

VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	07:50	+4	11:50	Port San Juan Puerto Rico	18° 27.698' N	66° 05.917	MANN

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
26	JUL	89	0800	WRNG Should be ST	1200						0	BEGIN MW8909 Puerto Rico, San Juan → Jamaica	
(207)			0805		269	5.6			6678	6673	180	U/w From San Jan - Transit to area	
			1500		271	10.6							
27	JUL	89	0000									Transit to area → Gravimeter Recording	
(208)			0715									PWL FAIL IN LAB from here to 1630 2005 cur	
			1015									RESTARTING GRAV - MONSERV + PL's	
			1630		258	259	10	33960	7176	7171	180	10	
			1621	15									
27	JUL	89	1700	15	259	263	10	1	7228	7230		SAT 17° 11.739' N 70° 57.426' W EL-50 IT-3 CI-22 UP	
(209)			1708									DEMO! MAGNETOMETER, STRAUER	
			1710									SLOW TO 4 KTS -	
27	JUL	89	1730		259	264	06	23565	7279	7282		RETURN to speed 6 knots I/S (Not on Rec)	
(210)													
27	JUL	89	1941									Slow to 4 knots R/S	
(211)												I/S 6 KTS	
27	JUL	89	1750									Magn reinforced, inoperative	
(206)													
27	JUL	89	1800		259	266	06	60645	7330	7333	150	10	
(208)													
27	JUL	89	1813									all equip. pulled from H2O, incl PC's	
			1830		259	264	06	83325	7383	7385	150	12	
27	JUL	89	1857									I/S 10 KTS	
(209)													
27	JUL	89	1900		259	267	99	103095	7448	7450	150	10	
(208)			1930		259	267	10	03125	7488	7489	150	10	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V HOANA WAVE	HW 8909	15:50	+4	19:50	South of Haiti Dom. Rep.	17°06.509	71°26.551	Paul MANN

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER		WIND DIRECTION	KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY	SPRING TENSION				
27	JUL	89	2000	259	267.1	6.6	<del>388</del>	45		75407	542	150	10	Watch Change	EC
(208)			2030	258.9	265.2	10.6		2250		75951	589	155	10		EC
			2100	258.8	258.7	10.4		2375		76457	638	190	14		EC
			2130	258.8	261.7	10.4		2100		76967	693	185	12		
			2135											Speed change to 4.8 knots	EC
			2145											Resume speed	EC
			2150											gun redeployed Port side 40 in <sup>3</sup> EEL Deployed starboard	EC
			2200	258.9	265.1	8.0		2350		77567	745	185	10		EC
			2203											SAT 17 04.073 N 71 45.828 W EL 47 IT 2 CT 33	EC
			2230	258.7	270.6	8.2		2700		77977	790	175	10		EC
			2300	258.6	275	8.0		4675		78477	840	170	8		EC
			2307											R/S; Retrieve gear	
			2308											Turn off Recorder #3 + Kaytheon	
			2313											SAT FIX 17 03.322 N 71 57.329 W EL 62 IT 2 CT 24	EC
			2324											All gear retrieved	EC
			2325											R/S	EC
			2330	258.5	277.4	6.4		4275		78487	891	180	6		EC
			2345											SAT FIX 17 03.088 N 71 59.739 W EL 19 IT 2 CT 27	EC
28	JUL	89	0000	258.2	276.6	10.8		4275		79507	942	175	6	watch change	EC
(209)			0030	<del>258.0</del>	264.4	10.8		4270		79958	000	190	7		MK
			0047											SAT FIX 17 02.241 N 72 14.607 W EL 70 IT 2 CT 29	REJECTED MK
			0100	258.0	260.2	1.0		4270		80458	051	194	6		MK
			0130	258.1	261.1	1.0		4270		80975	023	230	7		MK
			0200	258.1	264.4	1.0		4270		81438	147	190	5		MK
			0230	258.1	263.6	1.1		4270		81938	197	190	4		MK



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	2230	+4	0230 <del>2230</del>	HAITI / South of Dominican Republic	16°58.085'N	72°33.753'W	PAUL MANN

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
28	JUL	89	0234								0	SAT FIX 1658.090 N 7233.826 W EL11 IT12 CT20	MK
		(209)	0300	258.1	263.2	10.5	<del>4267</del>		8244	8247	190° 5		MK
			0330	258.0	263.4	10.6	4265		8293	8300	180° 6		MK
			0400	261.4	261.0	11.1	4245		8343	8346	180° 10	WATCH CHANGE Sat 1658.358, 7219.133 W	EC
28	JUL	89	0430	258	265	10.6	4265		8394	8400	195° 10		ST
		(209)	0435								0		
28	JUL	89	0455	258	264	10.4	4250		8446	8448	195° 10	Alert - High HDP & what does it mean?	ST
			0500	258	260	10.7	4250		8494	8496	210° 10		EC
			0530	258	262	10.8	4260		8542	8544	215° 10		ST
28	JUL	89	0600	258	261	10.1	4260		8591	8593	220° 10		EC
		(209)	0630	258	263	11.1	4260		8637	8643	210° 8		ST
28	JUL	89	0700	258	261	10.5	4260		8684	8691	200° 6		ST
28	JUL	89	0730	258	262	11.4	4260		8734	8740	210° 46	Watch change	
29	JUL	89	0800	258	260.6	10.4	4260		8789	8781	205° 10		ST
		(209)	0830	258	262.4	10.5	4260		8837	8829	210° 10		ST
			0900	258	260.7	10.2	4225		8884	8877	210° 6		ST
			0930								0	(93530)	ST
			0946								0	SAT FIX 1644.931 N 7349.173 W EL40 IT2 CT32	ST
			1000	257.2	261	11.1	4100		8445	8624	185° 8		ST
			1030	257.3	251	10.2	3970		7161	7331	210° 8	ALL	ST
			1100	257.5	251	10.2	2270		6266	6495	225° 9	Previous gravimeter readings in error since 0715 27JUL89	ST
			1105								240° 8		ST
			1130	257	243	10.1	<del>2910</del> 190		6585	6564	240° 8	SAT FIX (105-11) 1643352 N 7403031 W EL45 IT3 CT22	ST
			1135								0		ST
			1145								0	SAT FIX (112-02) 1640754 N 7407431 W EL22 IT2 CT22	ST
			1200	257.8	248.7	10.7	2910		6561	6568	210° 8	WATCH CHANGE	MK
													MK



VESSEL NAME					CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST									
R/V MOANA WAVE					MW 8909		0800	+4	1200	SOUTH OF HAITI	16°38.222	74°14.257	Paul Mann/E. K. K.									
DATE					GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH	MAG.	GRAVIMETER		WIND	COMMENTS	OBSERVER						
DAY	MONTH	YEAR								<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC		GRAVITY	SPRING TENSION	DIRECTION			KNOTS					
28	JUL	89	1	23	0							258.1	249.4	10.7		6550	6546	210°	10	CHANGING PAPER TO RECORDER #1; THEREFORE NO DEPTH	mk	
	(209)		1	23	7															CHANGE PAPER TO REC. #1 (3.5 KHZ)	mk	
			1	30	0							258.4	249.2	10.6	3200		6534	6536	210°	10		mk
			1	33	0							258.7	249.0	10.3	3190		6526	6527	180°	4		BML
			1	40	0							259.0	249.6	10.4	3265		6517	6512	185°	8		mk
			1	43	0							259.4	249.7	10.8	3165		6521	6515	200°	8		BML
			1	43	5																Sat fix (14 35 H) 16°31'827 N 74°40'194 W EL-11 CT-23 ET-3	PM
			1	50	0							258.3	256.9	10.9	3080		6524	6521	180°	7		mk
			1	52	0							258.0	255.9	11.1	2920		6533	6537	190°	6		mk
			1	60	0							257	256.9	11.1	2600		6539	6541	195°	10	Watch Change	ST
			1	63	0							257	258	10.9	2495		6554	6555	180°	6		ST
			1	70	0							257	259	10.7	1875		6555	6554	189°	4	Audio check to corroborate 2/5 mins broadcast	ST
			1	73	0							256	255.1	10.6	1805		6535	6535	195°	6	Sat @ 1701 16°27' 476 N 75°09' 318 W UP	ST
			1	80	0							256	254	11.0	1743		6530	6531	195°	8		
			1	80	4							<del>256</del>	<del>254</del>	<del>11.0</del>	<del>1743</del>		<del>6530</del>	<del>6531</del>	<del>195°</del>	<del>8</del>	Sat FIX 16°27' 242 N, 75°20' 347 W UP	
			1	83	0							254	255	11.2	1695		6525	6526	180°	4		
			1	90	0							194	258	10.6	1615		6518	6518	180°	5	Sat FIX 16°26' 300 N, 75°28' 745 N UP (EL-11) CC	ST
			1	90	7							274									C/L 274 from 258 Rp 8 Knts	ST
			1	93	0							273	271	10.8	1560		6508	6509	145°	6		CC
			1	95	3																R/S to 2 Knts to deploy DROGUE	ST
			1	95	5																DROGUE IN WATER - LAYING OUT DROGUE LINE.	
			1	95	6																I/S TO 3 KTS -	
			2	00	0							273.1	279	10.4	1500		6477	6477	150°	10	WATCH CHANGE	CC
			2	00	4																Resume speed I/S 5 Knts - DROGUE DEPLOYED -	CC
			2	01	2																FISH IN WATER - I/S 6 KTS -	ST

ELECTRONICS LAB WATCH

LOG "A"

COPY NO. 2



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST				
R/V MOANA WAVE				MW 8909		1614	+4	2014	COLOMBIAN BASIN	16° 27	75° 39'	Paul Mang / ROSECRANCE				
DATE				G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR	<input type="checkbox"/> M <input type="checkbox"/> MSEC					GRAVITY	SPRING TENSION		DIRECTION	KNOTS				
23	JUL	89	2014													
(209)			2023													
			2030	273.1	275	7.0	1450	6503	6499	150	7					IRB
			2031													IRB
			2049													
			2051													
			2100	273.1	269	6.9	2125 @ 1375	6506	6504	160	6					IRB
			2117													
			2131	273	269		2180	6225								
			2200	273	269	8.2	1460	6555	6555							
			2204					6560								
			2230	273	265	8.7	1495	6560	160	6						
			2238													
			2300	273	264	9.9	1610	6505	155	5						IRB
			2314	271												
			2330	273	273	9.2	1805	6546	140	6						
29	JUL	89	2000	<del>273</del>	<del>273</del>	9.5	1820									
(210)			0019	274	274	10.0										
			0030	273	271	9.3		6548	6546	150	4					IRB
			0100	273	273	9.6	1750	6535	6532	150	4					IRB

ELECTRONICS LAB WATCH LOG "A"

COPY NO. 2

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VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	2104	+4	0104	COLOMBIAN BASIN	16°28'.645	76°24'.426	Paul Mann

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
27	5	U L 89	0130:	273.4	273.6	9.9	1785m		6572	6572	150° 10		BML
		(210)	0200:	273.3	272.4	9.8			6559	6560	150° 10		BML
			0230:	273.5	275.7	10.1	1955m		6541	6533	150° 12		BML
			0233:										PM
			0242:		275.7	10.0							BML
			0247:										BML
			0254:										BML
			0213:										BML
			0300:	273.6	275.1	9.2	1940m	-	6546	6548	150° 10		BML
			0309:										BML
			0330:	273.7	279.9	9.6	1745m		6558	6560	120° 8		BML
			0400:	273.7	281.0	9.3	1760m	-	6554	6554	130° 4		BML
			0430:	273.8	279.6	9.7	1830		6547	6547	150° 4	Watch Charge	ST
			0449:									Audio Check 2:30	ST
			0500:	273.8	279	9.2	1950		6542	6541	135° 8		ST
			0515:										ST
			0530:	273.8	281	10.1	1880		6548	6548	120° 6		ST
			0606:	274.1	280	9.6	1895		6546	6547	174° 8	0603 Sat Fix 14°30' 253N, 77°10' 80W UP	ST
			0617:									Audio check 2-35 sweep	ST
			0630:	274.2	279	9.7	2020		6511	6541	176° 8		
			0700:	274.3	279	10.4	2155		6519	6518	150° 8		
			0730:	274.3	279	10.2	2055		6527	6528	180° 8		
			0743:				1150						
			0758:										
			0800:	274	279		525				155° 10	audio check A to 1-25 sweep, V. rapid to 1150 down to 525 C/C to ( ) bridge with C	ST



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R/V MOANA WAVE			MW 8909		0404	+4	0804	N. CARAGUAN RISE	N 16° 32'	W 77° 37'	Paul Mann/Rosen

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
29	JUL	89	0804													CIC	
			(210) 0830	275	270				1420			6542	175	8			
			0900	276	271	10.0			1600			6540	543	210	8		
			0921													0912:42	
			0930	276	272	9.6			1750			6524	6523	195	7	Sat. fix N 16 30.67 W 77.50.60 EL18 IT2 CT27	
			1000	276.6	272	9.6			1315			6540	6536	175	6		BRD
			1028		272	10.0								185	10	SAT fix 10:19:15 16 31.046N 78 01.217W EL15 IT2 CT22	CR
			1030	276.6	269	10.0			1500			6536	6535	205	12		CR
			1100	269.0	269	9.9			1380			6554	6550	205	7		CR
			1118													Adjust course to 267°	CR
			1130	268.4	267	9.9			1325			6549	6548	205	9		CR
			1200	268.4	268.1	9.6			1410			6536	6536	215	7	WATCH CHANGE	BWL
			1215													CIC → 265° (Adjust)	
			1230	268.7	267.6	9.4			1420			6526	6525	200	4		BWL
			1300	268.6	263.4	8.1			1430			6526	6527	200	4		BWL
			1223 45													SAT Fix (12:23:45) 16 31 151N 78 21 912W EL29 IT2 CT27	
			1320													Adj/C → 278°	BWL
			1330	282	279	9.0			1415			6528	6529				
			1400	283.5	278.1	9.1			1390			6523	6523	180	5		BWL
			1423													CIC → 281°	BWL
			1412 08													SAT Fix 16.31.632N - 78 38.938W EL31 IT2 CT30	BWL
			1430	284	282	9.7			1430			6527	6529	140	2		BWL
			1500	284	283	9.8			1340			6518	6518	150	2		BWL
			1530	285	284	10.2			1345			6512	6513	130	3		BWL
			1534													Revised Tape of Seamarc II # 29446 (Start) # 29447	BWL



