

# APPENDIX VI

## QUESTIONNAIRE COVER LETTER

31 May 1995

Dear Colleague:

As the new Chair of the UNOLS Fleet Improvement Committee, I am writing to you as a recent chief scientist in a UNOLS R/V to invite your input on some critical issues in particular, and welcome your comments on the status of the UNOLS Fleet in general.

Enclosed is a questionnaire with a few leading questions. Please do not let your responses be limited by those questions.

Replies received by 20 June will be assured of receiving full consideration. Please send your completed survey to Mr. Jack Bash, UNOLS Executive Secretary.

Sincerely,

(signed)

Christopher N.K. Mooers  
Professor and Director  
Ocean Pollution Research

Encl.

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## UNOLS Customer Satisfaction Survey for Chief Scientists

The UNOLS Council and Fleet Improvement Committee are interested in knowing your response to the issues listed below. The responses will guide thinking about short-term improvements as well as long-range planning for the UNOLS Fleet.

Complete the statements by circling or checking one of the five listed responses. You are also encouraged to make general and specific comments, which would be most useful if expressed as recommendations.

1. . The follow-up to issues raised in the UNOLS Post Cruise Assessment Reports is -

superb      very good    satisfactory    fair            poor

Comments:

2. The design of UNOLS Post Cruise Assessment Reports is -

superb      very good    satisfactory    fair            poor

Comments:

3. The capability of R/Vs as platforms available in the UNOLS Fleet to meet your research requirements is -

superb      very good    satisfactory   fair            poor

Comments:

4. The capability of standard oceanographic equipment available on UNOLS R/Vs to meet your requirements is -

superb      very good    satisfactory   fair            poor

Comments:

5. The capability of standard deck gear on UNOLS R/Vs to meet your requirements is -

superb      very good    satisfactory   fair            poor

Comments:

6. The capability of standard data centers (including recording media, formats, graphics, etc.) on UNOLS R/Vs to meet your requirements is -

superb      very good    satisfactory   fair            poor

Comments:

7. The adequacy of safety standards (esp. Chapter 1 of the Safety Training Manual and precruise briefings) of the UNOLS Fleet to meet your expectations is -

superb      very good    satisfactory   fair            poor

Comments:

8. The adequacy of safety conditions in the UNOLS Fleet to meet your expectations is -

superb      very good    satisfactory   fair            poor

Comments:

9. The level of professionalism (competence and cooperativeness) of the crews on UNOLS R/Vs to meet your expectations is -

superb      very good    satisfactory   fair            poor

Comments:

10. The adequacy of the experience level of the crews on UNOLS R/Vs to support your research cruises is -

superb      very good    satisfactory   fair            poor

Comments:

11. The level of professionalism (competence and cooperativeness) of the shorebased staffs that support UNOLS R/Vs to meet your expectations is -

superb      very good    satisfactory   fair            poor

Comments:

12. The level of skills of UNOLS marine technician support, groups to meet your requirements is -

superb      very good    satisfactory   fair            poor

Comments:

13. UNOLS ship operators provide facilities and services for your research that are -

superb      very good    satisfactory   fair            poor

Comments:

14. The adequacy of specialized non-RN facilities available (FLIP, ALVIN, etc.) to serve your needs is -

superb      very good    satisfactory   fair            poor

Comments:

NAME:

INSTITUTION:

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### Summary - "Customer Satisfaction Survey" for Chief Scientists

**SUPERB    VERY GOOD    SATISFACTORY    FAIR    POOR    TOTAL**

## QUESTION

1	7	14	18	1	3	43
2	3	14	24	3	1	45
3	15	32	4	5	1	57
4	12	30	14	6	1	63
5	13	32	15	3	1	64
6	6	14	21	3	0	44
7	14	29	10	2	1	56
8	19	30	7	2	1	59
9	28	26	6	1	1	62
10	21	35	7	2	1	66
11	17	26	13	4	4	64
12	24	26	10	4	3	67
13	16	29	10	2	0	57
14	3	8	7	1	0	19
TOTAL	198	345	166	39	18	766

