HOT-75: Chief Scientist Report

Chief Scientist: D. HEBEL

HOT 75 Cruise Report
R/V Moana Wave
19-23 August, 1996

Personnel List

HOT 75:

WOCE group:

Jefrey Snyder*	Electronics Technician	UH
Craig Nosse	Research Associate	UH
Molly Lucas	Graduate Student	UH
Mike Guidry	Graduate Student	UH
Matt Cochran	Graduate Student	UH

JGOFS group:

Dale Hebel	Chief Scientist (Co-PIJGOFS)	UH
Terry Houlihan*	Research Associate	UH
Daniel Sadler	Graduate Student	UH
Lance Fujieki	Computer Specialist	UH
Angie Thomson	Graduate Student	UH
Bruce Monger	Visiting Post Doc	UH

Ancillary projects

Karen Selph	Graduate Student	UH
Stephanie Christensen	Research Associate	UH

STAG

Steve Poulos	Electronic Technician	UH-UMC
Dave Gravett	Deck Technician	UH-UMC

* Watch Leader

Itinerary (approximate local time):

Monday, 19 August

0900 Departed Snug Harbor
0950 Fire, safety, abandon ship drill/science meeting
1140 Arrived Kahe Pt. (Sta. 1)

1150 Wt. cast
1250 PRR-600 cast
1320 S1C1
1500 Departed Kahe
1940 Deployed OPC
2300 Retrieved OPC

Tuesday, 20 August
0200 Arrived Station ALOHA
0210 Plankton net tow
0310 Deployed floating sediment trap (22°45.82'N,158°01.14'W)
0440 S2C1 (deep cast)
0920 S2C2
1040 Plankton net tow
1110 PRR-600 cast
1200 S2C3
1310 Plankton net tow
1430 PRR-600 cast
1500 S2C4
1800 S2C5
2100 S2C6
2210 Plankton net tow

Wednesday, 21 August
0010 S2C7
0110 Primary productivity go-flo cast
0300 S2C8
0520 Deployed primary productivity array (22°45.25'N,158°00.27'W)
0600 S2C9
0900 S2C10
1010 Plankton net tow
1200 S2C11
1340 PRR-600 cast
1500 S2C12
1850 S2C13
2040 Recovered primary productivity array (22°44.7'N,158°08.0'W)
2120 S2C14
2210 Plankton net tow

Thursday, 22 August
0040 S2C15 (deep cast)
0920 Recovered floating sediment traps (22°44.6'N,158°16.9'W)
1110 Deployed OPC

Friday, 23 August
0020 Retrieved OPC
0720 Arrived Snug Harbor
1200 Completed offloading of all science gear

Narrative:

HOT 75 was a 4 day cruise conducted 19-23 August 1996 aboard the R/V Moana Wave with Capt. Stahl as Master. Final aspects of loading were conducted on 14 & 15 August since most of the large pieces of deck

equipment were left onboard after HOT 74. Terry rebuilt 8 of the Go-Flo bottles and we removed two of the hard hats from the primary productivity array added for the spectraradiometer deployment. All over-the-side operations were completed and all samples collected, however, the Licor recorded erroneous data due to a (presumedly) faulty cable. The ship continues to provide a good operational platform for our work and as usual the captain, crew and STAG members made every effort to help us attain the established cruise goals.

14 August (all times local unless noted)

Loading was completed for most participants by 1400 hrs. Later that day I ran into Dave Harris aboard R/V Moana Wave doing additional OPC pump diagnostic tests. This information was requested by the manufacturer of the pump power supply box to identify and correct the problem. The CTD was not on board at this time as well as the PRR computer.

19-23 August

8/19/96

Departed Snug on time with all personnel except Mai Lopez whom needed to seek medical attention for an arthritic condition. After departure the chief mate (Ross Barnes) ran the usual abandon ship drill followed by the science meeting. Arrived Kahe ~1130 hrs and began operations. All operations completed and all instruments/equipment functioning properly. Departed Kahe ~1500 hrs steaming at 1/2 speed while CTD was completed. Underway all ahead full ~1600 hrs enroute Station ALOHA. Weather conditions at Kahe were hot and still with a slight swell.