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R/V MOANA WAVE	MW 8909	1134	+4	1534	NICARAGUAN RISE	16 34 38 N	78 52 W	Paul HANN/E. ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER			WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION				
29	JUL	89	1534	282.5									Start Recording Tape 29447 (Seamarc II)	Bmt
			(210)	1600	282.5	282.9	9.9	1345m	6518651	155	10		Audio Check (1-2 @ 1605) Watch Change	blod
			1630	277.9	282.2	10.2	1340 m		6523652	150	8			dd
			1655	330.6	322.2	9.4							Course Change - Wp3	dd
			1700	330.7	331.2	9.4			6516651	12	80	12		dd
			1657	330.6									On new course	dd
			1700	330.7	331.2	9.4	1335 m		6516651	12	80	12		dd
			1730	330.7	331.9	9.5	1325 m		6496649	3	80	12		dd
			1737	331.4					6501650	0	75	17	C/C	dd
			1800	331.6	335.6	9.7	1285 m		6501650	0	75	17		dd
			1830	331.6	338.4	9.5	1260 m		6505650	5	60	14		dd
			1841						6501650	1			C/C → 337	dd
			1900	331.6	337.6	10.1	1270 m		6501650	1	60	18		dd
			1930	331.6	339.2	9.7	1400 m		6504650	4	65	12		dd
			1938						6512651	3	75	18	Audio Check 2-3	dd
			1953										Audio Check 2-3	dd
			2000	331.7	337.7	9.6	1460		6512651	3	75	18		dd
			1958										REC #2 roll A lost data unit 10087	st
			2030	331	338	9.8	1450		6520651	9	75	14		dd
			2100	331	339	9.6	1450		6526652	4	60	14		dd
			2130	331	339	9.7	1445		6532653	3	060	18		dd
			2200	331	336	9.8	1860		6534653	3	070	12		dd
			2230	331	337	9.7	1500		6544654	4	070	12		dd
			2248										adjust course to 333	dd
			2300	330	333	9.7	1720		6526652	0	85	10		dd



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R/V Monna Wave			MW 8909		19.05	+4	23:05	NICARAGUAN Rise	1732N	79 37 W	MANN/ROSENCRAND

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
29	JUL	89	2330	330	333	9.8	1850		6549	6517	060	14	Adjust course to 335	BMY
(210)			2349											
30	JUL	89	0000	330	334	10.3	2175		6551	6552	075	16		
(211)			0030	330	335	10.0	1950		6567	6568	050	18		
			0100	330	333	9.9	2550		6548	6545	060	15		
			0130	331	333	10.1	3650		6535	6532	060	12		
			0200	332	333	10.1	3800		6510	6512	060	12		
			0230	336	334	9.6	4810		6476	6475	060	12		BMY
			0300	270	272	9.9	4820		6514	6521	215	2		
			0330	270	272	9.8	4835		6521	6524	265	2		
			0400	270	267A	10.0	4830		6534	6534	255	4	Watch Change.	dd
			0406						6565	6567			Audio Check 6-7	
			0430	270	264	10.0	4810		6565	6567	260	6		
			0500	270	264	10.0			6621	6623	240	8	Lost sweep - NO depth -	dd
			0516								250	6	Audio 4-5 SEC.	
			0525	268									Adj. Course to 268	
			0530	268	264	9.7			6670	6673	250	6	Lost sweep. - NO depth -	dd
			0554										Audio Check 3-4	
			0600	267.6	268.4	10.1	2770		6662	6661	255	6	Weak Signal	
			0630	266.8	266.9	10.4	4900		6621	6620	270	8		
			0632	266									Adjust course to 266	dd
			0654	258									Adj. course to 258	
			0720	260	258	10.1			6612	6612	280	8		
			0645:12										Sat Fix LAT 18 04 .081N	
			0700										LONG 80 40 .594 W	
													EL: 32 CT: 26 N2	
													R/S → 4 Kts.	



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave			MW 8909		0315	+4	0713	NEAR CAYMAN TROUGH	18 03	80 45	Mann

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
30	JUL	1989	0715										Audio ✓ 5-6 sec	
			0724										I/S 8 kts, Port gun starb cel	
			0730	248	257	8.4	4400m		6598660	2275	10			
			0742										CIC to W.P. 5.	(dd)
			0745	299	292	8.2			66056605	210	4		XNC [BEGIN #1 - Survey]	
			0746										R/S → 5 Gun out cel still in	X
			0753										I/S → 8	9
			0800	299	300	8.0	4470		65926581	210	7		WATCH CHANGE	
			0818										R/S → 4 put guns back in 40 m <sup>3</sup>	CS
			0827										I/S → 8	
			0830	299	300	7.0	4150		65386538	240	5			
			0831										to 8 knots	
			0840										R/S to put in other gun	
			0850										I/S for starboard gun	
			0900	299	300	8.3	4300		66126605	265	4			
			0930	299.7	299	9.5	4250		66176619	255	4		SAT FIX 0902 18 08.614N 80 59.827 W EL 67 17.2 CT 29	CS
			1000	300.2	299.5	9.5	4070		66266627	240	4			
			1030	300.6	299.6	8.4	3260		66496653	260	4			
			1100	301.1	299	8.4	3280		66496650	225	4			
			1130	301.8	299	8.0	1,650		66266623	215	4			
			1140										SAT FIX 113135 18 20.113 81.21417 EL 65 11.3 CT 29	CS
			1200	299.8	298.2	8.4	6110		66346636	270	2			
			1230	301.2	301.6	8.3	<del>4250</del> 3600m		66556658	270	2			
			1300	302.8	299.4	8.2	<del>1635</del> 3285m		66506650	275	2			



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	09:20	+4	13:20	MSC - PAUMAN TROUGH	18°28	-80°37'	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
30	JUL	89	1329											Adj/c 316°	
			(211)	1330	311	305	7.9	4065	66196615	180	2				
			1400	313	316	7.9	5010		65796575	125	4				
			1416						657					CIC	
			1430	054	210	7.6	—		65756578	—				End of Line #1 turning.	
			1500	turning.		7.5			65916598					Change of tape 3.5 kHz. (Begin Sects) BmL	
			1505											CIC → 115°	BmL
			1511	59										XNC → Begin <del>#2</del> Line #2	
			1530		118.8	114.6	8.0	4840	65106504	0	20			SAT Fix 18 27 295 - 81 47 127 EL 22 IT 2 CT 29 BmL	
			1600		118.9	115.0	8.2	4875 (Seismics)	65026501	0	22				BmL
			1630		118.9	114.6	7.9		65166511	350	22				
			1700		119.2	113.9	8.1		65286530	355	24				
			1730		119.2	115.9	7.9	4320	65356536	350	22				
			1744		117.0				6553						
			1751		119									Adj. Course to 117.	
			1800		119.2	120.2	7.8	3756	65536553	345	20			A/Course.	
			1811												
			1822											W Delm 4 → 3	
			1830		118.7	121.9	8.1	<del>2755</del> 3800	65476546	350	18			Gun #13097. Seismics.	(D)
			1833		117		7.9								
			1833												
			1900		119.2	118.1	7.9	4050	65216521	345	20			Audio 4 → 5	
			1930		119.7	119.3	8.0	4190	65186517	345	20				
			2000		120.2	119.4	7.8	3920	65196519	340	22				



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	1608	+4	2008	MCSC - CAYMAN TROUGH	18° 12'	81° 15'	MANN/ROSENCRANTZ

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION	KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION						
30	JUL	89	2008												Adjust course to 126.0	EL
			(211)	2030	120.4	123	6.9	3580	6526	6526		335	22			EL
				2100	119.9	125	7.7	4375	6508	6508		330	22			EL
				2130	119.1	125	7.9	4410	6506	6507		330	22			EL
				2133											Adjust course to 122.0	EL
				2200	119.0	123	7.7	4250	6506	6506		340	23			EL
				2210											Red paper change marker on #2, #4	EL
				2230	119.0	123	7.8	4440	6498	6495		335	22			EL
				2300	119.2	123	7.6	4460	6491	6488		330	24			EL
				2330	119	121	8.1	4400	6481	6474		325	20			EL
				2344											Change paper on #2	EL
31	JUL	89	0000	122	121	7.6	4500		6471	6471		330	22			BWL
			(212)	0004											End of Line #2 CK	BWL
				0020											Change of Paper on Rec #4	BWL
															(Seamarc II + 3.5 kHz)	BWL
				0030	220	216	7.6	4470	6541	6560		260	15		(0020 = Beg Rec #2 (Sidescan + 3.5 kHz))	BWL
				0046											CK → 297° Beg Line #3	BWL
				0100	299	296.6	7.6	3850	6549	6550		120	4			BWL
				0116											The ship lost the steering (why?) R/S	BWL
				0130	299	297	6.2	4025	6543	6541		120	6		Seamarc's fish is too deep (350 m)	BWL
				0177	28										SAT Fix 17°53'590-80°55'086 (EL 23 IT 3 CT 33)	BWL
				0200	299	293.6	8.1	4615	6547	6550		120	10			BWL
				0230	299	294.6	7.5	4390	6575	6580		120	8			BWL
				0238												BWL
				0300	299.4	293.6	7.8		6601	6607					CK → 294°	BWL



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW 8909		23:20	+ 4	03:20	MCSC PAYMAN TROUGH		18° 01'	- 81° 09'	MANN/ROSENCRAWTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
31	JUL	89	0330	299.4	294.6	8.0	4475		6597	6598	140	4		BmL
			(212)											
			* 0350										SAT FIX 02:50: 17°59' 2 81°04.9	BmL
			0400	299.6	296.6	8.6	4290		6601	6601	120	4		EC
			0430	299.7	293.6	7.7	6430		6604	6604	120	4		CC
			0500	299.8	295.9	8.3	3950		6619	6621	150	3		CC
			0525										C/C to 302	CC
			0530	300.0	302.6	8.3	3330		6645	6648	110	2		CC
			0550										C/C to 299	EC
				1	300.9	9.1	2520		6674	6677	135	2		EC
			0606										C/C to 296	EC
			0630	299.3	297.6	9.0	3450		6635	6635	20	2		EC
			0700	300.7	297.7	8.3	4700		6596	6591	180	4		EC
			0730	302.	303.3	8.2	4550		6602	6601	95	4	C/C to 308	EC
			0736										C/C to 311	EC
			0747										C/C	EC
			0754										XNC	EC
			0800	040	207	8.2	<del>4400</del> 3650		6646	6638	300	12	WATCH CHANGE	OB
			0819										C/C TO END LINE 3A	CC
			0825								355	20	BEGIN LINE 4	CC
			0830	119.1	109	7.3	4860		6519	6530	355	20		CC
			0900	119.3	111	8.0	5600		6478	6473	350	19		CC
			0930	119.9	109	8.0	4850		6470	6467	355	16		CC
			0932										SAT FIX(0818) 18 17.158 81 47.722	CC
			0935										ADJ/C 117°	CC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	0540	+4	0940	MCSC CAYMAN TROUGH	18° 13' N	81° 39' W	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			DIRECTION	KNOTS		
31	JUL	89	0947										0		Adj/Course 123°	(92)
			(212)	1000	119.7	124	7.9	4640	64976498	340	15					(95)
			1015										3		Sat Fix 10 05 18 11.532N 81 36.482W EL 29 IT 5 CT 22	(95)
			1030	119.9	123	7.9	3700	65356536	330	14						(95)
			1032												Adj/Course 130°	(90)
			1100	119.6	129	8.1	2120	65946601	330	16						(90)
			1130	121.2	130	8.1	3120	65746574	330	16						(90)
			1142												Sat Fix 10 56 18 09.402N 81 30.594W EL 31 IT 2 CT 28	(90)
			1148												Course adj	(90)
			11												R/S → 4 knts (Switch Gun) →	BML
			1156												I/S → 8 knts IC → 135.2°	BML
			1200	121	136	8.3	3660	65636573	325	18						BML
			1214												c/c → 128°	BML
			1230	121	128.6	7.8	2775	65586556	325	20						BML
			1234												Adj/IC → 123°	BML
			1256												ADJ/IC 126°	BML
			1300	120	126.6	7.8	3000	65386536	330	20						BML
			1323												Change Delay on Rec. #3 and #5 → 3s	BML
			1330	128	119.6	7.8	4390	65016495	330	22						BML
			1341												Change Tape (Seismic) End 30229-	BML
			1346												Begin Tape 30230 (Seismic)	BML
			1400	119.1	127.0	7.3	4500	64786474	325	18						BML
			1410												Adj/IC → 128°	BML
			1430	118.1	129.4	7.8		64756473	315	18						BML
			1500	118.2	127.7	7.8		64596458	330	18					Adj/IC → 128°	BML

PULL SPARKING  
GUN - 2000  
GUN - 2000



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW 8909		1605	+4	15:05	MO SC CAYMAN TROUGH	17°52'	81°02'	MANN/ROSENCRANTZ

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
31	JUL	89	1519:										ADJ/C → 120°	BML
212			1530:	118.4	121.4	7.7	6445		64316424	330	16			BML
			1600:	117.9	122	7.4	3960		64426441	315	14			ST
			1605:										adj/c → 117°	ST
			1608:										ACT DOWN	ST
			1610:										ACT UP	ST
			1622:										Ad/C 115	ST
			1630:	124.	116	07.6	3180		64846487	315	18			ST
			1643:										Ad W/P to 1.0	
			1700:	215.5	169	10.8	0/400		65476519	270	10		O/C to 1.0 5	
			1707:										XNC	
			1724:										Adj/C 300	Line ?
			1730:	143	230	20.8	5		66316349	75	12			ST
			1736:										5/0	
			1800:	297.4	301	10.8	2 1780		66156615	60	12			
			1820:	299.4	302	10.8	4		65736570	60	10		lost bottoming	
			1834:										Δ W/P 3.0	
			1849:										adj/c 303	
			1900:	299	300	17.9	9/150		65446543	100	10		<del>adj/c 300</del>	
			1906:						<del>65446543</del>				adj/c 200	
			1913:										adj/c 296	
			1930:	299.4	296.7	07.4	3600		65566558	60	10			
			2000:										INSTALLING MAGNETOMETER - STREAM.	
			2130:	299.2	295.9	7.9	3300		66406642	70	10		MAGNET FISH - RUNNING? -	(ST)
			2200:	299.1	293	7.9	2920		66606662	80	10			(ST)