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## Customer Satisfaction Survey - Comments

### Question 1

- Poor - Non-existent for all ships & cruises that I've been on...while I've had few complaints, I've never had an operator tell me what they've done to fix things!
- Satisfactory - UNOLS should make more effort to get suggestions from the community about equipping the ships, porting of ships, ship support etc, independently from cruise assessments.
- Very good - Whenever we need repairs or alterations on the AII, they are accomplished cheerfully and quickly.
- Poor - I don't believe I received any follow-up to my cruise reports.
- No comment, don't remember.
- Unknown
- Can't remember if there is any report, what it says, or if there is any follow-up at all.
- Superb - Superintendent Smith also calls and discusses cruise operations with Chief Scientist following cruise completion. Marine Tech and Captain do the same as well.
- Non-existent so far - but I only returned a short time ago.
- I don't remember the report.
- Poor - The commonest effect of my comments seems to be to outrage officials at the operating institution. I generally hear about that - I seldom hear whether constructive criticisms were followed up, so without such feedback it is hard to answer this question. I'd welcome feedback from the operators that isn't couched as denial of the perceived problem, or excuses for it, but is a simple statement of what if anything the operator intends to do about it.
- Superb - This comment is based solely on my experience with my own institutions' regard for users' comments.
- Don't know.
- Very good/satisfactory - Few significant issues. Not enough time to see if action is effective, but a good attitude.
- I'm not sure. It was submitted by the CO-chief.
- N/A
- Don't know - Few scientists go out on the same vessel frequently enough to be able to assess this.
- Don't know.
- I was not requested to provide a report.
- Fair - I have never had anyone speak with me about comments in my Post Cruise Assessment

Report.

- I have no information on whether or not issues raised in the UNOLS Post Cruise assessments are followed up!
- Superb - We have not raised any issue - our cruises on the PT. SUR have been outstanding.
- All identified problems have been corrected by subsequent cruise - R/V ALPHA HELIX.
- Don't know - there are immediate and long-term issues.
- Unknown in general, unless the same ship is used again soon. My specific experience in these appropriate circumstances would indicate that neither forms nor direct verbal requests work very well if funds must be spent to correct a problem.

## Question 2

- Satisfactory - however, it should never be returned directly to the operator -- stifles truthfulness. Should be returned to UNOLS Office.
- Fair - Need improvement for quantification of results and to provide more accurate reporting of the scientists "true" feelings.
- I'm not sure the correct questions are really asked.
- A copy of the report would have helped here...
- Very good - I recall it didn't take long to fill out.
- Don't know.
- All paper work is a pain!
- Don't remember.
- I'm not sure. It was submitted by the CO-chief.
- N/A
- Satisfactory/fair - Didn't think these work very well - frequently they are not sufficiently critical. Immediately after cruise Chief Scientists rarely want to intrusive a ships operations. Only way this works is private 'one-on-one' discussions at the institutions between operations staff or chief scientist.
- Don't know about these reports.
- ROSCOP form is confusing and outdated - modern measurements often not listed.
- Not applicable.
- The design is not a big deal. Chief Scientists should not be afraid to express their opinion to the point - regardless of form style.

## Question 3

- This comment is in response to the word "capability" - "Availability" is poor and getting worse.
- Fair - The only estuarine vessel on the west coast of the US (the R/V BARNES) has/is; 1) insufficiently maneuverable, 2) too unstable, 3) too little lab space, 4) too few bunks, 5) too short a cruising time, 6) only one engine (a safety problem. The R/V SPROUL is almost unusable for estuarine physical oceanography.
- Very good - Varies greatly. MELVILLE with excellent Seabeam, good maneuvering, 0.680" wire is ideal. T. THOMPSON with poorly operating multibeam, and poor ship design making instrument recoveries difficult (despite excellent crew work) is the other end of the pack. All the intermediate ships are very good, but (see Question 4)
- Very good - We design our science around the ship's and sub's capabilities.
- Very good - Depending on state of the vessel. My experience with the ISELIN was apparently during a "low" period. I understand that it has improved significantly since that time (i.e. 1991).
- Very good - Only problem is scheduling, when the EWING is the only MCS ship in the fleet. Not much that can be done, however.
- Superb - All ship answers went to R/V OCEANUS. Don't know about rest of fleet!
- Poor - I require a UNOLS operated icebreaker. My arctic research is limited to early fall and limited ice capability of ALPHA HELIX does not permit access to important areas. Aside from ice limitation HELIX rolls/pitches badly. Operations are often terminated in marginally rough weather due to danger to equipment/personnel. HELIX should be used in bays, lakes or subtropical (gentle) waters. It is a credit to the crew's scientists that she accomplishes as much as she does in some of

