




CRUISE INSTRUCTIONS AMENDMENT

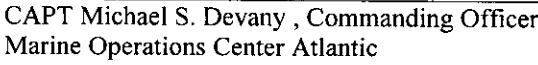
EX0909 - Leg 3

Mapping Field Trials VII

Hawaiian Islands

NOAA Ship *Okeanos Explorer*
October 1- 21, 2009


John McDonough, Deputy Director
Office of Ocean Exploration and Research
NOAA Office of Oceanic and Atmospheric
Research


CAPT Michael S. Devany , Commanding Officer
Marine Operations Center Atlantic
NOAA Office of Marine and Aviation Operations

Personnel

EX 0909 Leg 3 (Oct 1 - Oct 21): SST Peters on leave for this leg. One ST from the augmentation pool

Name	Affiliation	Role	M/F	Status
Malik, Mashkooor	OER	Expedition Coordinator	M	US Permanent Resident
Kelley Elliott	OER	Mapping	F	US citizen
Megan Nadeau	OER	Mapping	F	US citizen
Melissa Johnson	OER intern	Mapping	F	US citizen
Adam Lemire	OER intern	Mapping	M	US citizen
Lillian Stuart	OMAO	Mapping	F	US citizen
Webb Pinner	OER	Telepresence	M	US citizen

The primary objectives for this cruise are to test various ship's equipment and refine mapping sensor operations and data processing protocols. Additionally, it was realized that as we test and refine mapping ops protocols, there are opportunities to cover some areas that may be useful for later ROV testing and regions that are critical to the US ECS claim. We will also use this opportunity to survey regions that are priority areas for NOAA and other research / academic organizations.

Mapping priorities proposed by local HI scientists

1. Filling in holidays of HRMG multibeam data synthesis around Hawaiian Islands.
2. Priority area outside the monument boundary.
3. Three wreck sites where wrecks have not been located as of yet.

Mapping priorities proposed by OER staff

1. Targets suitable for ROV testing around Mauna Kea in protected waters.
2. Various seamounts around the Hawaii Island (Mauna Kea) including Wini, Hohono, Loihi, Apuupuu seamount (Except Wini all have existing multibeam data coverage), which can be suitable for repeat surveys and data comparison purposes.

Ship priorities:

1. Small boat work including coxswain training, breaking in of small boat
2. CTD training for the deck and survey department
3. DP training

Changes in the cruise plan

In light of the new data sets and information about areas of interest and priorities for OER and local Hawaii scientists, the following updated schedule for the EX0909 Leg 3 cruise

is proposed. Please refer to figure 1 for any reference to mapping areas. All other sections including the cruise objectives in the submitted cruise plan remain unchanged. Major changes in the cruise implementation plan include:

- a. Switching Necker Ridge (Leg 3) and Mauna Kea (Leg 2) cruise to provide more time for discussion with local Hawaii scientists and synthesize additional information to help identify ROV targets. Now Necker ridge is proposed to be mapped in Leg 2 and Mauna Kea areas in Leg 3.
- b. Deletion of mapping areas 1 and 2 (in the submitted cruise plan) from Mauna Kea cruise as these areas have already been mapped with multibeam systems.
- c. Inclusion of mapping over HRMG synthesis holidays, ROV target area on the west coast of Hawaii Island, and one of the PMM provided priority area during Muana Kea cruise.
- d. Addition of CTD training, small boat break-in and DP testing in conjunction with mapping in protected water off Oahu. CTD training will include conducting one shallow water CTD cast (~ 750 m ~ 20 minutes) daily.