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW8909		1800	+4	2200	MCSC CAYMAN TROUGH	18° 01.5 N	81° 28.3 W	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
31	JUL	89	2230	310	2927	7.4			2905	43223	6673	6675		080°	10	Noro Camp. seismic down	
	(212)		2300	300	293	7.9			3160	48221	6657	6661		030°	10	2244 Noro Camp seismic up and running	
			2310													Adj/c 286°	EC
			2330														
			2332													Adj/c 293°	
01	AUG	89	0000	300	2937	6.9			5250	48227	6559	6556		085°	8		BmL
	(213)		0030	299.7	294.4	7.6			5575	48284	6553	6553		080°	6		BmL
			0051													C/C = 108° End of Line #5	BmL
			0055													Steady on line	BmL
			0100	2057	208	7.9			4680	48367	6561	6370		275°	2		BmL
			0124													C/C 127° Begin of Line #6	BmL
			0130	181	127	8.1			4760	48250	6502	6512		330°	18		BmL
Sat fix			0104.26													Sat fix: 01:04.26 18 10.773 / 81.49.318 EL63 IT2 CT34	BmL
			0145													Loss of signal on EPC Recorder (Seism)	BmL
			0200	119	128.4	7.7			5300?	48108	6461	6457		330°	18	EPC/OK. gain (TTK20) 10 → 20	BmL
			0230	119.8	127.9	8.2			5400	48196	6458	6458		330°	18		BmL
			0300	119.6	127.7	8.2			5075	48032	6477	6478		330°	18	Delay 4s (5s → 4s) EPC	BmL
			0321													Adj/c → 123°	
			0330	119.5	124	8.3			3690	47969	6526	6529		330°	18		BmL
			0332													Delay 4s → 3s. EPC	BmL
			0342													Delay 3s → 1s EPC Adj/c → 127°	BmL
			0400	119.5	123.6	7.9			2350	48003	6566	6570		330°	18		EC
			0430	119.4	122.1	7.7			3210	48058	6550	6549		330°	18		EC
			0500	119.4	122.6	8.1			3520	48100	6529	6520		330°	18		EC
			0530	119.4	122.4	7.8				47858	6505	6503		330°	20		EC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V HOANA WAVE	MW8909	0200	+4	0600	HLSC CHAYMAN TROUGH	17°51.6 N	81°20.0 W	HANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
1	AUG	89	0600	119.7	121.1	7.5	3600	47842	64966	494	330	19		EC
			(213) 0630	119.6	120.6	7.4	3900	47811	64786	417	330	20	pressure loss in air pump	EC
			0634			4.0							R/S 4 Kts Port gun out -	
			0650			8.0							I/S 8 Kts Starboard gun in water -	EC
			0700	119.8	122.6	7.5	3650	47872	64716	476	330	18		EC
			0730	120.6	120.2	7.9		47849	64466	442	330	19		EC
			0744											
			0800	121.7	120	8.3	4020	47869	64406	438	340	16	C/c to 120	EC
			0830	122	119.1	8.2	4050	47820	64466	444	345	18	WATCH CHANGE	R
			0900	124.1	120	8.0	?	47916	64636	461	345	18		R
			0930	125	120	7.4	2350	47781	64396	487	350	18		
			0932						65166	515			A/c TO 123° - LAST FIX SHOWS LEFT OF TRACK -	
			1000	122	120	8.0	1680	47659	65166	515				
			1030	120	121	8.2	1450	47669	65316	530	350	22		R
			1100	120	120.4	7.7	1380	47601	65206	525	350	20		
			1130	120	123	8.0	1440	475	65156	512	340	20		
			11510	211									A/c to 211°; END OF LINE 62	Watch Δ (???) PM
			11570	211°									Steady on 211°	See more plotters taken
			1200	218°	210°	8.7	1405	47456	65716	583	270	12	down for repairs in town.	BML
			1211										Change Delay 1s → 3s (EPC - Seismic)	BML
			1212										C/c → 303 Beginning of line #7	BML
			1219										Steady on course 303.	BML
			1225										Seismic tape changed - tape 30232 put on	PM
			1230	-	305°	7.4	1360	67445	6593		110	6	Gravity OFF.	BML
			1235										Rebooting GRAVI-	BML



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	8653	+4	12:53	CAYMAN TROUGH	17° 33'	80° 56'	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
01	AUG	89	1300:	299	306	8.0	1365	47564	6603	6605	090°	12		Bml
			(213) 1312:										c/c → 306°	Bml
			1330:	300	306	7.7	1400	47623	6618	6620	090°	06		Bml
			1400:	300	307	7.8	1575	47625	6627	6630	090°	18		Bml
			1405:										Adj/c → 300°	Bml
			1430:	300	299.1	8.2	1940	47682	6606	6605	090°	04		Bml
			1435:										Adj/c → 296	Bml
			1500:	299.5	298.1	8.4	-	47779	6594	6596	125°	22	Changing Paper for 3.5 kHz	Bml
			1517:										Change Delay EPC Seismic 1 → 35	Bml
			1530:	300.1	295.6	8.7	4040	47881	6540	6534	100°	6		Bml
			1600:	296.1	291.5	8.5	4120	47822	6540	6541	090°	4		Bml
			1622:			8.3							A/C → 300	
			1630:	<del>302.1</del> 301.4		8.3	3450	47685	6575	6580	80°	10		(Ld)
			1654:										A/C → 294	
			1700:	301.8	294.2	8.2	3370	47854	6604	6606	75°	6		
			1736:	303.6	295.4	8.0	3510	47853	6623	6623	80°	4		
			1758:						6595				A/C → 296	
			1800:	306.4	297.7	8.1	3970	<del>4793</del> 4793	6597	6595	60°	6		
			1830:	3040	297.7	7.6	3850	48080	6577	6575	60°	6		
			1840:										AC → 300	
			1849:										CA/C → 208	
			1857:										XNC	
			1901:										A/C → 195	
			1900:	190	194.1	7.8	4280	48099	6534	6532	300°	6		



UNIVERSITY of HAWAII • HAWAII INSTITUTE OF GEOPHYSICS

ELECTRONICS LAB WATCH LOG "A"

COPY NO. 2

PAGE 109



VESSEL NAME					CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST				
R/V MOANA WAVE					BMW8909		1022	+4	0222	CAYMAN TROUGH				17°33'		81°05'		MANN/ROSENCRANTZ				
DATE					GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH	MAG.	GRAVIMETER				WIND		COMMENTS				OBSERVER
DAY	MONTH	YEAR								<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC		GRAVITY		SPRING TENSION		DIRECTION	KNOTS					
02	10	68	9	0230			207	206	8.1	1365	47628	659	666	16		245°	4					BmL
(214)				⊗			300	211	7.8							°		C/C to Beginning of line #9 → 300				BmL
				0253												°		at 17°29.46 81°07.61				
				0300			300.0	304	7.8	1365	47597	659	766	02		65°	15	Steady on 303° - at 17°29.2 81°08.2				BmL
				0323												°		Cse adjust to 300° - at 17°31.4 81°12.25				pm
				0330			299	300.2	8.1	1070	47601	663	166	38		60°	15					
				0347												°		Adj/C 298° at N17°33'2"-W81°15'5"				BmL
Sat fix				0229:51												°		SAT FIX 17°31'36.0 81°06'05.4 EL19 IT3 ET26				BmL
				0400			300.1	293.9	8.4	1570	47617	662	466	26		85°	15					EC
				0416												°		C/C to 302 at 17°35.3 - 81°19.6				EC
				0430			300.0	303.6	8.2	2050	47644	660	266	01		60°	10					EC
				0436												°		A/C to 298 at 17°36.9 - 81°22.4				EC
				0500			300.2	298.6	8.2	2450	47715	659	065	90		60°	12					EC
				0513												°		A/C to 300 at 17°32.7 - 81°22.5				EC
				0530			300.3	300.6	7.8	2870	47824	657	165	69		60°	12	Delay to 3				EC
				0537												°		A/C to 303 at 17°41.4 - 81°32.8				EC
				0600			300.1	303.1	8.4	3030	47957	657	365	71		65°	12					EC
				0630			299.9	302.4	8.4	4080	47987	654	465	45		85°	15					EC
				0700			297.2	297.4	8.3	6075	48023	649	264	87		90°	8	A/C to 296				EC
				0726												°		A/C to 292				EC
				0730			298.8	298.1	8.2		48016	652	265	72		90°	5					EC
				0800			304.6	287	8.1		47915	662	666	33		75°	7	17 53.155 N 81 51.913 W				EC
				0810			42	209	7.2		47927					265°	7	C/C INITIATE TURN 17 53.833 N 81 53.638 W				EC
				0818												°		Adj/c 17 53.528 N 81 54.496 W				EC
				0830			198.8	209	7.2	3320	47921	659	366	00		265°	7					EC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV MOANA WAVE	MW 8909	0430	+4	0830	MCSC CAYMAN TROUGH	17° 53'	81° 55'	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
02	AUG	89	0839											A/c 195° T.	
			(214) 0900	111.0	181	8.0	2820	47820	64646461			275	18		
			0904											START LINE #10.	
			0930	119.8	123	7.4	3100 4500	47728	64886487	310			18	STEEP SLOPES AND DIFFICULT	
			1000	120	124	8.0	4360	47676	64626460			345	18	BOTTOM TRACKING FOR SEAMARC	
			1030	120	124	8.0	5350	47785	64276427			345	18		
			1100	120	122	7.3	4950	47885	64166418			350	18		
			1110											Change # 4 Begin Roll #3 SeamARC + 3.5	
			1130				4830								
			1140	120.7	122	7.8		47974	64146416			320	20		
			1200	121	121.7	8.2	4500	47945	64176414			325	20		
			1210											Change Delay → 3s (EPC Recorder)	
			1230	121.6	121.0	8.4	3720	47858	64426447			330	22		
			1252											Adj/c → 126° at 17°40'8 - 81°38'-3	
			1300	121.0	124.5	8.2	2725	47805	64616465			330	22		
			SAT Fix 1240	46										SAT Fix 12:40:46 - 17°41'346 81°39'390 - EL 44 IT2 CT33	
			1330	120.9	125.0	8.3	2730	47744	64716474			330	22		
			1400	120.8	126.0	8.0	2485	47698	64826482			330	24		
			1430	120.3	125.0	7.9	2330	47663	64976498			330	22		
			1440											Adj/c 124° at 17°34'5 - 81°28'8	
			1500	117.5	124.6	7.8	2000	47624	65016501			330	26		
			1508											Adj/c 120° at 17°33'2 - 81°26'8	
			SAT Fix 1429	21										SAT Fix 14:29:21 - 17°35'43 - 81°29'43 EL20113 CT 26	
			1515											Adj/c → 117° at 17°32'6 - 81°25'6	
			1530	117.7	115.6	7.6	1560	47599	65136514			330	24		



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	1135	+4	1535	PAYMAN TROUGH	17°31'9	81°23'8	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
02	AUG	89	1533										EPC Recorder Out (Steve)	Rmy
			1549										" " " "	Rmy
			1600	119.6	115.9	7.2	1415	47614	6516	6516	330	26		Rmy
			1616										A/c to 108 at 17°29.2 - 81°19.3	EC
			1630	116.5	109.1	7.7	1110	47624			330	20		EC
			1647										A/c to 115 at 17°28.1 - 81°16.1	EC
			1651										C/c at 17°27.6 - 81°15.1 // end line #10	EC
			1657										C/c to 905 at 17°28.8 - 81°13.1	EC
			1700	014.2	205.4	8.9	1350	47582	6575	6581	270	16		EC
			1715										A/c to 200 at 17°24.9 - 81°16.5	EC
			1725										C/c at 17°23.7 - 81°17.3	EC
			1730	102.0	277.9	8.5	1320	47491	6574	6565	92	10		EC
			1732										XNC to 312 at 17°23.7 - 81°18.4 // begin line #11	EC
			1734										R/S to 4 kts	EC
			1745										A/c to 305 at 17°24.4 - 81°19.4 I/S to 8 kts	EC
			1738										Self Fix 17°23.8 - 81°18.4	EC
			1738										C/c to 302 at 17°24.9 - 81°20.1	EC
			1800	300.0	305.4	7.8	1300	47553	6590	6593	90	12		EC
			1830	300.0	300.9	8.1	1140	47578	6612	6615	90	10		EC
			1900	300.0	300.4	8.1	1700	47622	6609	6610	90	10		EC
			1923										C/c to 304 at 17°31.6 - 81°32.3	EC
			1930	300.1	304.5	7.8	2250	47663	6583	6582	90	10		EC
			1937										A/c to 306 at 17°32.6 - 81°34.2	EC
			2000	300.2	305	7.6	2700	47702	6567	6566	90	10		(P)
			2024										Adj/c to 299°	(D)



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave	MW8909	2030	+4	2430	CAYMAN TROUGH	17° 34'	81° 36'	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
02	AUG	89	2030:	300.0	300	7.1	2720	47758	6558	6559	90	10		(D)
			(214) 43:										Adj/c 288°	(D)
			2100:	300.0	300	7.8	2800	47812	6550	6550	90	12		
			2105:										Adj/c 286	
			2117:										"PANSER" CRASH -	
			2128:										A/c 283.	
			2130:	300.	288	8.3	3670	47324	6545	6546	085	12		
			2141:										Adj/c 295°	(D)
			2157:										Adj/c 300°	(D)
			2200:	300	301	7.3	4650	47670	6539	6532	085	10		
			2230:	300	300	7.8	4650	47811	6545	6546	90	10		
			2300:	297	297	7.7	5200	47848	6554	6555	90	10		
			2302:										2nd line 11	EOL11
			2307:										heading 204	
			2330:	127	208	7.0	5100	47855	6575	6574	205	8		
			2334:										adjust to 190	
			2347:										course change to 170	
			2353:										start line 12	SOL12
03	AUG	89	0000:	119.8	121.2	8.1	6800	47763	6439	6442	325	20		
			(215) 0008:										Cac Adj 123° at 17°46'1 -82°05'6	Bml
			0020:										A/c → 170° at 17°43'4 -82°03'8	Bml
			0030:	119.9	119.2	8.1	6400	47742	6438	6438	360	18		
			0017:										SAT FIX (TRANSIT) 17°43.6 82°04.1	Bm
			0058:										Change Delay 5 → 3 s (EPC Rec. Seismic)	Bml
			0100:	170.	171.7	8.6	3900	47777	6440	6440	360	20		Bml



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW 8909		21:05	+4	01:05	CAYMAN TROUGH	17°40'7" N	81°58'7" W	PIANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
03	AUG	89	0050											0	SAT FIX (TRANSIT) : 17°41.5 82:00.9	pm
		(215)	0113											0	Adjust use to 124°	
			0130	119.4	124.2	8.2	3440m	47799	6451	6453	330	18				
			0200	119.8	124.8	7.9	2770	47784	6463	6463	330	20				
			0217											0	Adj/c 127° at 17°36'9 - 81°51'7	
			0207											0	SAT FIX (TRANSIT) : 17°37.6 81°52.7	pm
			0230	120.1	126.0	8.2	2640	47787	6472	6470	330	22				Bml
			0235											0	Change gain on Rec #3. (CPC Seismic)	Bml
			0300	119.5	128.0	8.0	2665	47743	6475	6475	330	18				
			0316											0	Adj/c → 120° at 17°32'9 - 81°46'10	Bml
			0330	118.5	119.2	8.5	2640	47650	6467	6466	330	20				
			<del>0400</del>											0	Delay 1 s on CPC Recorder.	
			0357											0	A/C → 118°	
			0352											0		
			0400	118.7	117.6	8.4	2400	47635	6475	6476	330	18				
			0430	116.6	117.7	8.3	1950	47589	6489	6491	325	16				
			0500	119.3	115.6	8.6	1420	47537	6508	6509	325	18			Audio Check 1-2 sec.	dd
			0528											0	A/C → 115	
			0530	115.8	112.7	8.3	1075	47465	6521	6519	330	18				
			0600	116.3	111.2	7.8	1180	47444	6498	6498	330	18				
			0630	118.0	111.2	7.7	1255	47400	6484	6481	330	20				dd
			0649					47400						0	A/C → 120	
			0700	119.5	120.4	7.8	<del>1275</del>	<del>47415</del>	6476	6475	325	18				
			0706	<del>120.4</del>	<del>8.0</del>						320	20			A/C → 130 17°21'00 / 81°23'27	
			0730	102.6	130.4	8.0	1295	47370	6466	6465	320	20				
			0736											0	A/C → 152 171874 82083	

EOL 12



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave			MW 8909		0337	+4	0737	Cayman Trough	17 18 60	81 20 74	Mann