the stormiest seas on earth. We can not depend on the HELIX to work in N Pacific, Bering S arctic seas. A UNOLS arctic research vessel is required. A more stable platform for the N Pacific work is required.

- Fair - Only one ship is available for serious seismic projects (R/V EWING) which can be a problem for scheduling good projects. At least one other ship (MELVILLE or REVELLE?) should be equipped to collect multi-channel seismic (maybe 60+ channels with a 3000 cu.in. air gun array). The seismic ships should be equipped with SEA BEAM 2000 or better and with P-code GPS for superior navigation.
- Superb - All except for the z-drive not working on the R/V MELVILLE on one of the thrusters. Was fixed in Valparaiso, Chile.
- Highly variable - the only ones I'd rate "very good" are those that I've put capability-enhancing effort into.
- Very good - The limited number of scientist berths on some vessels sometimes limits the number of hands available to perform the tasks required.
- Very good - for R/V COLUMBUS ISELIN, R/V SEWARD JOHNSON, R/V CAPE HATTERAS.
- Superb - I have never had a disappointing cruise on a UNOLS ship. I have also used Navy and Navy contract ships and this has not been my experience on those platforms.
- Very good - Like to work in worse weather without the hazard and discomfort.
- My only experience is with ATLANTIS II.
- Satisfactory - low cost coastal vessels are needed in Alaska.
- Very good - Cranes, winches, maneuverability and skill of officers and crew are generally excellent. Sometimes they slip a net, but rarely.
- Very good - In general, very good, but quality varies from ship to ship.
- Fair - The fact that there is only one ship (EWING) capable of firing a large tuned argus array is a major handicap to my research. The EWING's hydrosweep system, which is not state-of-the-art, is also an independent.
- We have had complete success with all projects using UNOLS R/Vs.
- There is a documented need for an Arctic research vessel with UNOLS to support US scientific objectives.
- ALPHA HELIX comes to a superb suite of equipment, a tech who knows the equipment and the ability to trouble-shoot it all at sea. The result is very little research time lost. The HELIX is small and flexible - in terms of daily scheduling. This is most useful or we modify our work as we go along.
- Fair - A vessel capable of northern North Atlantic winter, including ice strengthening, is needed.

#### Question 4

- Satisfactory - XBT hardware/software not always as good as it should be; mixed quality of meteorological sensors; mixed quality of depth sounders; CTD support for non-CTD cruises sometimes has problems - example, how do you get bottle salts done?
- Very good - Does vary a lot between ships though.
- Very good - Depends on the ship. Very wide range in equipment, expertise and reliability.
- Fair - The vessel (R/V/ BARNES) is set up for mooring work, but lacks an ADCP, and is less than ideal for CTD work. It is relative to have only one wire over the side at a time.
- Satisfactory - (Continued from Question 3)...but, I would like to see 0.680 conducting wire on more ships. Also, most ships need a few more MAC's and PC's - 486's, mac quadras and Mac PC's.
- Satisfactory - It would seem to me to be much more cost-effective (and fair) for NSF to equip the UNOLS vessels w/state-of-the-art equipment to be used by a broad user group (eg. Sea-Soar, ADCPs, etc) rather than funding a few individuals to obtain their own equipment. Some vessels have such equipment, though in some cases investigators are charged extra fees for the use of the equipment. Small scientific programs could benefit just as much as large problems with open access to such equipment. This is not a personal bias due to lack of access. I have successfully been funded to receive my own equipment, but I believe, especially in tight fiscal times, an equipment pool associated with UNOLS vessels would not only be cost effective, it would allow more talent access to high quality sampling equipment.
- Fair - All should have SAIL systems or similar and many smaller vessels do not.