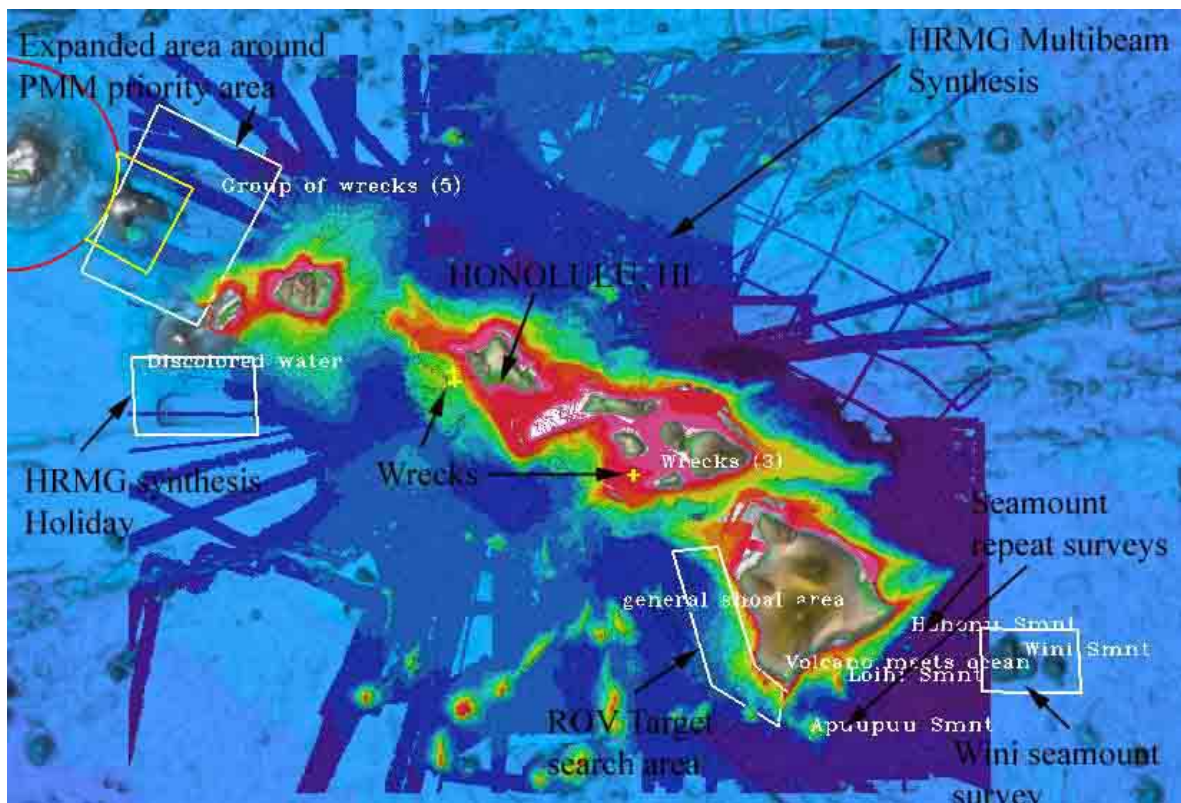


Figure 1: Detailed view of proposed mapping areas during EX0909 Leg 3.

	Dates (mm/dd)	Location	Operations	Time (Days) Approx.	Distance (nm) Approximate
EX 0909 Leg 3	10/01	Depart Honolulu			
	10/01- 10/03	Transit to Wini Seamount	Mapping in Transit over HRMG small holidays	1.5	250
	10/03 - 10/05	Map around Wini seamount	Mapping	2	400
	10/05- 10/07	Map other seamounts in vicinity	Mapping Possible CTD cast	2	200
	10/07- 10/10	ROV target search area	Mapping	4	800
	10/10- 10/11	Transit to south of Kauai Island	Transit Mapping	1	200
	10/11- 10/14	Mapping in HRMG holiday box	Mapping	3	600
	10/14	Transit to PMM priority area	Transit Mapping	0.5	100
	10/14- 10/19	Expanded area around PMM priority area	Mapping	5	1000
	10/19- 10/21	Transit to Honolulu	Transit	1.5	300
	10/21	Arrive Honolulu	Arrival		
Total				21	3850

Table 1: List of projected major operations associated with EX0909 Legs 3 cruise.

Detailed coordinates for the mapping areas are included in the following table:

		Approx Depths (m)	Bounding box location (Not to be used for Navigation)	
			Long (-W)	Lat (+N)
EX 0909 Leg III	HRMG small holidays while transiting from Honolulu to Wini Seamount (Expected to be covered by single line)	300-2500	-157.84453345	21.03302783
			-162.28582560	23.57158610
			-157.05138957	20.43353984
			-156.36012370	20.24634298
			-156.19301554	20.23301799
			-156.07921753	20.29848531
			-155.83106283	20.39270121
			-155.73145345	20.36032104
			-155.26350708	20.08205465
	Mapping area around Wini Seamount	< 4500	-154.08083203	19.33948413
			-154.06649805	18.82745905
			-153.27361043	18.81396993
			-153.29230754	19.32653707
	Several seamounts in the vicinity	500 – 4000	-160.0 27.0	Sibelius seamount
			-154.7 19.3	Hohnonu seamount
			-155.5 18.5	Apuupu seamount
			-155.2 18.9	Loihi seamount
	ROV target search	500- 4500	-156.59051921	19.97705282
			-156.23213704	20.02078044
			-155.92926636	19.05185954

			-155.69806722	18.86832275
			-155.73866781	18.55351563
			-156.27424113	18.87302958
			-156.58455404	19.95364176
	HRMG holiday area south of Kauai island	< 4500	-160.96135864	21.52200114
			-159.98548177	21.54313863
			-159.94773153	20.90511068
			-160.92960815	2.89226888
	Expanded area around PMM priority area	100-2000	-161.37304688	22.23185832
			-160.75572197	23.57557129
			-159.75797986	23.08341309
			-160.40018018	21.78639941