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
03	AUG	89	0746													TURN to 210 1717.71 81.20.39	
(215)			0800	215.5	205	8.0		1240	47416	6531	6546	265	10	075136		SAT FIX 17 18.178N 81 18.741W EL 17 173 CT24	(B)
			0824													CC Turn	(B)
			0830	299.8	305	8.1		1160	47494	6554	6546	70	11			XNC LINE 13 Begins	(B)
			0831														SOL 13
			0852														
			0900	299	300	8.2		1220	47416	6555	6540	90	9				
			*0912													R/S	
			0920													adj. + correct 788	
			0922													I/S	
			0927														
			0930	299.6	307	7.9		1200	47413	6577	6562	100	6	090530		SAT FIX 17 17.779 81 26.286 EL 18 172 CT 23	(B)
			*														
			1000	299.7		8.2		1100	47419	6596	6596	95	4	093813		SAT FIX 17 19.903 81 30.902 EL 40 172 CT 29	(B)
			1004													ADJUST COURSETTE (too)	
			1030	299.6	298	8.2		1220	47438					75	8		
			*1044													Adj/C 302°	(B)
			1100	299.1	303	8.2		1750	47555	6546	6545	85	6				(B)
			1130	299.0	303	8.5		2400	47635	6585	6582	90	6	105505		SAT FIX 17 25.920 81 43.355 EL 47 172 CT 30	(B)
			1134													Adj/C 298°	(B)
			1200	298.7	298.2	8.7		2580	47678	6588	6589	92	4				BML
			1230	300.7	301.6	8.7		2750	47770	6578	6576	90	2			Adj/C → 301 at 17°33'6 - 81°56'9	BML
			1300	300.7	302.4	8.6		3500	47768	6558	6556	95	4				BML
			Sat fix *1217:53														
			1230	300.9	301.1	8.5			47783	6551	6550	95	6			SAT FIX 12:17:53 - N17°32'673 - W 81°54'924 EL 79172 CT 31	BML



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	0943	+4	1343	PAYMAN TROUGH	17°39'9	82°08'2	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
03	AUG	89	1400:	301	3031	8.3	4580	47775	6535	6533	90°	4		RmL
			(215) * 1406:20										SAT FIX 14:06:20 17°47'00.5 82°11'57.8 EL311T3CT30	RmL
			1430:	299.9	301.0	7.8	5380	47797	6520	6518	95°	4		RmL
			1456:										A/S → 297° at 17°46'3 82°18.9	RmL
			1500:	298.4	297.8	8.4	4380	47900	6545	6546	90°	4		RmL
			1520:	q/c → 209									End of Line #13 17°48'3 - 82°22.8 q/c 209	RmL
			1521:										Change ACT Plotter (Switch with other one)	RmL
			1527:		209								Steady on 209°	RmL
			* 1530:	204.1	209	7.2	5160	47931	6540	6548	275°	10		RmL
			1549:										A/C 190° at 17°46'10.1 82°22.337	RmL
			* 1529:38										SAT FIX 17°47'9.53 - 82°23'47.6 EL402T3 CT32	RmL
			1608:11	163.9	161	07.3	5550	47952	6489	6485	30°	12	adj/c 120° 17°44'48 82 26.171	
			1608:55										17°43.8 82°25'53 510	
			1611:										510 course 115°	
			1621:										adj/c 118 17°43'52.8 82°24'9.34	
			1630:25	119.8	119.0	08.1	5600	47870	6412	6402	340°	18		
			1700:29	120.4	119.6	07.3	5090	47816	6417	6419	345°	16		
			1730:11	120.1	119.6	07.5	4375	47758	6431	6433	345°	16	Adj 3.5 roll between 1708 → 1721	
			1800:02	120.1	119.9	07.6	3100	47841	6448	6450	340°	16	17°38'52.4 82°15'12.2	
			1822:										adj/c 122 1737'381, 82°18'02.9	
			1836:05	120.1	120.7	07.7	3700	47770	6458	6459	330°	14		
			1845:										adj/c 119° 17°36'00.8 82°11'12.0	
			1900:07	119.6	118.6	07.7	3430	47719	6464	6465	340°	16		
			1930:06	118.7	118.9	07.8	3100	47732	6470	6471	335°	16		
			2000:	119	119	7.6	2840m	47778	6474	6474	340°	14		



VESSEL NAME					CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST			
R/V MOANA WAVE					MU8909		1630	+4	2030	CAYMAN TROUGH			MANN/ROSENTHAL			
DATE					GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH	MAG.	GRAVIMETER		WIND	COMMENTS	OBSERVER
DAY	MONTH	YEAR							<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC			GRAVITY	SPRING TENSION	DIRECTION		
03	06	87	20	30	111.7	119	8.2	2700	47752	6475	476	375	20			
	21	5	21	00	119.7	119	8.2	2620	47633	6483	484	330	15			
			21	30	119.7	121	8.2	2540	47559	6487	6489	370	17			
			22	00	119.7	123	8.4	1770	47514	6494	6495	375	14			
			22	30	119.2	123	8.4	1770	47472	6492	6491	330	15			
			22	57								375	15	Adj Course 115°		
			23	00	119	115	8.0	1335	47429	6490	6438	345	13			
			23	30	118	114	8.0	1127	47358	6489	6490	330	15			
			23	40											turn to 210° and line 14	EOL14
			23	47											at course to next point - 210° -	
04	06	87	00	00	197	210	8.9	1075	47439	6568	6587	270	2			
	(215)		00	09											CIC → 300° at 17°16'2 - 81°438	Bml
	Sat/fix		00	55	37										SATFIX 17°17'864 - 81°42'322	Bml
			00	15											steady on line #15 17°16'2 - 81°45'0	Bml
			00	20											A/C → 304° at 17°16'437 - 81°45'422 (mo GPS)	Bml
			00	30	301	303	9.3	1190	47387	6579	6580	60	10			
			00	00	300.1	304	8.5	1590	47559	6579	6579	60	6			
			01	18											Change dialette of gravity Rec. (Start #6)	Bml
			01	30	300.1	303.1	8.9	1565	47457	6590	6592	60	4			
			01	58											A/C → 301 at 17°3'640 - 81°58'886	Bml
			02	00	300.3	302	8.4	1830	47557	6597	6598	60	6			
			02	11											Change delay from 4 to 2 sec on CPC Seismic Rec	Bml
			02	30	300.3	300.9	8.9	2400	47657	6594	6593	60	8			
			02	31											Change delay from 4 to 1 sec on CPC Recorder	Bml
			03	00	299.9	302.2	8.9		47702	6600	6602	60	10			



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	2306	+4	0305	CAYMAN TROUGH	17°29.731	-82°09.297	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
04	AUG	89	0319:										A/C → 304° at 17°30'615 - 82°11' 135	AmL
		216	0330:	3002	305.2	8.3	2730	47702	65826	582	060°	10		BmL
			0343:										Change delay from 12 → 35	BmL
			0400:	3001	304.6	8.0	3150	47758	65666	564	060°	12		
			0430:	299.9	300.4	8.1	3245	47792	65596	559	035°	8		
			0500:	300.5	298.0	8.0	4475	47807	65336	530	035°	10		
			0508:										17°39'524, 82°27.389 Adj/C 302°	
			0530:	300.9	302.4	7.9	5300	47916	65146	511	035°	10		
			0600:	301.6	300.0	8.1	5710	47837	65076	506	035°	8		
			0617:										17°44'.933, 82°37'.515 adj/c 305°	
			0630:	301.6	301.0	8.0	5710	47849	65036	503	028°	8		
			0700:	300.5	303.4	7.7	5710	47948	65076	507	010°	8		
			0709:										17 50.282, 82 46 811, C/G 295.1	
			0730:	299.3	292.0	7.7		48001	65306	532				EOL 15
			0735:										adj/c 17°50' 179, 82°47'.623 C/G 213	
			0755:										SAT FIX (0655) 17° 47'433 82° 42'134 24 112 121	C
			0801:										SAT TURN TO LEFT TO 120° → ON TO #16	
			0806:										COMPLETED TURN ONTO LINE #16, AZ 120° -	SOL 16
			0830:	120	117	6.7	5715	47923	6396	6387	345°	10		R
			0832:										A/c 120 -	
			0900:	120	122	8.2	5725	47960	6387	6385	350°	7		
			0930:	120	121	8.6	5720	47919	6386	6384	355°	8		
			0900:	119	119	8.0	5280	47776	6403	6402	350°	6		
			1004:								000°	4	A/c 115.	
			1030:	120	113	8.3	4750	47786	6416	6417	000°	4		



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST	
R/V MOANA WAVE				MW8909		0633	+4	1033	CAYMAN TROUGH				17° 38'		82° 34'		MANN/ROSENKRANTZ	
DATE				GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR						<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC			GRAVITY	SPRING TENSION		DIRECTION	KNOTS			
04	AUG	89	10	34	120	110									0		A/C 110°	
			216	10	53										0		A/C 115°	
				11	00	120	115	8.3	3860	47392	66	47	66	49	355	4		
				11	30	120	119	8.1	3295	47848	64	67	64	69	350	5		
				12	00	120.0	117.7	8.1	3170	47789	64	72	64	67	350	6		BgmL
				12	30	120.0	119.6	8.4	2625	47719	64	77	64	78	0°	4		
				13	00	120.0	117.6	8.6	2600	47621	64	84	64	85	0	4	Change paper on Rec # 7 - (Scissors Raytheon.)	BgmL
				13	16										0		A/C 116° at 17° 32' 192 - 82° 17' 710	BgmL
				13	30	120.0	117.7	8.2	2130	47581	65	00	65	02	10	4		
Sat Fix				13	43										0		SAT Fix 17° 27.21 - 82° 14.50	BgmL
				14	00	120	117.7		1770	47568	65	15	65	16	0	4	Delay 25 → 15 on EPC Rec.	
				14	30	120	116.4	8.5	1685	47546	65	18	65	19	10	4		
				15	00	120	115.9	8.3	1620	47499	65	05	65	05	0			
				15	18	120	116								0		A/C → 120° at 17° 21' 991 - 82° 05' 025	BgmL
				15	30	120	120.2	8.5	1580	47451	64	93	64	93	10	2		
Sat Fix				15	06										0		SAT FIX 17° 22.9 82° 06.2	
				16	00	120	120.7	8.7	1360	47596	64	84	64	83	300	2		
				16	30	111.9	120.1	7.4	1290	47327	64	77	64	77	300	5		EC
				16	54										0		c/c to 215 End of hr #16	EOL 16 EC
				17	00	225.9	217.7	7.1	1290	47372	65	23	65	11	085	3		EC
				17	30	271.9	228.6	8.0	1330	47543	65	40	65	43	060	5	c/c to 300 Begin hr #17	SOL 17 EC
				18	00	300.1	299.9	7.8	1250	47463	65	65	65	65	030	10		EC
				18	30	299.1	297.1	8.3	1670	47384	65	74	65	76	030	10	a/c 298	EC
				18	43										0		c/c to 282	EC
				19	00	299.8	290.7	8.2	1750	47336	65	86	65	87	045	10		EC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	HW89 09	1504	+4	1904	CAYMAN TROUGH	17° 17'	82° 08'	HANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
04	AUG	89	1903											0		C/c to 298 at 17° 17.7 - 82° 08.0	EC
			1919											0		C/c to 301 at 17° 18.7 - 82° 10.2	EC
			1930	300.2	302.4	9.3			2060	47328	65906590	030	17			C/c to 303 at 17° 20.5 - 82° 13.0	EC
			1940											0			EC
			2000	400.4	305	8.3			2220	47416	65896589	30	15				(C)
			2030	300.4	305	8.5			2170	47521	65896570	20	16				(H)
			2032											0		COURSE to 307 17 24.377 82 20.585	
														0			
														0		SATFIX 2021 - 17° 23.51'	
														0		82° 18.49'	
			2100	300.5		8.6			2080	47583	65866584	35	15				(C)
			2108											0		Adjust course 304	
			2130	300.0	304	7.8			2420	47662	65856583	40	14				(B)
			2150											0		change paper on recorder 6	(S)
			2200	300.2	305	7.4			2825	47730	65766575	40	14				(C)
			2221											0		change paper on recorder 4	(B)
			2230	300.2	307	7.4			3455	47744	65556554	40	12				(B)
			2233											0		Adj/c 308°	
			2300	300	309	7.9			4800	47724	65126509	35	12				
			2330	299.9	305	8.2			5500	47769	64816479	25	10				
05	AUG	89	0000	299.4	307	8.5			5720	47865	64716472	10	10				Bml
			(217)	0030	300.1	307.6			5730	47938	64756476	8	18				Bml
			0100	300	307.7	8.3			5690	48000	64966498	30	14				Bml
			0130	298.7	308.2	7.8			5370	48002	65126513	30	12				Bml
			0200	297.1	307.1	7.8			5640	48013	65076507	30	12				



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	2206	+4	0206	CAYMAN TROUGH	17°50'S <sub>41</sub>	83°06'35	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			DIRECTION	KNOTS		
05	AUG	89	0230	3010	3077	7.8	5655	48065	65056	504	30	10				Bml
(217)			0259												C/C → 206 at 17°54'079/83°13'594	Bml
			0300	300	291	8.0	5600	48114	6520	6527	30	10			END OF LINE # 18 17 EOL 17	
			0307												S/C → 206 at 17°53'787/83°14'485	Bml
			0330	206	206	8.1	5610	48011	64936	489	330	2				
			0332												C/C → 113° at 17°50'525 83°16'401	Bml
			0338												A/C → 113° 17°49'780 83°16'166	Bml
															Beginning of line # 17 18 SOL 18	
			0400	119.9	113.6	8.2	5635	48004	63916	391	320	10				
			0430	1200	113.6	8.2	5670	48000	63956	394	320	10				
			0437												A/C 115 17°45.63 83°08.59	
			0500	119.8	114.1	8.1	5696	47921	63946	394	330	8				
			0530	120.2	112.6	7.9	5700	47842	63846	389	325	8				
			0600	120.2	115.6	7.9	5720	47834	63796	379	330	7				
			0630	120.2	116.2	7.7	5720	47870	63676	367	320	6				
			0643	1					63866	356					A/C 113 17°38.62 82°57.14	
			0706	119.4	110.4	8.0	5720	47818	63566	356	320	6				
			0711												A/C 111 17°37.27 82°54.26	
			0730	119.6	111.4	8.0	5540	47774	63616	362	335	8				
			0800	119.9	112	8.5	5350	47754	63816	382	200	7				
			0824												A/C 115 17°33.338 82°46.173	
			0830	120	115	8.1	3900	47690	64216	425	330	8				
			0859												SAT FIX 17 34.213 82°47.835 cl 28 if 20175CG	
			0900	112.8	117	7.7		47649	64506	452	335	7				
			0913												A/C 1000 120. 17°30.47 82°41.264	



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave				MW 8909		5.16	+4	9:16	CAIMAN TROUGH				17°30'	82°40'	MANN
DATE				GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR	GRAVITY							SPRING TENSION	DIRECTION	KNOTS			
05A	05	89	0930	119.4	119	7.7	3190	47640	64716	472	330	6	CHANGED DISC IN GRAVIMETER - #6 OUT. #7 IN -		
(217)			1000	118.4		7.5	2640	47643	64976	499	330	6			
			1012												