- Very variable from ship to ship, depending on operator.
- Superb - Staff/scientists/crew work hard to maintain and upgrade HELIX equipment.
- Superb - Both in regards to SEA BEAM 2800, standard mgd, xbt's and dredging.
- Highly variable, with a very uneven opinion of what "standard oceanographic equipment" is - eg. lack of magnetometers on WHOI ships.
- Very good - Instruments (flow-through fluorometers, anemometers) occasionally go to sea functioning poorly.
- Very Good - For COLUMBUS ISELIN and CAPE HATTERAS.
- Very good - While all available equipment operated according to expectations, the lack of some equipment for use was disappointing. Specifically, I refer to CTD units. I feel there should be standard equipment, rather than prohibitively expensive gear (as a benthic ecologist, I could not afford the \$2,500 to rent a CTD for any of my 3 cruises). My experience in other countries has been that even tiny research vessels have CTDs available as routine equipment.
- Very good - There is a clear need to work consistently on replacing older equipment with modern versions and to introduce entirely new instrumentation. Broad UNOLS standards for modern equipment might be set.
- Superb/very good/satisfactory/fair - Varies.
- Fair - We need to test some equipment for sampling hard rock through sediments.
- Very good - "Standard" equipment varies between large (e.g. MELVILLE) and intermediate (e.g. OCEANUS) ships.
- Generally not great on AII but understandable. Acquisition of P-code GPS was great.
- Very good - One problem is the constant "improvement" of the 12 Khz echo sounder that makes it less useful for acoustic tracking and telemetry.
- Superb - The PT. SUR is well equipped for our needs.
- Very good - Would like all institutions to include CTD/rosette in basic cost of ship (block funded) so PIs don't get thousands charged on one ship that would be free on another. For example, I would need to know years in advance of a cruise if it will be on a Scripps ship (charges for CTD) or PT. SUR (no charge) to properly write the grant proposal! Also - good availability of 30L bottles would help my program.
- Any problems we have had were turned around by the vessels engineering staff. All equipment has performed superbly.
- Larger selection of "back-up" sampling gear and back-up on board monitoring equipment are desirable.
- (Small size R/V) is good for inshore work, small size is a liability for open oceans in bad weather.
- Some variation between ships. Equipment charges are on some ships, and not on others. Why do we need to pay for equipment funded by NSF?
- Satisfactory - Not "standard"; always requires upgrading.
- Very good - Why do some ships charge so high a rental fee, while others have no fee for equipment rental?

## Question 5

- Fair - Capstan/crane problems not uncommon; cranes on some ships impose limits on weather conditions for work.
- Very good - Depends on ship. Gear on most ships getting very old and less reliable.
- Satisfactory - Mooring deployments are often a problem. Varies with ship.
- Satisfactory - Mounting our ADCP over the side now goes reasonably well. BARNES needs a CTD winch and davit separate from the main crane.
- Satisfactory - The ships need better capstans, for extended use at high load.
- Superb - Primarily because of our "standard" needs.
- Fair - AII winch is and has been problematic.
- Very variable from ship to ship, depending on operator.
- Satisfactory - Some equipment on the EWING is marginally functional but should be upgraded before complete failure (esp. capstans).
- Superb - Note, the resident tech is an important and crucial aspect to this question.
- Very good - Mainly concerned with CTD and winches. During one cruise, a small backup CTD for

the main unit would have been very helpful.

