let's do it right."

Perhaps a compilation of regulations which currently apply to research vessels as well as regulations from which research vessels, by specific designation, have thus far been excepted would be in order. Such a compilation could at least provide a common base from which further discussion might depart.

I would be most willing to assist in this endeavor in any way you deem appropriate. I am extremely interested in the outcome of this committee discussion and I would appreciate the opportunity of representing a program which, while differing somewhat from "Bluewater Oceanography", nonetheless presents its own variation of research vessel peril.

I was pleased to have finally met you at Boothbay although the occasion responsible for that meeting was, indeed, sorrowful. If I can be of any assistance, please consider me.

Sincerely,

Richard S. Carlton

Richard S. Carlton
Operations Officer

RSC/ph

UNIVERSITY OF RHODE ISLAND
KINGSTON · R. I. 02881

Graduate School of Oceanography · Narragansett Bay Campus

February 3, 1975

Captain R. P. Dinsmore, Executive Secretary
UNOLS Office
Woods Hole Oceanographic Institute
Woods Hole
MA 02543

Dear Bob,

Your letter of January 31, 1975 regarding the recent tragic loss of the R/V Gulf Stream certainly highlights the need for safety standards.

Several points I would like to make:

1. Oceanographic vessels under 300 gross tons are subject to U. S. Coast Guard Rules and Regulations for Uninspected Vessels, Subchapter C. While such vessels are uninspected, courtesy inspections can generally be obtained through the local U. S. Coast Guard Auxiliary.

2. Operators vessels under 300 gross tons should familiarize themselves with the rules for vessels of 300 gross tons and over: U. S. Coast Guard Rules and Regulations for Oceanographic Ships, Subchapter U. The individual operating institution can then decide what middle ground they wish to follow in regard to specific details.

3. For the basic seaworthiness of the vessel, it is best to have it built under the classification rules of the American Bureau of Shipping and to retain it in class by annual inspections.

4. Insurance inspections are of value when the vessel has not otherwise been inspected.

5. Between 1956 and 1963 Coast Guard casualty reports show that eight (8) vessels categorized as offshore supply vessels capsized in the Gulf of Mexico. An article in Marine Technology, October 1974, published by SNAME entitled "Recent Coast Guard Research into Vessel Stability" gives a very good analysis of the dynamics of stability criteria for various hull forms ans various headings with the sea, and in my opinion, could explain what happened to R/V Gulf Stream.

Yours truly,

cliff

C. A. Buehrens, Marine Superintendent

cc: Dean Knauss, Capt. Vanderhoop

UNIVERSITY OF CALIFORNIA, SAN DIEGO

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THE CHESTER W. NIMITZ MARINE FACILITY
SCRIPPS INSTITUTION OF OCEANOGRAPHY
OFFICE OF THE MARINE SUPERINTENDENT

POST OFFICE BOX 1529
LA JOLLA, CALIFORNIA 92037

File: A23-3

28 February 1975

Captain R. P. Dinsmore
Executive Secretary, UNOLS
Woods Hole Oceanographic Inst.
Woods Hole, Mass. 02543

Dear Bob:

As per our conversation last week I'm enclosing some info on SIO fringe benefits which you could pass on to Dave Scott.

When you were here I forgot to ask you about what kind of reply you desired to your letter of 31 January regarding Safety Standards (GULF STREAM case). Unless we hear otherwise from you I don't think you'll hear anything from SIO except the following:

Use of licensed personnel wherever feasible, and adherence to standard Coast Guard safety requirements for inspected ships should be practiced to the maximum extent possible, even if an Institution is sailing uninspected ships. Frequent drills should be held and logged and each newly embarking group of crew and scientists should be thoroughly endoctrinated with shipboard safety procedures. Daily position reports should be required, and there must be a fixed responsibility for monitoring them on the beach. I might point out that a facility like WWD does much to avoid the position reporting uncertainties that appeared to exist in the GULF STREAM case. I am available as the SIO participant for report to the UNOLS meeting in May, if desired.