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	1030	+4	1430	CAYMAN TROUGH	17°12'48	82°18'02	NANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC.	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
05	AUG	89	1430	300	309	8.8	1050	47692	6601	6604	30	12		BmL
	(217)		1455	300	300								Adj/c 300° at N17°16.72-W82°21'24	BmL
			1500	299.6	301.9	8.9	1685	47543	6592	6590	28	12		BmL
			1530	299.8	300.1	8.5	1685	47510	6594	6595	30	10		BmL
			1531	-	-		-	-	-	-	-	-	Adj/c 295° at N17°17'19-W82°26'70	BmL
			1547	-	-		-	-	-	-	-	-	Adj/c 305° at N17°18'48-W82°26'66	BmL
			1555										Change Gravity floppy (Begin #8)	BmL
			1600	300	305	7.9	1920	47486	6586	6583	28	12		BmL
			1630	300.2	300.70	7.7	2000	47514	6589	6589	24	12		ST
			1633										a/c 317° 17° 21.40, 82° 35.22	ST
			1700	299.7	307.11	8.0	2130	47536	6596	6597	30	10		ST
			1705	<del>300.2</del>	<del>300.70</del>	<del>8.0</del>		<del>47538</del>	<del>6598</del>	<del>6599</del>	<del>30</del>	<del>12</del>	a/c 304° 17° 23.87, 82° 39.02	ST
			1730	300.2	301.61	8.5	2340	47556	6598	6599	10	12		ST
			1735			4.0							R/S → 4kts.	ST
			1750			8.0							I/S → 8kts A'd gens port in / strtd out	ST
			1800	300.4	306.60	8.3	2500	47622	6584	6584	10	12		ST
			1805										a/c 307° 17° 27' 51, 82° 44.48	ST
			1816										a/c 319° 17° 28.19, 82° 48.52	ST
			1832	300.7	309.9	7.7	3225	47637	6554	6551	10	10		ST
			1839										a/c 325 17° 29.96 82° 51.48	ST
			1853										a/c 306 17° 31.42, 82° 53.022	ST
			1900	300.1	303.9	6.7	4250	47707	6508	6500	5	10		ST
			1930	300.0	304.07	6.4	4770	47746	6461	6456	5	12		ST
			2000	300.1	304.4	7.6	5725	47762	6448	6446	00	12		CB
			2030	299.5	304.4	7.8	5725	47790	6457	6452	010	11		



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW8909	16:57	+4	20:57	Payman TROUGH	17°40'	83°09	MANN

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER		
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
05	AUG	89	2100	299.6	305	7.4	5700	47864	6467	6468	015	12		OG		
			(217)	2130	3008	333	7.2	5703	47891	6473	6474	010	11	A/c 308° -		
			2139											A/c 6312 17 42 971 83 14.351 (superbank)		
			2200	301	313	7.3	5670	47924	6483	6484	15	12				
			2230	301.0	309	7.3	5140	47924	6505	6507	10	11				
			2300	300.5	306	7.4	5340	47989	6521	6521	25	12				
			2314											END line 19 c/c 205 -	EOL 19	
			2321	205	203	7.7	48015	48015	6509	6509	50	1	XNC 205°			
			2330	205	203	7.7	4875	48015	6509	6509	50	1				
			2349											XNC 113		
			2355	119	114.7	7.5	48044	48044	6418	6413	325	10	steady on 113 — start line #20	SOL 20	MK	
06	AUG	89	0000	119	114.7	7.5	5640	48044	6418	6413	325	10			MK	
			(218)	0030	119	113.4	8.4	5640	47999	6402	6401	330	10			BM
			0034											A/c 111° at N 17°42'30 - W 83°16'78	BM	
			0100	119.9	113.4	8.2	5705	47896	6382	6380	330	12	wind meter broken for last hour?			
			0136	119.9	113.7	8.3	5710	47869	6365	6364	330	10				
			0151											Change gain on EPC Recorders (5 → 10)	BM	
			0155											A/c 110° at N 17°38'79 - W 83°15'02	BM	
			0200	120.2	111.7	8.1	5710	47887	6353	6352	330	10			BM	
			0200											changed seismic tape		
			0223											A/c → 112° at N 17°34'34 W 83°14'57	BM	
			0230	120.6	119.6	7.8	5710	47822	6353	6354				A/c → 117° at 17°36'92 83°14'43	BM	
			0300	120.6	118.1	7.9	5710	47763	6353	6353	330	10			BM	
			0330	120.4	117.6	7.9	5750	47716	6352	6353	330	10			BM	
Selfix			0245	01									SAT.Fix 02:45:01 / 17°36'60 - 83°10'72	EL 10 IT 2 CT 27		



VESEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	23 <sup>36</sup>	+4	0336	CAYMAN TROUGH	17°32'19	83°12'55	MANN/ROSENCRANTZ

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
06	AUG	89	0400	118.9	120	7.9	3760	47687	6360	6361		330	10		Bml
			(218)												
			0428											c/c to 114 at 17°29.9 - 83°00.7	EC
			0430	115.1	119.6	8.1	4200	47655	6396	6398		330	10		EC
			0500	116.6	119.3	7.9	3350	47642	6448	6453		330	8		EC
			0506											c/c to 110 at 17°27.5 - 82°56.7	EC
			0530	109.7	119.6	7.7	2580	47649	6481	6484		330	8		EC
			0600	112.4	120.2	8.1	2330	47641	6488	6483		330	8	c/c to 114 at 17°24.3 - 82°50.9	EC
			0630	114.4	120.1	8.3	2250	47612	6496	6497		330	7		EC
			0700	115.7	120.5	8.3	2180	47595	6491	6492		340	5		EC
			0730	116.4	120.5	8.5	2180	47505	6482	6482		355	5		EC
			0800	118.9	115	8.1	1670	47509	6495	6496		0	11		
			0830	115.4	117	7.7	1470	47684	6500	6501		0	10		
			0923											0900 depth = 1690m	
			0930	67.2	113	7.7	1430	47651	6481	6482		005	11	SAT FIX 9:11 17 12.171 82 30.768	EC
			0930											LL-63 11 2 CT 30	
			0930											C/C END LINE 20	EOL 20
			0942											XOC 220°	
			0958											INC	
			1000			8.1	1240	47648	6558	6576		320	4	Turning	
			1004											START LINE 21 - 291°	SOL 21
			1030	300	296	8.4	1270m	47700	6585	6587		325	4		
			1039											Adj C / 305°	
			1047											Adj C / 315°	
			1100	302.8	315	8.6	1340	47718	6583	6581		330	4		
			1112		303										
			1130	300	303	8.7	1463	47647	6596	6597		330	5		

SAT →

Bridge reported @ 9:27

17 11.96  
82 30.26

0900 depth = 1690m

SAT FIX 9:11 17 12.171 82 30.768

LL-63 11 2 CT 30

C/C END LINE 20

SIGHT

EOL 20

XOC 220°

INC

Turning

START LINE 21 - 291°

SOL 21

Adj C / 305°

Adj C / 315°

1058 - SAT - { 17 10.55'  
82 36 41'

A/c 308°



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE				MH8909		0800	+4	1200	CAYMAN TROUGH				17°12'37	83°06'71	MANN/ROSE NCNANTZ
DATE			GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR								GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
06	AUG	89	17	33:45	-	-		-	-	-	-	-	0	SAT FIX N17°13'44 - W82°41'23 EL17 IT2 CT27	BML
			1200		300.2	307.9	8.2	2050	47506	6579	6576	000	8		BML
			1230		299.9	309.2	8.0	2060	47502	6582	6583	335	8		BML
			1300		299.5	307.4	7.6	2030	47585	6590	6592	350	6		BML
			1330		299.1	307.2	8.6	2300	47647	6594	6594	350	6		BML
			1400		298.7	307.4	8.5	2750	47657	6583	6582	350	6		BML
			1430		305.1	309.2	8.4	3910	47648	6531	6526	330	8		BML
			1431		-	-		-	-	-	-	-	0	A/C → 306° at N17°26'19 - W83°11'06	BML
Sat Fix			*1419	24	-	-		-	-	-	-	-	0	SAT FIX 14:19:24 N17°19'278 - W82°01'234 EL17 IT4 CT17	BML
			1456		-	-		-	-	-	-	-	0	A/C → 304° at N17°28'44 - W83°11'74	BML
			1500		297.8	305.6	8.5	<del>47697</del> 5720	47697	6476	6469	330	4	Change Delay to 5s } dropped off a steep wall and	BML
			1509		-	-		-	-	-	-	-	0	Change Delay to 6s. } was very hard to track w/scatter	BML
			1513		-	-		-	-	-	-	-	0	Change Tape Seismic -	BML
			1530		296.7	306.2	8.7	5730	47747	6453	6450	330	4	A/C → 306°	BML
			1600		295	306.6	8.8	5710	47776	6452	6452	330	4		BML
			1623										0	A/C 308° 17°39'042, 83°19'145	X
			1630		292.6	305.9	8.5	5710	47862	6457	6458	340	8		X
			1700		291.7	305.7	8.4	5705	47924	6470	6471	340	9		87
			1730		300.9	309.6	8.4	5680	47948	6487	6489	345	9		8
			1731										0	17°40'65, 83°30'27 a/c 310°	X
			175										0	a/c 305° 17°44'23, 83°33'51	X
			1800		295.5	305.0	8.7	5650	47981	6503	6510	345	9		8
			1815										0	a/c 298° 17°45'97, 83°36'36	X
			1829										0	a/c 270 17°47'118, 83°39'123	X
			1830		297.3	282.2	08.1	5510	47999	6530	6535	530	10		X



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	02:50	+4	1850	CAYMAN TAIL	17° 47.47	83° 42.27	MANN/ROSENKRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
06	AUG	87	1848										0		a/c 298 17° 47.47, 83° 42.27	8
(218)			1852										0		XNC 417 817.67, 83° 42.75	8
			1900	301.4	301.6	8.2	5500	48017	65276526		345	8	0			8
			1922										0		302° a/c 17° 50.23, 83° 46.94	8
			1934	303.5	303.8	8.7	5500	48117	65266524		330	8	0			8
			1934										0		C/c 210° 17° 51.171, 83° 48.814 EOL 21	8
			2000	209.8	207	8.2	5500	48054	64966490		350	9	0			8
			2005										0		XNC	8
			2012										0		LINE 22 Begins	8
			2030	119.8	117	8.5	5560	47979	64126396		10	10	0			8
			2033										0		SAT FIX 1924 80 17° 50.482 83° 47.476 EL 14 IT 2 CT 25	8
			2100	119.8	114	8.7		47968	64066406		10	9	0			8
			2113										0		A/c 180° +25°	8
			2130	119.9	124	8.3	5620 47928	47928	64076406		10	7	0			8
			2133										0		SAT FIX 2038 17° 45.441 83° 48.059 LL 59 IT 2 CT 31	8
			2158										0		SAT FIX 2124 17° 42.702 83° 42.793 EL 30 IT 2 CT 31	8
			2200	119.9	123	8.1	5660	47889	64016400		5	9	0			8
			2214										0		Adj/c to 119	8
			2228										0		Start newspaper for recorder #6	8
			2230	119.8	120	8.1	5670	47906	63906390		20	11	0			8
			2300	119.7	119	8.3	5680	47889	63846384		20	10	0			8
			2309										0		Adj/c 117	8
			2312										0		17 36.140 83 31.391 229 IT 2 CT 28	8
			2330	119.7	115	8.2	5690	47860	63866386		050	8	0			8
07	AUG	89	0000	119.5	116.2	8.1	5080	47814	63866387		010	10	0			8



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE				MW 8909		2005	+4	0005	CAYMAN TROUGH		17°34'31	83°13'63	MMW/ROSENCRANTZ

  

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
07	AUG	89	0030	119.5	114.1	7.9	4710	47775	63856	385	5°	12		Bml
(219)	P	0044		-	-		-	-	-	-	-°	-	A/C → 112° 17°31'72 83°12'82	Bml
SAT	Fix	*0035	27	-	-		-	-	-	-	-°	-	SAT Fix 17°31'259 - 83°22'824 EL49 IT2 CT32	Bml
		0100		119.4	114.1	7.9	4830	47749	63777	6377	10°	14		Bml
		0120		-	-		-	-	-	-	-°	-	Delay changed to 5s	Bml
		0130		119.8	113.9	8.1	5530	47703	6369	6368	6°	12		Bml
		0200		120.2	112.2	8.0		47671	6382	6384	6°	12	Raytheon Seismic Recorder OUT	Bml
		0210		-	-		-	-	-	-	-°	-	Seismic Records OK -	Bml
		0224		-	-		-	-	-	-	-°	-	Delay Changed to 4s	Bml
		0230		120	113.1	8.1	3650	47660	6322	6326	2°	16	A/C → 115° at 17°24'84 - 83°10'63	Bml
		0241		1-	-		-	-	-	-	-°	-	Delay Changed to 2s	Bml
		0300		120.1	115.4	8.2	2250	47638	6477	6483	0°	14		Bml
		0305		-	-		-	-	-	-	-°	-	A/C → 118° at 17°22'78 83°09'59	Bml
Sat	Fix	*0222	04	-	-		-	-	-	-	-°	-	Sat Fix 17°25'42 - 83°11'78 EL 17 CT 33	Bml
		0330		120.1	118.1	8.4	1850	47681	6503	6506	4°	18		Bml
		0400		119.8	117.4	8.5	2130	47626	6492	6491	0°	18		Bml
		0430		119.8	119.2	8.4	2125	47550	6485	6484	0°	15		
		0500		126.9	119.2	8.3	1370	47476	6513	6515	15°	16		
		0530		130.9	119.2	8.5	1710	47668	6502	6500	15°	14		
		0600		146.7	117.6	8.5	1820	47601	6472	6472	10°	16		
		0626							645					
		0630		21.2	170.2	8.3	1610	47741	6489	6489	335°	16	CIC → 209 E.L. # 22	EOL 22
		0634											On turn	
		0658											CIC → 300	
		0700		411	2314	8.2		47564	6566	6569	305°	12		



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW 8909		0203	+4	0703	Cayman Trough		170454	8245.89	Mann

  

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
07	AUG	89	0705										XNC - S.O.L. #23	SOL23
			0716										CIC → 307	
			0718										AIC → 302	
			0730	300.8	301.9	8.4	1580	07486	65826583	275	4		0827 - SAT Fix.	
			0800	301.3	301	8.5	1550	47546	65866585	280	3		17° 09.67'	
			0830	301.8	301	8.5	1480M	47555	66006603	285	3		82° 55.00'	
			0831										Sent record #5 on recorder #4	
			0840										AIC to 312 17°10'	
			0900	300.1	312	8.6	1400M	47539	66026600	315	1			
			0930	299.6	310	8.6	1880M	47541	65936593	280	1			
			0935										AIC 303	
			1000	300	302	8.5	1875	47590	65956595	280	2		1014 - SAT Fix (MVOX #2)	
			1030	300.1	303	8.6	1830	47606	66026603	310	3		17°18.01'	
			1100	300	302	8.7	2600	47635	65916592	205	4		83° 08.57'	
			1123										AIC to 306	
			1130	300	305	8.8	3425	47639	65416542	325	3			
			1200	300	307.1	8.5	3890	47690	65276526	270	4			
			Sat Fix *	1111	52								SAT. Fix 11.11.52 17°22' 11.4 - 83°16' 68.9	BmL
				1222									309° AIC at 17°30' 16 - 83°11.58 ← INTERNAV	BmL
			BRIDGE Fix *	1209									BRIDGE Fix 12:09 17°26.6 - 83°25' 18	BmL
				1230	299.7	311	8.6	3260	47742	65416543	270	2		BmL
				1245									AIC → 314° at 17°29'41.6 - 83°30'14.0	BmL
				1300	300.1	315.6	8.6		47779	65306528	180	2		BmL
				1317									AIC → 307° at 17°32'39 - 83°34'27	BmL
				1324									Change Delay to 5.0 s	BmL