- BLUE FIN - satisfactory, CAPE HATTERAS - satisfactory, COLUMBUS ISELIN, very good.
- Very good - Usually - but some old equipment requires excess baby-sitting/repair.
- Very good/satisfactory - Varies.
- Very good - Faster winches would help.
- My only experience is with ATLANTIS II.
- Very good - Cranes are capable but not always able to reach all parts of deck - stretch problem, hopefully to be rectified in time.
- Superb - PT. SUR is well equipped, and the crew keep the gear in excellent condition.
- For mooring work, variable speed capstans are a necessity, some vessels may not be equipped with this item.
- Larger selection of "back-up" sampling gear and back-up on board monitoring equipment are desirable.
- Very good - Winches, frames, cranes seem much improved over several years ago.

## Question 6

- Fair - Some platforms have little or no computing hardware; some much better; little or no standardization across fleet; better access to underway data needed on some.
- Satisfactory - Depends on ship.
- Satisfactory - Depends on the ship. PELICAN was much better than THOMPSON.
- What data center?
- Very good - Much improved on AII from a few years ago.
- Very good - As of 1990/1991 - I do not know if standard data centers on UNOLS vessels currently have the capacity for real-time graphics displays, etc., which may be useful - designing synoptic sampling regimes.
- I don't really have much experience here.
- Satisfactory - Not a lot of contact with such centers.
- Much improved - recent additions to AII improves things significantly.
- Need to have your own in-house capability - but at least SUNS, GMT, etc. are becoming standards.
- Very good - Consistent improvements made by marine tech Steve Hartz and UA programmers.
- Satisfactory - Should have more computers and tape drives available for work during cruise.
- Satisfactory - The R/V MELVILLE would have benefited from having 1/4" in tape cartridge readers for Sun Sparcs - not everyone uses 8mm exabyte tapes.
- Satisfactory - highly variable - as good as can reasonably be expected.
- Satisfactory - The capabilities change from cruise to cruise over a several month period. These changes make each cruise a new challenge even though the same vessel is used. Ship to ship variables add to the problem.
- Not Applicable.
- Very good - This varies from ship-to-ship although I have never had a problem in adapting to the local standards. A continuing effort to standardize on commercial or public domain standards should be undertaken by UNOLS.
- Satisfactory - Incompatibility always exists somewhere in the chain - provide my own.
- Satisfactory - Out put of multibeam could be better.
- Minimal experience with data centers.
- Not sure what a "data center" is. Highly variable from vessel to vessel - cannot generalize. (Assume you mean routine data collection of nav. parameters, etc.)
- Satisfactory - Highly variable from institution to institution - with Scripps excellent.
- SAIL loop great; better networking and computer capability needed.
- Fair - Some systems are quite outdated and arcane. No uniformity among ships.
- R/V ALPHA HELIX is showing great improvement.
- Satisfactory - Not "standard".
- Satisfactory - Data output from ADCP should include other media than IBM-PC 1.4 Mbyte floppies, 8mm tape or internet access would be much more efficient.
- We can bring our own software.



## Question 7

- Satisfactory/fair - Mixed across the fleet as to how serious and complete briefings are.
- Superb - No problems here.
- Very good/satisfactory - Crew wisely emphasizes safety of R/V BARNES. R/V SPROUL is so conservative that its capabilities are quite limited (e.g. no night-time transits on the Columbia, master must be on bridge during all transits). It is effectively impossible to use the SPROUL 24 hr./day in estuarine waters, except at anchor.
- Very good - Re Chapter 1 -Does anyone ever read this?
- Very good - On several occasions, I was glad to see that suggestions for safety improvements were taken seriously and implemented.
- Satisfactory - Should be taken more seriously.
- Superb - Captain and crew take safety as their primary responsibility.
- Very good - Yes, but note that acquisition of foreign clearance could be improved by sending a copy of request to Chief Scientist before going to the country to make sure correct map is used, etc.
- I'm not sure.
- Very good - As far as I know.
- Satisfactory - This issue worries me - we need to increase pressure on this. There seems to be an increasing number of very inexperienced scientists out there who need to be watched carefully!
- Very good - I didn't know this was UNOLS, thought it was Coast Guard.
- My experience on UNOLS vessels notes extreme safety conscious officers and crew, all standards are superb and have been met.
- Crew needs to set a good example in use of vests, helmets, etc.

