

How (Not) to Run an Oceanography Field Course

By Simon Boxall

In the past I have written in this journal about the importance of fieldwork to oceanography students, how it is often the most enjoyable part of our degree course, and where as much is learned from students' mistakes as from being told in a regimented way how to proceed with a survey. This experience is often facilitated by what sits behind such a field course, involving a massive organizational effort where mistakes are not an option—from both a safety as well as an experience perspective. As our two-week summer field course came to an end last month, one of my colleagues suggested I should write this column about the background effort in the organizational side of student fieldwork to provide a perspective.

I have coordinated fieldwork for students for so long it has become second nature for me, and whilst changes take place every year, they tend to be step changes that get absorbed in the organizational machine. Thirty-two years ago we ran our first ever oceanography field trip. It was coordinated by one of our marine chemists, and we (staff and students) traveled by one minibus to the west of England to spend a week working offshore on a very bumpy boat called R/V *Squilla* (aka the Vomit Comet). We had one laptop—state of the art with dual floppy drives and 64k of memory—and one small lab for post-cruise sample and data analysis. We had nine students and four staff—a marine chemist, a marine geologist, a marine biologist, and a marine physicist (me). All 13 of us shared a large flat in university halls, and we were either all together on the water or in the lab. We borrowed some equipment from the Marine Biological Association in Plymouth and also took some of our own in the back on the minibus. The plan



University of Southampton students working offshore in the mid-English Channel aboard one of our chartered vessels.

at the time was that we would rotate coordination on a two-year cycle, and for four years that worked fine. In the fifth year it was my turn, and I have been doing it ever since (I still haven't worked out how the maths of that worked out) with a colleague co-supporting the organization in recent years.

Over time, the nature of the course has changed beyond all recognition. This year, our thirty-fourth course, involved 130 students and 25 staff—that faculty minibus gets totally overloaded! It means running with 15 groups rather than one, and four vessels, three large laboratories, a 7.5 tonne truck, two 60-seater coaches, an assortment of other vehicles, and of course, the minibus. The one Zenith laptop has been replaced by a suite of 70 networked laptops that we take with us, complete with an IT team to keep them running. In spite of all of this, it is a relatively straightforward process, and the true financial cost per student has actually fallen with time from the heady days of just nine.

So what are the key elements? The main one is colleagues. We have an amazing team of regular staff who just get on

with doing a brilliant job. Many have been doing it for nearly as long as I have, and so much of the fine detail—ordering chemicals, setting up the wet labs, ensuring the equipment (sea-going, computing, and lab) is serviced and ready to go—just happens. Well, it doesn't just happen. I sign my life away with a plethora of purchase orders (I am sure I end up funding the labs for the rest of the year at Southampton), and the team all work really hard. They are also a keen team. Not just a “can do” attitude, but also enthusiastic and engaging for the students, who are the reason we are there in the first place.

I cannot overemphasize the importance of great colleagues. Over past years we have had staff at different levels, from academics to technicians, who really didn't want to be there. Our faculty went through a phase of insisting that everyone contribute to fieldwork on a rotation basis. A worthy principle, but an unworkable practice. Bored academics would hide below decks catching up with their latest paper (either academic or news), barking occasional instructions to students, or technicians would find a way by which the simplest tasks could not be achieved. Having eschewed the faculty policy on this, we have developed a team of highly capable enthusiasts. Postgraduate demonstrators are also a critical part of the equation, ideally from a growing pool of undergraduates who once took the field course themselves and so understand the problems students encounter in the work.

The second key element is Plan B (or C, or D, or even sometimes E). If something can go wrong, it probably will. I always have a spare day in the program that on a good year gives staff and students a catch up day but is also there if a

vessel becomes unserviceable. My phone book is full of vessel charter companies, and I have backup vessels lined up in case the problem is longer term. I would say at least once every two years there will be a small issue and once every five or six a major issue. One year involved sitting on a quayside with a truckload of kit and staff awaiting a charter vessel we had booked. After a few hours of waiting, I chased the company, only to be informed that the engine had “encountered some problems” and it might be out of action for a few days. They could offer a tourist pleasure boat with no winches, mains power, lab space, or certification for working more than one mile offshore, or maybe we could delay the field course by a week?. With over a hundred students en route and staff/lab and other vessels committed, that wasn’t an option, and so by 10:00 the following morning, we had a replacement vessel up and running from a different organization. The original vessel took four months to get back into service in the end, and we used the replacement vessel for a further 10 years until it was decommissioned by the owner.

Accommodation is a major issue with any type of field course. With 13 students and staff, there are usually many options available, from university accommodation to hostels and even budget hotels, making location less of an issue. With 150 students and staff, it is a bigger problem. We are limited to university halls and, given that the course runs over a two-week period, having access to kitchens for self catering is also important. Few hotels can accommodate us, and the cost would be monumental. Costs for us are of the order of \$50k for accommodation alone in university halls. Two years ago we were let down at what is relatively the last minute (four months prior to the start) by the university we were using, and I got a quote for a hotel option of over \$170k. We ended up switching to Plymouth and restructuring many aspects of the course (labs, boats, etc.). It worked so well we have stayed there since. Planning ahead is important for these numbers, and I make

bookings for labs, accommodation, and boats for the next year while still on the current year’s course.