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW 8909		0926	+4	1326	CAYMAN TROUGH	17°33'029	83°35'437	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC			GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
07	AUG	89	1330:		299.7	307.1	8.4	5300	47815	6505	6502	266°	2			Bml	
			(219)	1400:	299.7	307.9	8.8	5460	47834	6503	6503	266°	2			Bml	
			P 1430:		299.6	306.9	8.5	5350	47841	6501	6501	270°	4			Bml	
			SAT FIX * 1422:	07											SAT FIX N17°37'92 - W83°43'87 EL18 IT2 CT32	Bml	
			1433:		-	-		-	-	-	-	-	-	-	A/C → 304 at 17°39'02 - 83°45'47	Bml	
			1500:		298.7	304.7	8.6	5475	47936	6508	6507	270°	4			Bml	
			1519:												Low Pressure → check the guns (Dave)	Bml	
			1520:												R/S → 4 knots (to change the gun)	Bml	
			1530:		298.7	303	8.5		47998	6496	6494	212°	4			Bml	
			1533:		-	-		-	-	-	-	-	-	-	Changed Gun (- → Starboard) 1/S → 8 knots	Bml	
			1600:		298.6	303.9	8.0	5410	48085	6510	6509	280°	2			Bml	
			1624:												c/c to <del>290</del> 290	EC	
			1630:		296.0	289.1	7.8	5360	48103	6522	6521	300°	2			EC	
			1700:		300.0	289.2	7.1		47013	6528	6529	270°	2			EC	
			1721:												c/c to 297 at 17°50.8 - 84°08.1	EC	
			1730:		302.1	283.1	7.3	5200	48200	6527	6527	240°	2			EC	
			1752:												c/c to 210 at 17°52.9 - 84°12.0 End line #23 <sup>EDL 23</sup>	EIC	
		1759	<del>1800</del>		074.1	213.4	6.8		48150						on course -	EC	
			1800:		069.1	242.2	7.4	5200	48177	6525	6533	325°	15			EC	
			1811:												A/C → 200- 1751 21 8413 78		
			1827:		344.9	14.27									XNC at 17°49.2 - 84°14.6 Beg. line #24	EC	
			1830:		<del>344.9</del>	<del>14.27</del>	8.1	5180	48108	6481	6491	360°	10			EC	
			1900:		119.8	120.7		5200	48103	6429	6424	360°	10			EC	
			1930:		119.8	119.7	7.7	5210	48081	6426	6424	360°	21			EC	
			2000:		119.8	121	7.7	5210	48007	6423	6424	10°	17			EC	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	8900 MN	16:05	+4	20.05	CAYMAN TROUGH	17°43	84°04	ARRAN/ROSECRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
07	AUG	89	1953										0		SAT FIX 17 43.806 84 05.596 el 24 it 2 ct 23	CG
			(219)										0			
			2030	119.9	121	7.7	5300	47932	64126	419	05	15	0			
			2100	119.8	120	7.9	5375	47912	64166	417	05	14	0			
			2059										0		SAT FIX 17 40.083 83 58.849 el 12 it 2 ct 26	CG
			2130	119.8	120	7.8	5000	47922				005	14	0		
			2200	120	119	8.0	4740	47824	64336	435	005	16	0			
			2202										0		A/C TO 116	
			2230	119.7	117	7.9	4340	47787	64456	447	005	12	0			
			2230										0		Seismic filter went out. unknown	
			2300	119.7	119	7.8	3870	47763	64616	461	005	12	0			
			2249										0		SAT FIX 17 33.810 84 59.820 el 44 it 3 ct 33	
			2330	119.7	113	7.9	3440	47710	64736	473	355	13	0			
			2332										0		A/C to 114	
08	AUG	89	0000	119.8	115.7	8.2	2960	47690	64806	481	000	16	0		Changed delay to 3s.	Bml
			0022	-	-	-	-	-	-	-	-	-	0		A/C 112° at 17°28'815 - 83°38'439	Bml
			0030	119.8	117.9	8.1		47677	64796	479	005	18	0			Bml
			Satfix * 0011:40	-	-	-	-	-	-	-	-	-	-		SAT FIX 00:11:40 N17°29'51 W83°69'79 EL32 IT2 CT36	Bml
			0100	119.9	113.6	8.4	2460	47672	64826	482	000	18	0			Bml
			0130	120.2	112.4	8.5	2920	47690	64756	474	000	18	0			Bml
			0200	120.6	111.6	8.6	2625	47626	64696	468	350	20	0			Bml
			0230	120.0	117.7	8.4	2365	47580	64756	476	350	18	0			Bml
			Satfix * 0159:59	-	-	-	-	-	-	-	-	-	-		17 22 92 83 27 44 EL 27 IT 2 CT 32	Bml
			0249	-	-	-	-	-	-	-	-	-	-		01:59:59 Satfix 17°22'92 83°27'44 EL 27 IT 2 CT 32	Bml
			0300	120.3	117.6	8.3	2550	47568	64866	488	350	22	0		117° A/C at N17°20'101 - W83°22'074	Bml
			0330	120.3	117.8	8.4	2220	47695	64886	488	340	22	0			Bml



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST			
R/V MOANA WAVE				8909 MW		0000	+4	0400	Cayman Trough				17°16'57		83°15'71		Mnn/Ramirez			
DATE			GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS				OBSERVER
DAY	MONTH	YEAR								GRAVITY		SPRING TENSION		DIRECTION KNOTS						
01	Aug	89	04	00	119.9	118.4	8.2	1950	47603	6488	6488	6488	330	24				BmL		
	(2200)		04	30	119.8	116.7	8.1	1730	47565	6491	6492	6492	340	22				8		
			05	00	119.3	117.7	8.6	1710	47557	6498	6497	6497	340	18				8		
			05	30	118.3	117.1	8.4	1100	47523	6515	6517	6517	340	20						
			06	00	117.3	117.2	8.1	1338	47502	6499	6497	6497	330	20						
			06	30	114.7	118.9	7.8	1270	47491	6493	6492	6492	335	20						
			07	00	108.5	116.7	8.1	1280	47432	6497	6497	6497	340	18						
			07	12																
			07	30	200.4	137.7	7.9	1380	47439	6475	6475	6475	315	18						
			08	00	210	210	8.1	1334	47315	6535	6544	6544	219	18						
			08	03																
			08	09	300	302														
			08	16																
			08	30	300	304	8.3	1540	47304	6553	6560	6560	105	5						
			09	00	300	303	8.2	1310	47381	6583	6583	6583	105	5						
			09	30	300	301	8.1	1185	47327	6596	6598	6598	130	4						
			10	00	300	302	8.1	1030	47422	6599	6598	6598	145	4						
					300	302	8.0	1012	47442	6623	6627	6627	120	4						
					<del>300</del>	<del>300</del>	<del>7.7</del>	<del>1100</del>	<del>47464</del>	<del>6606</del>	<del>6604</del>	<del>6604</del>	<del>120</del>	<del>4</del>						
					300	300	7.7	1710	47464	6606	6604	6604	120	4						
						305														
					300	305	7.5	1600	47527	6592	6592	6592	120	5						
					300	307.9	7.5	1825	47603	6579	6578	6578	120	4						
																		MK BmL		

c/c to 130  
 c/c 209 (turn 100° right) 170114  
 824767.

c/c TO 300.  
 ON COURSE 300° START LINE #25.

0742:43 SAT FIX 16°59.617 82°48.625 EL 17 IT 2 CT 22

0859 SAT FIX 17°00.373 82°56.464 EL 22 IT 2 CT 22

MAGNOVOX NAVIGATOR DOWN / RIGHT BACK-UP USED

0947 SAT FIX 17°03.92 83°02.08 (RIGHT) EL 10 IT 3 CT 13

A/c 305°

A/c 307°



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	8:07	+4	12:07	CAYMAN TROUGH	17°12'71	-83°18'74	HANN/ROSENKRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
08	AUG	89	121134									SatFix - 17°12'757 83°19'236 EL34 IT2 CT32	BmL
(2201)			1230:	299.5	306.7	8.3	2025	47600	65856585	127°	4		BmL
			1300:	297.7	305.2		2000	47601	65936594	125°	6		BmL
			1311:									A/C → 305° at 17°17'654 83°26'057	BmL
			1320:									Changed delay to 2.0s	BmL
			1321:									Tape Change on Seismic	BmL
			1330:	295.7	304.6	8.1	2475	47594	65866585	185°	18		BmL
			1400:	291.6	304.6	8.2	1800	47611	66016603	135°	6		BmL
			1411:									A/C → 302° at 17°21'77 83°35'23	BmL
SAT FIX			1400:05									SatFix 17°20'510 83°33'739 EL27 IT2 CT31	BmL
			1420:									A/C → 304° at 17°22'36 83°36'66	BmL
			1430:	302.4	305.1	8.4	1620	47680	66160629	155°	8		BmL
			1433:									Changed delay to 1.0s	BmL
			1449:									C/C → 205 End of Line #25.	BmL
			1456:									S/C → 205° at N17°24'239 W83°41'684	BmL
			1500:	265.1	206.1	7.4	1330	47676	66446656	780°	18		BmL
			1520:									C/C → 114° at N17°21'575 - W83°43'555	BmL
			1525:					BEGIN LINE 26				S/C → 114° at N17°20'840 - W83°43'150	BmL
			1530:	120.6	115.7	8.1	1255	47630	65506546	0°	22		BmL
SAT FIX			1523:16									SATFix N17°21'772 - W83°43'911 EL47 IT3 CT32	BmL
			1600:	120.5	114.2	8.4	1650	47630	65146518	0°	24	No gun signal	BmL
			1614:									A/C 120 171805 833801	dd
			1614:									Gun signal restored	dd
			1630:	120.4	120.6	8.3	2080	47582	64886488	0°	24		dd
			1645:									A/C 117.	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	8909 MW	1300	+4	1700	Cayman Trough			Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
08	Aug	89	1700	119.8	117.4	8.2	2560	47569	6476	6474	0	18	Gun Signal stopped on Oscilloscope	da
			1707										Gun Signal Restored.	da
			1730	120.1	119.9	8.2	2200	47551	6475	6476	355	18		da
			1800	119.8	115.8	8.1	2070	47562	6476	6476	0	18	1710.90 83 29 9. -GPS @ 18.09.	da
			1830	119.6	118.4	7.9	1830	47523	6479	6481	350	18		da
			1846										C/C 209 1708 52 8321 38 .EOL 26	da
			1852										XNC	
			1900	210.5	200.9	8.1	1660	47542	6587	6590	275	10		da
			1919										C/C 300 1704.44 8323.36	da
			1926										XNC . Begin Line. 27 1704 30 8324 28	da
			1930	112.4	303.2	8.6	1850	47472	6583	6584	90	8		
			1937										A/C 302.	
			2000	300.4	301	7.9	1790	47460	6579	6579	90	6		da
			2030	300.4	301	7.9	2050	47484	6568	6568	95	3		da
			2046										SAT FIX (1830) 17° 09.886 83° 23.126 EL 37 IT 2 CT 13	da
			2100	300.4	303	7.9	2240	47512	6559	6559	95	5		da
			2130	300.4	303	7.9	2550	47544	6560	6561	115	5		da
			2147										Adj/C 308°	da
			2200	300.4	307	7.9	2390	47612	6570	6570	130	7		da
			2230	299.5	305	7.7	1820	47631	6598	6500	125	6		da
			2241										SAT FIX (2226) 17 17.201 83 47.262 06512930	da
			2300	298.0	305	7.9	1750	47603	6617	6619	125	6		da
			2302										END LINE 27 C/C	da
			2308										XNC Seismics failed	da
			2330	194.7	209	6.9	1910	47616	6584	6582	330	10	TURNING	da



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	1900	+4	2300	ISLAS SANTANILLA (SWAN)	17° 19'	83° 53'	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
08 AUG	87		2339:										0	XNC	CE
(220)			2346:										0	C/C START LINE 28	CE
5/11			2355:										0	Ed in process of being pulled in - bad connection? Exact time of pull recovery was 2346 at the beginning of line 28.	pm
													0	← No (BEFORE) perhaps 2310	
09 AUG	89	0000:		119.1	112.2	6.1	2345	47583	6497	6484		355	20		BmL
(221)			0001:										0	I/S → 8 knots	BmL
SAT FIX	*		2348:29										0	SAT Fix 17° 15' 61 83° 55' 08 EL21 IT2 CT33	BmL
			0017:										0	A/C 116° at 17° 14' 118 83° 52' 517	BmL
			0030:	119.7	118.1	7.2	2130	47569	6487	6487	(380)	24			BmL
			0100:	119.8	117.6	8.1	2190	47567	6475	6474		355	22	3.5 kHz out (switched 10')	BmL
			0130:	119.6	116.6	8.3	2360	47504	6459	6457		355	24		BmL
SAT FIX	*		0052:34										0	(Rejected?) 17° 12' 07 83° 48' 75 EL12 IT2 CT25	BmL
			0200:	119.9	116.2	8.2	2230	47480	6455	6456		0	24		BmL
			0230:	120.4	117.4	7.8	2170	47460	6454	6455		355	22		BmL
SAT FIX	*		0137:11										0	SAT Fix (01:37) 17° 09' 7 - 83° 43' 7	BmL
			0250:										0	Changed paper on Rec 5 (SeaMARC II.) → 01:59	BmL
			0300:	121.5	116.7	7.8	1650	47416	6474	6478		355	22		BmL
			0321:										0	A/C → 119° at 17° 03' 555 83° 32' 466	BmL
			0330:	120	119.5	7.8	1375	47419	6494	6497		350	22		BmL
			0342:										0	C/C → 209° END OF LINE 28 at 17° 02' 234 83° 30' 294	BmL
SAT FIX	*		0300:										0	SAT Fix 17° 04 81 83° 34 86 EL31 IT2 CT34	BmL
			0348:										0	XNC 17° 01' 269 83° 30 393 Begin line 29	BmL
			0400:	2063	206.7	8.1	1310	47346	6575	6598			0		BmL
			0403:										0	A/C 198 1659 73 83 31 32	BmL
			0416:										0	A/C 300 1658 11 83 32 11	BmL



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
Moana Wave	MW8909	0020	+4	0420	Islas Santanilla (Jund)	16 57 73	83 32 88	Mann