## Question 8

- Satisfactory/fair - Mixed level of safety concern across fleet; mixed policies for crews about hard hats/steel-toed shoes/work vests.
- Very good - We cannot operate in some areas we need to, because this would violate safety standards on both BARNES and SPROUL. However, safety is fine during existing operations.
- Fair - With no overtime pay available for deck ops, I question the wisdom of putting science staff in hard hats for over-the-side ops. This is a serious safety time-bomb.
- Superb - R/V BLUE FIN - superb, others: satisfactory
- Very good/satisfactory - Some variation from inst. to inst. exists. Perhaps asking PIs on a regular basis how their cruises went would help flesh this out.
- Superb - PT. SUR is outstanding.
- Crew needs to set good example in use of vests, helmets, etc.

## Question 9

- Superb/very good - The crews compensate for the platform deficiencies in most cases; resistance and lack of cooperation in the rare case.
- Very good - Highly ship dependent, but generally very good.
- Superb/very good - The Master of the R/V BARNES (Ray McQuin) is terrific. The SPROUL is very accommodating, given the limited motion required of it. We could not do physical oceanography off the SPROUL, however.
- Very good - Crew can get grumpy if they've been out too long, or if they feel that cost-cutting efforts are compromising their abilities to do a good job. Overtime concerns make scheduling difficult and often constrain science activities.
- Very good - I have always had excellent help from the deck and engineering crew. "Officers: have also been most helpful in ensuring our scientific goals are met.
- Superb - With a few exceptions.
- Very good - Usually.
- Superb - Outstanding work by AII crew, above and beyond the call of duty.
- Superb/Very good/satisfactory/fair/poor - Highly variable.

- Superb - While not so in the past recent changes have led to considerable improvement. Capt. Rook is the best UNOLS skipper I have ever had.
- Superb++ - The captain and crew always gave 110% but at the same time insisted on safety and clearly took great pride in their work.
- Superb - Highly variable - "superb" in the case of those I have worked with most.
- Superb - BLUE FIN - superb, COLUMBUS ISELIN, very good, CAPE HATTERAS, very good to satisfactory.
- Superb - They were all great; very cooperative and accommodating.
- Superb - UNOLS has the most professional crews I know of in modern oceanography.
- Superb - Always been great.
- Superb - THOMAS WASHINGTON grew was great!
- Very good - Most of crew is highly skilled and helpful. Some are skilled but not helpful. Few are not skilled. Officers are generally highly motivated and helpful.
- Satisfactory - Cooperativeness is a problem on some vessels.
- Satisfactory - Varies quite a bit among ships and personnel.
- Superb - On the PT. SUR - The PT. SUR has been an outstanding ship for our needs (midwater training). The crew work nice together, and with the scientists. The winch and crane operator make the operation run smooth and safe with their experience. The food is exceptional, an unexpected bonus! The engineers keep all their equipment in top shape and have been great helping us when we had equipment problems. I have only been on one other UNOLS R/V and it was not the same as the PT. SUR. We got the work done and it was satisfactory, but I would rate the PT. SUR superb. It would be a good model for the rest of the fleet.
- Officers and crew have always gone out of their way to accommodate us.
- Unparalleled by international standards!
- HELIX is superb this year; a great crew and very good ship handling by skipper and mate.
- Satisfactory - Unfortunately this varies dramatically with the particular ship.