We wanted to deploy the OPC at a position which would allow us to reach station at the scheduled time (0100 hrs). Captain Stahl determined that we should steam full ahead until 1900 hrs, deploy the fish and reassess our time-frame at that point. All went well with the deployment although we were not as familiar with the procedure as Mai so it probably took us longer than if she had been here. Towed the fish until ~2300 hrs when it was retrieved leaving about a 2 hr full speed steam to station. The seawater pump was operational throughout the deployment delivering ~ 1 liter/min.

8/20/96

Arrived ALOHA, conducted a net tow, deployed the traps and commenced WOCE-1 deep cast. Sea conditions are moderate (3-5 feet) with Trades at ~20 kts. Continued op's with WOCE-2 (shallow), 2 light casts and s2c3 (pc/pn) completed at shift change. Sea conditions have improved throughout the day, winds still Trades, and skies relatively clear.

8/21/96

Night shift has remained on schedule and to our relief the Go-Flo bottles all operated properly after being rebuilt by Terry before the cruise. One messenger lanyard did hang up on the 175 m bottle which

was redeployed and successfully triggered at depth. Thermosalinograph and ADCP are operating properly and CTD operations continue without bottle or sensor problems. John reported that they lost the RDF signal from the primary productivity array (around midday) and would update positions by visible fixes. The weather continues to improve.

8/22/96

We completed all CTD op's without any problems including a second WOCE deep cast. Following operations at ALOHA we steamed to the last position of the sediment traps which have been traveling almost due west. After the sediment trap recovery (note: record number of mahi caught during recovery) we steamed back to ALOHA and conducted an OPC grid continuing the survey on the return leg until it was necessary to retrieve the OPC and steam full speed. The weather has continued to improve with very light winds and almost glass smooth seas. A slight dusting of tricos was noticed on the surface during the BBO to commemorate HOT 75.

Weather:

HOT 75:
The weather was mostly sunny with light winds and calm seas. Below is listed the cruise log bridge descriptions and the various values represent the range for that day. Under wind, sea, and swell there will be two designations, the first is the direction (in degrees), the second for wind is in kts, for sea in Beauford force, for swell in feet, and clouds in tenths.

Day	Date	Wind	Sea	Swell	Clouds	
Monday	19 August	065-210, 5-23	065-210, 1-4	075-110, 3-6	3-6	
Tuesday	20 August	060-090, 14-18	060-090, 3-5	050-080, 3-4	1-6	
Wednesday	21 August	055-080, 10-16	065-080, 2-3	070-080, 3-4	1-7	
Thursday	22 August	050-065, light-8	050-065, 1-2	060-070, 2-3	1-6	
Friday*	23 August	045-070, 6-10	045-070, 2	070-110, 2-3	0-3	

*Only two entries (0200 and 0600 hrs)

Equipment and methods:

All standard equipment used on HOT 75 functioned properly with the exception of the Licor light logger, one of the two Argos transmitters, and the primary productivity RDF transmitter. Prior to departure (8) Go-Flos and the sed. trap spar buoy were rebuilt. In addition, two hard hats were removed from the sed. trap array. No equipment was lost.

Sub component programs:

Investigator:	Project:
Li/Winn (UH)	DIC, pH, Alk., pCO2
Bob Bidigare (UH)	HPLC pigments
Michael Landry (UH)	Zooplankton dynamics

Ancillary programs:

Investigator:	Project:
Charles Keeling (SIO)	DIC
Paul Quay (UW)	DIC isotopes
Hans Thierstein (ETH Zurich)	Calcareous plankton studies

Additional Experiments/Samples:

Dale Hebel	Exudated Organic 14C
Kendra McDonough	Deep (4000 m) seawater
Chris Measures	Trace metal surface samples