Hope we'll see you in a month or two for a FLIP meeting. Let me know if I can help.

Best regards to you & Pat,

P. S. Branson
Manager of Marine Operations

PSB/jem

enclosure

Items III and IV

Operations and safety aboard ship in light of the Dinsmore UNOLS 31 January 1975 "Safety Standards" memo. Numbers (points 1-12) refer to this document.

1-3. (Cruise plans, regular reporting, and overdue vessel condition establishment and emergency procedures.)

In view of the fact that the Coast Guard will not take local responsibility for monitoring or forwarding information to other U.S. Coast Guard bases, Captain Melvin and Ross Horrall are instructed to:

* a. Make recommendations which make daily cruise plans and situation reports available at Madison via written media and/or voice recording.

* b. Originate procedures for monitoring plans and reports so as to establish chain of responsibility and definite criteria for establishing overdue conditions.

* c. Formulate procedures for starting and monitoring searches, including check points and authorities to be contacted in logical order. Necessary phone numbers and synopsis of typical information to be passed are to be provided. Include special information about those who have special capabilities besides the Coast Guard, i.e., the DNR, the University of Michigan, other research vessels, etc. (Assume no olde salts will be handling this.)

* 4. Emergency signaling devices. Captain Melvin is to proceed to check and as necessary to equip the Aquarius with suitable optical and acoustic devices and emergency radio beacons and report to the committee in terms of unfulfillable needs.

5. Life preservers. Ten kapok jackets, marked, are on board. Five Stern's jackets suitable for work wear are being purchased and will be properly marked and on board during the 1975 season.

* 6. Life rafts. Evidence of checks of life raft will be made a part of the Aquarius records (Newell). Supplies and equipment contained will be determined (Horrall).

7. While boat operator licenses are not required for this size craft, Captain Melvin will be eligible after this season (two years experience required), and it is his intent to obtain his Lakes operating licenses from the U.S. Coast Guard next year.

* 8. Emergency procedures - radio. Captain Melvin is to instruct all hands in emergency radio procedures prior to sailing. R. Horrall to draft operations manual similar to that of the R/V Eastward (but shorter) for use aboard the Aquarius and to include these procedures.

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*Action required

* 9. Emergency radio beacon. The existence of such a system for the Lakes is in doubt. R. Horrall and Captain Melvin to seek information for the committee.

10. Not applicable.

* 11. Insurance. Ross Horrall is to review and inform the committee of the complete insurance picture for the vessel and its operations. Includes: hull, equipment, onboard personnel, and liability.

12. Radar and UNOLS - not applicable.

Discussion

Meyer - Radio frequencies for research vessel use have been established for the high seas under the FCC.

* These should be appraised as to applicability on the Great Lakes, and costs estimated for their implementation. (Bob Devenish, Communications Specialist, to be contacted by Ross Horrall, etc.)

Ragotzkie - The above should be in the context of the cooperative establishment of a research radio network with Milwaukee, Michigan and others to solve a common need.

* Ross Horrall should assemble and review the emergency procedures of other institutions and report to the committee at the next meeting.

Next meeting

During the week before spring recess (March 24-28) Captain Melvin will be in town, as will all the members of the committee in attendance at the 10 March meeting.

Respectfully submitted,

Robert P. Meyer
Acting Chairman
March 11, 1975

cc: R. P. Dinsmore
Executive Secretary, UNOLS

COMMONWEALTH OF VIRGINIA

VIRGINIA INSTITUTE OF MARINE SCIENCE
GLOUCESTER POINT, VIRGINIA 23062

18 February 1975

Captain R. P. Dinsmore
UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

Dear Captain Dinsmore:

Thank you very much for your letter of 31 January 1975 concerning the loss of the R/V Gulf Stream. The discussion was most informative and has caused us to review our own safety procedures.