### Question 10

- Very good/satisfactory - But, if there are layoffs and some ships are not used for periods of time - will the experience be lost?
- Very good/Fair - Depends on ship!
- Very good - Aside from Ray McQuinn, other vessel operators have to be "borrowed" from other vessels at UW.
- Very good - Submersible piloting stays good as long as turnover doesn't get too high.
- Very good - Our work has not required especially unusual equipment, plus the experience level has been fine. (eg. MOCNESS, CTD, moorings, ADCP...) Occasionally the technical support has not been adequate, but this occurred with a new technical employee.
- Superb - Outstanding work by AII crew, above and beyond the call of duty.
- Superb/Very good/Satisfactory/Fair/Poor - Highly variable.
- Very good - Most of the crew is superb. Occasional new crew without experience.
- Superb - Although some of the crew were young, they were all very mature, and responsible.
- BLUE FIN - superb, CAPE HATTERAS, COLUMBUS ISELIN - very good.
- Very good - Have run into "on-the-job" mate/crew training that hinders ideal ops.
- Superb/very good - some variability.
- Superb - Lets try to keep it this way.
- Very good - A few problems from inexperience, but rare.
- I have utilized the R/V ALPHA HELIX for the past 10 years and overall have found the crew excellent.
- Satisfactory - Again this varies with ship and with who is on vacation.

### Question 11

- Satisfactory - Lack of pre-cruise information in timely fashion, such as specifics on ship's payload, on policy of crew helping/not helping with science deck work, sometimes occurs; better coordination of State Department/UNOLS operator/NOAA reporting needed.

- Fair - Probably the one consistent thing in the fleet - shore support is lacking (pre-cruise liaison, billing, post cruise follow-up).
- Fair - Problems include/have included: overly bureaucratic approach, lack of understanding of estuarine/coastal operations, unrealistic safety standards (restrictions on use of the R/V SPROUL in the Columbia River), and poor communication skills (U of WA).
- Satisfactory - ENDEAVOR (URI) - very good, ISELIN (Miami-1991) - fair to poor - hard to communicate with, also we were not informed of known problems with the ISELIN's ADCP.
- Poor - WHOI billing practices appear random; if not malicious; foreign port problems with unscrupulous agent; answers to questions often difficult or impossible to decipher.
- Very good/Satisfactory/Fair/Poor - Variable.
- Variable - Rawson at LDEO is superb.
- Very good - Yes, but note that acquisition of foreign clearance could be improved by sending a copy of request to Chief Scientist. Before going to the country to make sure correct map is used etc.
- Some very good/some poor - I find the ship's crew support (eg. marine superintendents, port captains, etc) very good. The ship scheduling/foreign-clearance-getting staffs unskilled and often unhelpful; these jobs should be filled by people who know something about logistics, shipping, geography and diplomacy, not just secretaries with on-the-job training.
- Satisfactory - Some of the shorebased staff was extremely competent, but others were incommunicative and less than helpful. I have no recommendations for this other than hoping it is better next time...
- Superb - Participation by RSMAS SWAB team (Ostlund, Topp, Grall) is crucial to maintaining our capability of collection samples for natural 14C & 3H abundances. Their interests are important, & funding of this group essential.
- Very goods - This is more important during planning.
- Superb - Very helpful and cooperative.
- Satisfactory - Not as responsive to requests as the crews/mar techs are.
- Excellent (consistent) support.
- The people are excellent. I have become disappointed with their difficulties for keeping day charges down. I'm not sure that distributed operation is still the best mechanism for operating UNOLS vessels.

## Question 12

- Very good/satisfactory - These folks always seem over-worked but always also seem to come through. They cannot be experts on all the gear now on some ships.
- Superb/Very good/Satisfactory/Fair/Poor - Depends on the ship, obviously!
- Very good/satisfactory - Varied. PELICAN - very good. THOMPSON - marginal.
- Superb/very good - Both U of WA and Scripps have good technical people.
- Very good - Occasionally the technical support has not been adequate, but this occurred with a new technical employee. The technical staff at URI was very helpful.
- Unknown - WHOI sea-going tech support is ambiguous. Is this the DESSC tech? Deck assistance? Its very unclear.
- Very good/satisfactory - Variable.
- Variable, even within an institution
- Superb - Both marine techs go beyond their responsibilities to assist.
- Superb - Note, the resident tech is an important and crucial aspect to this question. Computer support was also superb.
- Poor - It is increasingly difficult to find first class and up-to-date electronic engineers, systems analysts, programmers etc. who are willing to go to sea. Too many people in these support groups are expensive long-servers with out-of-date skills and declining motivation.
- Very good - This varies with the experience of the technical staff. It always has been very good and occasionally superb.
- Superb - CAPE HATTERAS, Tim Boynton, satisfactory - COLUMBUS ISELIN.
- Superb - They were all great; Very cooperative and accommodating.
- Very good - Usually not required, but...
- Considerable variability.