Then, we get to the students themselves. I’m not sure which is more complex to juggle—staff or students. We are never sure of exact numbers until two weeks before the course starts, and students who are on a gap year abroad will be in a different pathway than those returning to Southampton to study in September after the summer break. The details of those abroad come in very last minute, and there is also the issue of failed exam results with the difficult calls to a very small number of students along the lines of “you know you were planning to be on the coach next week on the way to Plymouth, well...” Most vessels in the UK and US are limited to taking no more than 12 students and non-boat staff, and so small fluctuations in numbers can cause problems with group sizes. Dealing with students making their minds up is also an issue with frequent discussions along the lines of, “I know I wanted to share a flat with Fred but Fred and I split up three weeks ago and so I need to be in a different flat and group please.”

If you take 150 plus people away for two weeks, there will often be medical issues. All of our fieldwork staff are first aid trained, but there are the inevitable hospital visits. The majority of them, it has to be said, can be traced back to too much alcohol and stem from evening activities. In the UK, the legal age of drinking is 18 (much to the delight of the visiting US exchange students), and given our students on the course are all around 21, they are responsible (or not) for their own behavior outside the work environment—we don’t operate a lights out approach at that age. These range from the student who fell off a dance pole while demonstrating her skills to her friends in a night club (evidently not that good), to the rather inadequate physical oceanography student who tomb-stoned off the end of a pier—at low water. Both ended up with short trips to casualty. The key elements to controlling this is (1) keep

them busy and (2) exposure to “Simon being very disappointed in someone’s behavior” at the early stages of the course. There is a fine line on keeping them busy. If it is too intense, then staff and students get tired. We got to a stage some years back where the labs weren’t closing until nearly midnight, and staff and students got overtired, resulting in a number of avoidable accidents. We reduced closing time to 20:00, and that works well. I am a very laid back person, so when I get “cross” because someone turns up late to join a boat or has a hangover (we don’t allow them on the boat or in the labs if they do), the message seems to sink in and no one is late or hung over again.

Choice of location is the final critical element—and revolves to an extent around many of the above. It needs accommodation for many. It needs to be accessible by our own vessels from Southampton within a reasonable timeframe (we still charter others as well). It needs access to extensive lab facilities, in one location. It needs to have a scientifically interesting environment for the students to explore, with sheltered options in the event of poor weather. The ability to walk between halls, the labs, and the boats is a big bonus—I have spent several years where we’ve ended up with staff running minibuses between the various facilities, and it is a pain. I look on with envy at my colleagues who work either with much smaller groups or with larger groups but no need for boats working in Bermuda, Galápagos, or even Scotland. Taking our traveling circus to any of these places would be prohibitively expensive. We have only three choices from Southampton...possibly best of which would be Southampton.

Southampton has many state-of-the-art teaching labs at the National Oceanography Centre where we are based, boats sitting outside on the pontoon ready to go, and a university halls just five minutes walk away. We also have a 60 station teaching computer room and one of the best oceanography libraries in the world. We have a varied environment

to cover many aspects of marine science, and waters that offer open coastal seas to sheltered estuaries. So why not base our course here? To begin with, our first-year undergraduates do their initial field course here. They also spend all four years of their degree working on the waters in and around Southampton. Staff would be less accessible, as most would be nipping out for meetings—or home for the weekend—all of which detract from the learning experience of a field course. Students would also be disappearing off into their own established social groups rather than bonding with their new group during the off-duty periods.

Many years ago we did an exchange where we ran a field course with the University of East Anglia with some of their oceanography and meteorology students working at Southampton and some of our students working there. Academic staff from each followed their own students, but the vessels, labs, and sup-

port staff were from the home university. There was limited exchange of money, running on a quid pro quo basis, and it worked well. The core courses changed in character and the exchange stopped. More recently, there was a network of European universities that ran a limited set of summer schools where students opted to undertake a course at one of the partner institutes. It was a limited experiment that unfortunately stopped when the EU funding ended.

I would like to propose a global network of summer schools—similar to those run at institutes like the Bermuda Institute of Ocean Sciences (BIOS) but on an exchange basis. Students might opt for a summer school in BIOS on tropical zone ecology, or a summer school in Svalbard on polar oceanography, in Plymouth on stratified coastal seas, or Southampton on estuaries and coastal environments. Southampton may not sound much like a field trip for one of its

own students, but for a student from the University of Bergen or the University of North Carolina Wilmington, it is different enough and provides a wide range of experiences and techniques. A scheme like this would reduce costs to the home institutions, which are set up for teaching oceanography very efficiently in their home waters. Students would select an area of interest and have a chance to work with a group of young scientists from across the globe. It would need to be on a no fee basis to work efficiently, but would benefit the partners both financially and in terms of an enhanced student experience. Any takers? The only down side is I will end up back in Southampton and still never get to one of those exotic locations. My wife, who often proof reads these columns for me, is up for that. 📧

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