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER		
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION		DIRECTION	KNOTS					
09	Aug	89	0423												XNC S.O.L. # 29.	16 57 81 / 83 33 14	da	
			0430	108.4	301.4	9.0	1460M	47236	66	20	66	15	120	8			da	
			0500	299.8	301.4	7.8	1670	47303	65	59	65	53	130	10			da	
			0530	299.6	300.9	8.1	1870	47412	65	48	65	48	150	10	RIS 4 kts		da	
			0537												TIS 8 kts		da	
			0546												3.5 kHe printer problem recognized - occurred ~ 0530		da	
			0600	299.5	301.4	7.8	2070	47447	65	46	65	47	150	8				
			0630	298.8	301.1	7.7	2030	47460	65	58	65	58	150	7				
			0639												AIC → 308.	1706 63	83 50 07	da
			0700	300.7	308.9	8.1	2080	47535	65	65	65	66	150	6				
			0730	299.4	308.4	7.6		47531	65	88	65	91	140	6	AIC → 305	1710 77	83 55 38	da
			0800	298.2	303	7.6	2300	47593	65	82	65	83	145	6	WATCH CHANGE			da
			0830	296.5	304	8.4	2650	47604	65	67	65	65	125	5				da
SAT FIX			0844												→ SAT FIX (0627) 17° 05.7 83° 48.6			da
SAT FIX			0846												→ SAT FIX (0837) 17° 15.263 84° 05.556	EL 1		da
			0848												→ Adj 310°			da
			0900	293.0	309	8.5	2180	47645	65	86	65	85	120	5				da
			0930	285.1	309	8.2	1150	47647	66	37	66	39	120	5	Magnovox not reliable			da
			1000	265.4	309	8.0	2250	47723	66	24	66	29	115	5				da
			1004												→ C/C 071° BEGIN TRANSIT INTERRUPT LINE 29			da
			1012												→ X/NC 072°			da
			1018												→ Adj/C 072° 6 knots			da
			1030	070.1	070	5.7	2850	—	65	10	64	85	015	16				da
SAT FIX			1037												→ SAT FIX (1025) 17° 24.153 84° 15.636	EL 66 173 CT 29		da
			1048												→ SeaMARC connector on deck for inspection (depressor)			da



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
Moana Wave	MW 8909	0700	+4	1100	Islas SanLanilla (I. del Cisne)	17° 24'	84° 14'	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
09	AUG	89	11:00	839	84	5.4	2420		6509	6504	005°	16		(B)
	(221)		11:06										Depressor passed inspection and is redeployed	(B)
			11:15										Maggie redeployed and powered up for test/passed	(B)
			11:18										SeamARC operational; speed inc. to 8.0 knots	(B)
			11:21										Maggie powered up	(B)
			11:30	85/84		5.2	2130	47740	6523	6522	000°	18		
			11:47										Slow to 4 knots	PM
			11:50										seel deployed; stbd gun deployed. Both gun #20 & #6 set on 20. [No trace in Recorder #2 and #3 Seismics - reported to Steve]	BML
			12:00	93.3	85.6	8.2	2050	47740	6521	6522	000°	22	AIC → 078° Delay changed to 0.5	BML
			12:26										AM → 073°	BML
			12:30	071	80.1	8.3	1525	47760	6551	6553			AIC → 073° at 17°27'210 83°59'08	BML
			12:43											BML
			13:00	0636	0761	8.0	1590	47782	6553	6551	006°	18	AIC → 069° at 17°28'407 - 83°57'038	BML
			13:11										SAT FIX: 17°27.6 84 01.6	BML
SAT FIX *			12:46											
			13:30	0527	0694	8.2	1940	47826	6548	6545	006°	18	AIC 073° at 17°29'6 - 83°54'2	BML
			13:32											BML
			14:00	071	0724	7.5	2180	47808	6535	6131	006°	22		BML
SAT FIX *			13:36										SATFIX - 17°29.6 - 83°56.3	BML
			14:05										C/C 305°	BML
			14:13										XNC 305° START LINE #30 at 17°31'8 - 83°52'8	BML
			14:30	298.9	306.2	8.1	3440	47865	6589	6599	130°	4	Delay changed to 4s	BML
			15:00	297.5	308	8.2	4650	47851	6543	6538	135°	4	(Delay changed to 6s at 1456)	BML
			15:30	294.7	307.7	8.2	5200	47928	6519	6517	135°	4		BML
			14:59										SAT FIX: 17°35.1 84°00.2	PM



[illegible]



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MLW8909	5:45	+4	20:45	SWAN ISLAND	17° 33	84° 07	MANN/ROSPACRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER			WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION				
22	AUG	89	2100:	119.1	113	8.0	4400	47836	64366	436345	17			CG
			(221)	2130:	118.8	113	8.1	3750	47820	64646465340	17			CG
			2135:											CG
			2141:										end line 31	
			2149:										XNC	
			2200:	190	189	7.5	2350	47820	65746594	300	10		A/C 190	
			2206:										start new line 32	
			2230:	300	311	7.7	3000	47823	66046614085	9				
			2240:										SAT FIX 17 2216 8407.93 (2229) 1836 120425	CG
			2300:	300.6	311	8.0	4350	47825	65516547075	10				
			2307:										new belt on recorder #1	
			2330:	300	310	7.9	5045	47853	65296526075	11				CG
			2334:										A/C 309	
			2338:										SAT FIX 17 32.66 8415.02 2113 120424 (2325)	CG
10	AUG	89	0000:	300.1	308.9	8.0	5150	47937	65256525	060	15			BmL
			(222)	0030:	298.9	308.7	7.8	5110	48003	65326531	080	10		BmL
			0033:										A/C → 306° at 17°38'0 - 84°24.3	BmL
			0100:	296	307.2	7.9	5110	47977	65386539	080	12			BmL
			* 0117:										SAT FIX 17 30.3 54°22.0	BmL
			0110:										E/C 204° @ 17°40' 860 84°29'474	BmL
			0116:										XNC 204° @ 17°40' 676 - 84°30'458	BmL
			0130:	197	201.7	8.2	5100	47977	65226518	260	10			BmL
			0148:										E/C → 115° @ 17°37'466 - 84°33'216	BmL
			0154:										XNC 115° @ 17°36'765 - 84°33'072	BmL
			0200:	-	115	7.1		47930	64406429	330	22			BmL



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW8909	22:11	+4	02 11	PAYMAN TROUGH - SWAN ISLANDS	17°36'163	84°31'500	MANN/ROSENCRAFT

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
10	AUG	89	0213:										→	A/C 113° @ 17°36'090 84°31'377	BmL
(222)			0230:	119.9	114.3	7.1	5110	48003	64406	438			→	A/C 116° @ 17°34'07 84°29'9	BmL
			0239:										→		BmL
			0300:	119.8	117.4	8.5	5110	47961	64316	431			→		BmL
Sat Fix #			0230:										→	SAT FIX 735.2 81 210	BmL
			0330:	119.5	114.4	8.1	4780	47892	64346	435			→	Change of Delay to 5.0s (to avoid burned area on Rec #3)	BmL
			0344:										→	Change delay to 6.0s again	BmL
			0400:	119.1	115.6	8.1	4600	47799	64396	439			→		BmL
			0401:	#									→		
			0430:	121	115	9.0		47733	64524	454			→	C/C 112 17°30'114 84°20'56 (Sat Fix GPS loc)	ST
			0500:	117.3	112.2	7.9	4080	47714	64776	480			→	<del>Q/C 112</del>	ST
			0516:										→	C/C 209 / EOW #33 17°26'26, 84°13'24 EOL33	ST
			0522:										→	XNC 17°25'52, 84°13'21	ST
			0530:	201.1	204.2	7.8	2170	47697					→		ST
			0549:										→	A/C 300 17°22'.5, 84°15'.6	ST
			0555:										→	XNC 17°22'44, 84°16.47	ST
			0600:	119.4	305.4	6.8		47673	64324	441			→		ST
			0611:										→	A/C 309 17°22'74, 84°18'57	ST
			0630:	301.0	310.2	7.6		47674	65746	563			→		ST
			0656:										→	A/C 313° 17°25'.95, 84°23'.55	ST
			0700:	300.8	313.6	7.6	3930	47726	65466	542			→		ST
			0730:	301.0	311.1	7.4		47767	65246	521			→		ST
			0735:										→	A/C 308/17 28 80 84 2857	ST
			0751:										→	SAT FIX 1723.30 8418.992 1723.30 8418.992	ST
			0800:	302.4	307	7.7	5090	47841	65186	517			→		ST



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW8909	0400	+4	0800	Cayman Trough - Swan Islands	17° 30' N	84° 31' W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
10	AUG	89	08:26								0	SAT FIX (0800) 17° 30.567 84° 31.687 EL 30 IT 3 CT 26	(B)
	(222)		08:30	3020	311	7.7	5090	47886	6521	6520	60° 15		(B)
			09:00	3014	311	7.6	5060	47917	6532	6532	70° 14		(B)
			09:03								0	C/C END LINE 34	(B)
			09:10								0	XNC / PULL EEL IN FOR CHECKOUT	(B)
			09:30	191.1	203	7.3	4980	47861	6526	6526	230° 9		(B)
			09:38								0	XNC	(B)
			09:43								0	C/C START LINE 35	(B)
			10:00	120.5	113	7.7	4980	47834	6435	6421	315° 20	EEL CHECKED OUT "OK" ON VISUAL	(B)
			10:03								0	AdjC 122°	(B)
			10:08								0	SAT FIX (0947) 17° 32.157 84° 42.399 EL 24 IT 2 CT 26	(B)
			10:19								0	AdjC 130°	(B)
			10:30	120.2	129	7.9	4800	47809	6439	6441	300° 17		(B)
			10:56								0	AdjC 120°	(B)
			10:58								0	SAT FIX (1023) 17° 30.126 84° 38.795 EL 27 IT 2 CT 23	(B)
			11:00	119.7	119	8.0	4980	47792	6432	6434	310° 18		(B)
			11:15		112						0	A/C.	(B)
			11:30	119.6	112	7.9	4550	47782	6428	6427	310° 22		(B)
			11:38								0	SAT FIX (1126) 17° 25.333 84° 32.634 EL 13 IT 3 CT 21	(B)
			12:00	119.7	111.1	7.7	3670	47647	6444	6447	330° 26		BmL
SAT FIX*			12:10:44								0	SAT FIX 12:10:44 17° 22' 662 84° 27' 894 EL 25 IT 3 CT 24	BmL
			12:26								0	A/C → 110° @ 17° 21' 80 - 84° 26' 09	BmL
			12:30	119.7	111.9	8.3	3120	47674	6464	6468	330° 24		BmL
			13:00	120.1	108.4	7.9	2020	47654	6504	6498	330° 26		BmL
			13:30	120.1	111.4	8.0	2170	47616	6497	6499	330° 22		BmL



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	09 40	+4	1340	PAYMAN TROUGH / SWAN ISLANDS	17°17'81	84°17'49	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
10	AV	89	09 40											SAT FIX 13:14:05 17°19'233 84°20'575 EL63 IT2 CT34	BmL
(1222)			1351											A/C → 112° @ 17°17'23 84°16'33	BmL
			1400	120.3	112.4	7.7	3000	47602	64686	6467	330°	24	A/C → 115° (14:01)	BmL	
			1430	120.3	117.2	8.2	2370	47569	64646	6466	330°	24		BmL	
			1500	120.0	113.9	8.4	2720	47564	64596	6460	330°	22		BmL	
			1436											SAT FIX: 17°24'26 - 84°1151 - EL 21 IT2 CT33	BmL
			1530	119.9	113.4	8.1	1800	47495	64876	6492	330°	22		BmL	
			1600	119.9	112.9	8.4	1600	47482	64946	6498	330°	20		BmL	
			1630	118.8	113.2	8.5	1700	47436	64756	6476	325°	18		EC	
			1700	118.8	111.1	8.6	1700	47428	64686	6470	325°	20		EC	
			1624											17°07.1 - 83°59.4 SAT FIX	EC
			1730	120.0	112.6	8.6	1890	47394	64586	6459	325°	20		EC	
			1752											c/c to 112	EC
			1800	119.6	111.7	8.3	1940	47367	64466	6448	325°	20		EC	
			1830	119.6	110.6	8.4	1940	47327	64376	6438	325°	20		EC	
			1900	119.8	111.9	8.4	1820	47197	64386	6441	325°	20		EC	
			1929											c/c to 116	EC
			1830	120.3	117.6	8.3	1570	47152	64596	6460	305°	20		EC	
			1954											SAT FIX 1927: 16°56.203, 83°36.131 EL18 IT3 CT23	EC
			2000	120	118	7.8	1312	47343	64756	6485	315°	16			
			2030	120	120	7.6	1175	47369	64666	6470	315°	17	SAT FIX -1		
			2100	120	118	7.4	1853	47235	64356	6435	330°	18			
			2101		120									A/C	R
			2130	120	123	7.7	1857	47053	64126	6412	340°	18			
			2148											SAT FIX 2114: 16°48.824, 83°25.62 EL 47 IT2 CT30	EC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW 8909	2130	+4	2130	CAYMAN TROUGH/SWAN ISLANDS	16°47' N	83°23' W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION	KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION						
10	AUG	89	22:00	1202	123	7.2	1852	46979	63996402			325	14			
	(222)		22:30	1213	123	8.1	1852	46962	63876387			325	14			
			22:41												C/C END LINE 35	
			22:47												X/NC	
			23:00	210	209	8.3	1835	47023	64746495			275	5			
			23:17		302										C/C	
			23:24		301										BEGIN LINE 36	
			23:30		299	8.3	1520 <del>1852</del>	47264	65036511			090	7			
			23:34												SAT FIX	
11	AUG	89	00:00	299	295.9	8.0	1860	47189	64886485			090	5			BmL
	(223)		00:30	299.9	296.9	8.1		47147	64896488			090	4			BmL
			23:42												SAT FIX: 16°40.3 83°20.2 (EL=47; IT=2; CT=28)	pm
			01:00	299.9	299.9	8.2	1770	47591	65216522			060	6			BmL
			01:30	300.1	296.6	7.9	1890	47149	65126509			50	8			BmL
			01:57												A/C 305° @ 1648 201 83 36 692	BmL
			02:00	300.5	305.6	7.8	1890	47338	65406499			60	8			BmL
			02:12												A/C 310° @ 16°49'246 - 83°38'351	BmL
			02:29												A/C 300° @ 16°50'600 - 83°40'111	BmL
			02:30	300.3	299.9	7.5	1600	47367	65246525			60	6			BmL
			02:43												A/C 306° @ 16°51'1446 - 83°41'750	BmL
			03:00	300.9	306.4	7.3	1500	47028	65456546			40	10			BmL
			03:12												A/C 310° @ 16°53'329 - 83°45'070	BmL
			03:30	302	309.9	7.9	1750	47103	65456543			50	9			BmL
			04:00	300.0	311.9	8.0	1670	47236	65466545			55	10			dd
			04:06												A/C 306 @ 16°57'38 - 83°51'33	dd



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MONA WAVE			MW 8909		0008	14	0408	CAYMAN TROUGH / SWAN IS.	165738	835133	Mann