- Very good - Mostly expert at what I want, occasionally expert only at something I don't care about and not too good at what I need.
- Satisfactory - Highly variable - some are superb and some fair.
- Very good - This form does not address cooperativeness of marine techs. On some vessels this is clearly an issue.
- Satisfactory - Varies greatly among institutions.
- Steve Hartz is excellent in all ways - hard working, competent, and forward thinking.
- Superb - They are usually enthusiastic and helpful.

### Question 13

- Very good/satisfactory - The refit Oceanus class with new limitations due to heavy cranes and the large AGOR 25 ships indicate a trend toward ships that may prove to be less useful. There is need for low cost (small science party), weather-capable, vessel that could carry a large deck payload. The refit has lowered pay load and weather capacity. The big ships are very expensive.
- Satisfactory - As an overall comment, each R/V is an independent operation and there is little consistency between operations (although this is slowly changing). This is a particular problem when you are forced to use a ship other than the one you requested.
- Fair - The only facilities on the R/V BARNES are a bare, overly small lab. However, the navigation equipment (GPS and gyrocompass) is functional.
- Satisfactory - All a bit cramped, but adequate.
- Very good/satisfactory/fair - Variable.
- Mostly good.
- Very good - Always willing to adapt to contingencies.
- Very good - (When they are available) Long delays for cruise scheduling are the biggest problems. If the availability is taken into account, the rating would be "fair".
- All has problems doing ancillary work at night because can't use main A-frame and lacks conduction .68" coaxial.
- Very good - Some docks, receiving departments, and shipping support are better than others. Mostly they are very good or superb.
- In the specific instance of northern North Atlantic winter work, the UNOLS fleet is lacking.

### Question 14

- No basis for comment.
- None exist for estuarine work.
- Very good - FLIP deserves wider support from UNOLS.
- No experience.
- No contact.
- Fair - ALVIN - inattention to upgrades; poor navigation; pilot retention; all issues we're addressing on DESSC.
- No experience with these.
- Very good - When using equipment from the Alvin group for a French Nautilie Dive, I was given excellent instructions, and the equipment was fully tested, etc.
- Satisfactory - I haven't used Alvin for several years; then it was ok.
- No opinion.
- Not applicable.
- Superb - My experience is solely with Alvin.
- Alvin is ok, but not exactly the best in the world anymore.
- Not sure.
- Satisfactory - Alvin facility needs improvement in way of support personnel and the reliability of some of the instrumentation.
- Haven't used them in a long time.
- No experience.
- Not applicable.
- Don't know.

- We do not use such vessels.
- Generally not applicable to our cruises, but others I have been on.
- Not relevant in my work.
- FLIP is a non-consideration. ALVIN has become a political object that is difficult to obtain for locating other than those on the "yo-yo" route.

## Comments

- I think this sort of survey is useful. However, an evaluation of chief scientists, their preparations for a cruise, and their attitudes, by R/V operators would also be useful! I've seen too many who came half-prepared, with mickey-mouse equipment, trying to do crazy things. Then, if it doesn't work, you'll probably see "unsuccessful" in the chief scientist's cruise evaluation. That sort of think is just as wasteful of time and money as inadequacy of ship's equipment, etc. - yet we don't seem to have a mechanism to correct such occurrences.
- This questionnaire is well-intended, but is far to general on the one hand, and far too detailed on the other!
- New Question:
- The adequacy of this questionnaire as a constructive guide to user's opinions.
- Poor - I think you should have made a distinction (or had 2 separate questionnaires) between comments applicable to the chief scientist's own institution's ship, and those of other operators. When we use our own ships, then any deficiencies are to some degree our own fault.

Also, the only rational answer to most of your questions, to people who have used several ships from several operators, is "highly variable" - sometimes very good, sometimes inadequate.

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