I believe that your forming a small group to prepare a report is an excellent idea. Some of the subjects to be covered should be:

a. Accountability for operating boats by shore based authority.

b. Qualifications of operators.

c. Requirements for safety equipment.

d. Cruise planning.

I am certain many more subjects will come up in discussion of the group. We would be pleased to make Captain McCauley our Supervisor of Vessel Operations available for a few days to assist with the study.

Very truly yours,

William J. Hargis, Jr.
Director

WJHJr:vc

UNIVERSITY OF DELAWARE
LEWES, DELAWARE
19958

COLLEGE OF MARINE STUDIES
FIELD STATION
PHONE: 302-645-6674

March 21, 1975

Captain R. P. Dinsmore
Executive Secretary
UNOLS Office
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

Dear Captain Dinsmore:

As a result of the tragic loss of the R/V Gulf Stream, Dr. Tony Inderbitzen held a staff meeting of his Marine Operations personnel to discuss this incident, based on your memo of January 31, and to review our own safety standards and practices. My involvement in our Marine Operations is with radio navigation and communication. Below are my thoughts in these areas, which I am submitting for your consideration.

Discussion Point 2: Communication Checks:

Although our boat operations are of a local nature, we have observed two specific problems: (1) Some oceanographic vessel operations do not have a VHF base radio station; and (2) Maintenance of a continuous radio watch by some oceanographic vessels underway is either intermittent or absent entirely.

If the Bigelow Laboratory did not have any research vessels, then I can understand why it had no radio station. However, with the location of the Gulf Stream, both she and Nova University should have had single side band (SSB) radio transmitters so that ship-base communication was possible at all times. The Marine Operator network is not an acceptable substitute for a base radio station. We have found our VHF base radio to be an indispensable part of our Marine Operations.

Discussion Point 8: Radio Procedures:

Although radio procedures are covered in the F.C.C. regulations, I have found a very good summarization of them, along with much other useful radiotelephone information in a booklet entitled, "How to Correctly Operate Your Marine Radiotelephone Set", available from the

following address:

Radio Technical Commission for Marine Services
c/o Federal Communications Commission
P. O. Box 19087
Washington, DC 20036

Single copy: Price - $1.25
Two or more copies: Price - $1.00 each.

I think it would also be useful if UNOLS were to publish a listing of all oceanographic institutions' radio capabilities. This listing should, as a minimum, include radio frequencies used on each research vessel they operate and at their base station. This listing could be expanded to include other useful information such as base location (longitude and latitude), base transmitter power, description of radio watch (hours and frequencies), call sign and name, etc. Once available, it could serve as the basis for a UNOLS safety network.

Sincerely,

Arthur S. Hanby, Jr.
Materiels Coordinator

ASH:llb
cc: A. L. Inderbitzen

SAFETY PRACTICES
in use at the
DUKE UNIVERSITY MARINE LABORATORY

Required from Investigator

Cruise Plan: Required from investigator before vessel sails - detailed cruise track, showing stations and estimated time for completion of each station; also showing alternate cruise plan.

Required from Institution

Radio Contact: A daily (specific hour) radio contact with home office is a must, (e.g., if the EASTWARD cannot be heard calling in at the specified hour of any given day, we immediately take action to try and raise EASTWARD by all means available (e.g., calling USCG to assist in raising EASTWARD by radio)).

Indoctrination of Scientists: Indoctrination of the scientists prior to sailing is performed routinely here at DUML. The OPC gathers all scientists and explains to them where to go and what to do during fire and boat drills, collision procedures, locations of life jackets and other safety aspects. It is important that each scientist/student know exactly what he or she should do and where they should muster during these emergency drills.

Fleet Weather Center surface analyses weather maps and prognoses are run daily both at the Lab and on EASTWARD.

Safety meetings held periodically.

Report to office immediately of any significant departure from the original cruise plan.

24-hour anticipated position report?

Stability GM calculated on all voyages that require full deck load.