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
11	AUG	89	0430	301.6	306.9	7.8	1600	47342	655	66556	30	10		da
			(223) 0500	301.4	308.4	7.5	1830	47363	655	36553	55	10		
			0530	299.4	307.4	7.9	1780	47379	6562	6563	45	10		
			* 0511										SAT FIX	
			0600	298.7	306.6	7.7	1718	47429	656	86568	40	10	1701.83 8359.16	
			0630	297.9	307.6	7.5	1010	47454	661	26614	55	10		
			0621										WID Δ 10 1.0	
			0637										WID Δ 10.5	
			0700	297.0	301.6	7.5	2430	47493	6561	6553	40	12		
			* 0655										SAT FIX 17° 08' 96, 84° 12' 45 (Transit)	
			0730	299.9	305.6	07.9	2720m	47541	6538	6535	55	12		
			0800	300.3	305	8.1	3160	47554	6537	6535	50	10		
			0830	300	303	8.0	2260	47568	6567	6568	055	12		
			0900	300	305	8.5	2740	47624	6565	6564	060	10		
			0918											
			0930	300	304	8.0	3640	47693	6540	6536	060	10	SAT FIX 0902: 17° 18' 52 84° 29' 10 EL 60 IT 2 CT 29	
			0955											
			1000	300	306	8.5	4530	47693	6524	6522	060	10	SAT FIX 0939: 17° 21' 36 84° 34' 42 EL 57 IT 2 CT 33	
			1030	300	305	8.0	4723	47722	6520	6518	075	10		
			1100	300	302	8.1	4855	47809	6527	6527	085	8		
			1101										SAT FIX 1101 17° 27' 53 84° 44' 73' EL 7 IT 3 CT 23	
			1113	300	290	8.3		47908	6536	6537	085	10	ADJUST COURSE	
			1130	300	294	8.3	4935	47863	6536	6537	085	10		
			1135		c/c								c/c END LINE 36.	
			1140										XNC	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 3909	740	+4	1140	SWAN ISLANDS TRANSFORM	17°29' N	84°50' W	MAWU/ROSENKRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
11	AUG	89	11:42	—	210								0	→ Turn course	BM
(223)			12:00	191	210.9	7.8	4910	47771	65116	509			275° 6	Changing paper on Recorder #6 (out of paper 11.5)	BM
			12:10	—									0	→ C/C 123°	BM
			12:17	—									0	→ XNC Beg. Line #37 @ 17°25'6 - 84°52'9	BM
			11:08	—									0	SAT FIX FROM PREVIOUS WATCH: 17°29.24, 84°48.39 (ELIS, IT2, CT01)	BM
			12:30	119	223	8.0	4920	47750	64228	6413			330° 18		BM
			12:56	—									0	→ A/C 122° @ 17°22'373 84°48'639	BM
			13:00	119	120.9	7.9	4940	47742	64216	473			330° 18		BM
			13:09	—									0	→ A/C → 116° @ 17°21'563 - 84°47'218	BM
			13:30	119.1	115.9	8.0	4650	47699	64166	417			330° 18		BM
LORAN X			13:51	—									0	→ LORAN Position @ 1351 17°19'9 - -84°47.4	BM
			14:00	119.6	115.0	7.9	4030	47635	64216	424			330° 18		BM
			14:27	—									0	→ A/C → 113° @ 17°17'492 - 84°37'402	BM
			14:30	119.6	115.0	7.8	3540	47600	64286	430			330° 16		BM
SAT FIX X			14:38	—									0	→ 14:38:33 SAT FIX: 17°16'91 - 84°37'12' (EL8) IT2 CT25	BM
			15:00	120.2	114.6	8.1	3280	47612	64256	427			330° 18		BM
			15:02	—									0	→ A/C → 115°	BM
			15:30	120.8	116.7	8.3	3470	47610	64166	417			330° 16		
			16:00	121.5	117.2	8.4	3420	47550	64166	417			330° 16		
			16:12	—									0	→ C/C 118° 17°11.48, 84°24.78	ce
			16:50	121.1	120.1	8.4	3240	47555	64176	419			350° 12		
			17:00	119.9	120.0	9.2	5460	47483	64346	437			330° 12		
			17:30	119.6	115.1	7.9	2110	47445	64446	468			329° 10		
			18:00	119.6	113.9	8.0	1650	47411	64388	449			330° 10		
			18:30	119.4	114.6	7.7	1720	47422					325° 8		



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST	
R/V Moana Wave				NW 89 0		0300	+4	1140	Juan Island Transform				17°00.8		84°07.8		MANN ROSENBLUTH	
DATE			GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS		OBSERVER
DAY	MONTH	YEAR								GRAVITY		SPRING TENSION		DIRECTION	KNOTS			
11	AUG	89	19	00	119.6	112.2	7.6	1740	47384	64646	6463	345	12					
		(223)	19	30	119.7	113.4	8.1	1820	47383	64616	6401	325	12	1659 36	8405 13.			
			20	00	120	115	7.8	1668	47337	64576	6458	325	13					
			20	17												SAT FIX 1857: 17 01.10 84 04.48	EL 19 IT 2 CT 25	
			20	30	120	116	8.0	1355	47234	64666	6468	325	16					
			20	57												END LINE 37		
			21	00	-	-	8.6	1185	47191	64676	6467							
			21	05	210	207										ON COURSE 210 -		
			21	29												9/10 TO 300°		
			21	30	TURN	TURN	8.5	1532	47093	65316	6530	270	2					
			21	36	300	309										X ONE BEGIN LINE 38.		
			21	54		305										ADJ COURSE		
			22	00	300	307	7.9	1515	47191	65476	6543	040	17					
			22	06												SAT FIX 2117: 16°51.61 83°56.50	EL 40 IT 2 CT 30	
			22	30	300	306	8.0	1420	47241	65576	6553	035	10					
			23	00	300	307	8.0	1775	47386	65436	6546	035	10					
			23	17		309										ADJUST C.		
			23	30	300	311	7.9	1830	47409	65496	6550	030	8					BML
12	AUG	89	00	00	300	309	7.8	1850	47428	65536	6553	030	8					BML
		(124)	00	30	299	309	7.8	1620	47572	65926	6597	040	5					BML
			00	00	299	309	7.7	1800	47125	65836	6584	040	6					BML
			01	30	300	310	7.8	3000	47484	65376	6531	040	8					BML
			02	00	300	309	8.0	4230	47479	64836	6477	040	8					BML
			02	30	299	309	8.2	4225	47483	64696	6466	040	8			SAT FIX: 17°08.69 84°30.48 (EL=5; IT=12; CT=12)		Pm



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST			
R/V MOANA WAVE				MW 89 09		2235	+4	0235	CAYMAN TROUGH - SWAN FAULT	17°11'47	84°36'87	MANN/ROSENKRANTZ			
DATE				GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR	GRAVITY							SPRING TENSION	DIRECTION	KNOTS			
12	AUG	89	0216											SAT FIX: 17°09.88 84°32.32 (EL=14, IT=2, CT=29)	
			(224) 0300		249	308	8.3	3670	47551	64966499		040°	6	A/C 307° @02:59	BmL
			0325											A/C 305°	BmL
			0330		249	307	8.5	3550	47556	65246527		060°	4		BmL
			0400		249	305	8.3	4300	47554	65176516		060°	2		BmL
			0430		293 304.1		7.6	4930	47631	65136513		060°	7		EC
			0500		300	308.2	7.7	4930	47637	65176516		060°	5		EC
			0530		300	305	8.5	4870	47722	65266527		060°	5		EC
			0538											A/C 210 at 17°24.7 - 85°01.2 END of LINE #38	EC
			0546											XNC at 17°24.5 - 85°02.2	EC
			* 0600		202	204	7.8	4870	47724	65036500		300°	3		EC
			0546											SAT FIX 17°24.55 - 85°02.27	EC
			0617											C/C 120 at 17°20.8 - 85°04.5	EC
			0623											XNC at 17°20.2 - 85°04.3 BEGIN LINE #39	EC
			0630		113	116	8.1	4860	47676	64226414		335°	12		EC
			0700		113	117	7.8	4890	47668	64136412		350°	14		EC
			0730		113.3	118.2	7.7	4760	47573	64116411		355°	13		EC
			0800		119.9	115	8.1	4270	47541	64116412		350°	11		EC
			0804												
			0818							64166416				SAT FIX @ 0853: 17°18.98 85°00.56 (EL=16, IT=3, CT=15)	EC
			0830		120.1	115	8.1	3550		64166416		355°	11	SAT FIX @ 0818: 17°14.08 84°51.90 (EL=53, IT=2, CT=32).	EC
			0900		120.1	117	8.1	3340	47522	64156416		340°	10		EC
			0928											SAT FIX @ 0917 - { 17 10.56	EC
			0930		120.2	118	8.3	3810	47508	63886386		340°	9	84 45.06	EC
			1000		120.2	119	8.3	4130	47459	63696368		355°	9	(EL 37 - IT 2 - CT 32)	EC



DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
12	Aug	89	10:05												SAT FIX 17°07.620 84°39.721 LL 12 112 CT 18	LD
	(224)		10:30	1200	121	8.0	3920	47408	6384	6384	355	9				
			11:00	120	119	8.4	2555	47413	6433	6443	350	10				
			11:30	119.9	119	8.3	1585	47353	6482	6488	350	10				
			12:00	120.3	116.7	8.2	1260	47332	6496	6498	350	10				BML
			12:05												A/C → 113°	BML
			12:30	121.6	113.6	8.0	1340	47377	6485	6485	330	18				BML
			12:57												A/C → 115°	BML
			13:00	118.8	114.7	8.4	1865	47436	6455	6451	330	16				BML
			12:28												SAT Fix 12:28:08 16°58'224 - 84°13'857 EL 15 CT 34	BML
			13:30	119.6	116.9	8.5	1920	47404	6434	6433	330	10				BML
			14:00	128.4	117.4	8.8	1803	47356	6435	6436	330	12				BML
			14:06												C/C → 209° END OF LINE #39 16°52'5 84°12'1	BML
			14:12												XNC 209° 16°51'665 - 84°12'111	BML
			14:30	712.2	708.2	8.8	1660	47295	6535	6551	330	6				BML
			14:15												SAT FIX: 16°51.26 84°12.76 (EL:14, IT:2, CT:30)	PM
			14:38												C/C → 305°	BML
			14:44												XNC - START OF LINE #40 @ 16°48'256-84°15'159	BML
			15:00	299.9	304.6	8.4	1830	47314	6538	6537	030	10				BML
			15:30	299.9	306.7	8.3	1965	47377	6533	6533	030	8				BML
			16:00	300	305	8.1	1550	47466	6559	6562	040	10				
			16:30	300	306	8.2	1330	47458	6582	6583	050	8				EC
			17:00	300	307.4	8.4	1020	47451	6606	6609	030	8				EC
			17:30	300	306.1	8.2	1920	47412	6572	6569	030	8				EC
			18:01	299.9	305.6	8.2	2620	47399	6571	6570	75	8				EC



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST	
R/V Mann LAKE				MW8909		14:04	+4	18:04	Cayman Trough - SWAN FAIT				170318		84142 33		Mann	
DATE				G M T		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR									GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
12	Aug	89	1830	0	299.9	305	8.1	4190	47127	6483	6476	010	0	8			JA	
	(224)		1900		298.5	303.7	8.3	3500	46824	6482	6480	020	0	5			EC	
			1930		299.8	303.4	8.2	3260	47505	6495	6496	005	0	5			EC	
			2000		300	302	8.0	3375	47607	6493	6491	030	0	10				
			2004										0			→ PORT ENGINE DOWN - SPEED DROP -		
			2019			297							0			→ Adj/c 297°	EC	
			2030		299.6	299	8.0	4700	47624	6499	6498	040	0	6			EC	
			2037										0			→ (1945) SAT FIX 17° 10.701 84° 55.875 EL 28 11 2 CT 28	EC	
			2051			301							0			→ Adj/c 301°	JA	
			2100		299.9	301	7.9	4880	47601	6506	6505	025	0	8			EC	
			2105										0			→ SAT FIX @ 2053:49 17° 15.558 85° 04.813 EL 24 11 2 CT 29	EC	
			2130		301.0	303	7.6	4890	47633	6515	6515	035	0	7			EC	
			2138										0			→ C/C END LINE 40	JA	
			2145										0			→ VNC	JA	
			2150										0			→ SAT FIX @ 2132:14 17° 18.310 85° 09.244 EL 32 11 2 CT 30	EC	
			2200		207.0	199	7.9	4895	47622	6492	6488	325	0	4			EC	
			2214										0			→ C/C 120.	EC	
			2220							6411	6409	325	0	10		→ X ON COURSE 120 - START LINE 41 @ 2107. 111348 -	EC	
			2230		119.8	119	8.1	4895	47553	6411	6409	325	0	10			EC	
			2300		119.9	120	8.1	4880	47499	6402	6401	330	0	12			EC	
			2305										0			→ SAT FIX @ 2243:35 17° 13.353 85° 10.691 EL 31 11 2 CT 30	EC	
			2319			119							0			→ Adj/c 119°	EC	
			2330		119.8	119	8.3	4550	47455	6396	6397	335	0	11			EC	
			2348										0			Reduce speed to 6 knots to pull in cell / port sensor's	DM	
			2359										0			115 → 8 knots. all OK but Streamer on the deck	BWL	

ELECTRONICS LAB WATCH LOG "A"

COPY NO. 2

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VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	2000	+4	0000	SWAN TRANSFORM FAULT	17 08 710	85 02 216	MANN/ROSENCRANZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
13	AUG	89	0000	119.8	118.9	7.9	4090	47473	64046	468	330° 16	(Steamer on deck)	BML
(225)			0030	119.8	120.1	7.8	3610	47450	63846	382	330° 16		BML
Sat Fix			0018									SAT FIX: 17°08.00 85°00.81 (EL: 22; IT: 2; CT: 21)	PM
			0044									Steamer in water Seismic OK	BML
			0100	119.7	117.2	8.2	3615	47416	6375	6375	330° 18		BML
			0130	119.7	117.4	8.3	4100	47338	6375	6376	330° 18		BML
			0200	119.4	118.7	8.0	2900	47350	6408	6412	330° 18		BML
			0222									A/C → 116° 17°00' 211 84°47'453	BML
			0230	119.3	116.4	8.0	1980	47308	6452	6458	350° 18		BML
			0300	119.3	116.6	7.9	1670	47373	6473	6476	330° 18		BML
			0330	119.4	115.1	7.8	1280	47443	6488	6490	350° 20		BML
			0308									SAT FIX: 16°57.06 84°41.66 (EL: 56; IT: 2; CT: 33)	PM
			0359									A/C → 114 16 54 46 84 36 85	dd
			0400	119.2	112.6	7.8	1340	47449	6490	6490	345° 18		
			0430	119.5	113.1	7.8	1730	47411	6464	6464	355° 14		
			0500	119.6	113.2	8.2	1830	47374	6446	6446	355° 16		dd
			0530	120.0	114.9	8.1	2010	47349	6429	6427	355° 14		
			0600	120.2	115.1	8.0	2000	47280	6423	6423	350° 16		
			0630	120.5	116.7	8.2	1400	47202	6454	6456	355° 14		
F.O.L. 41			0645									C/C → 205 16°44' 61 84°18'36 F.O.L. 41	da
			0652									Steady on Course (turn)	
			0700	210.3	205.2	8.2	840	47091	6584	6587	310° 10		
			0722									C/C 300 16°39' 89 84 20 42	dd
			0729									XNC 16 39. 67. 84. 21.35	
			0730										



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW 8909	3:31	+4	071	Swan Transform Fault	1639 67	842135	Mann

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
13	Aug	89	0755:												
(225)			0800:	300	305	8.4	1715	47129	6538	6536	045	0	5	SAT FIX 0734: 16° 40.22 84° 21.33 EL 22 IT 2 CT 23	
			0830:	300	306	8.1	1968	47203	6521	6519	055	0	2		
			0900:	300	306	8.1	2013	47329	6522	6522	042	0	2		
			0906:	300	302									A/C.	
			0930:	300	301	7.9	1775	47348	6544	6546	075	0			
			0950:											SAT FIX 0853: 16° 46.26 84° 31.26 EL 26 IT 2 CT 31	
			0952:											SAT FIX 0920: 16° 42.21 84° 35.04 EL 32 IT 2 CT 30	
			1000:	300	302	8.0	1730	47344	6568	6564	040	0	1		
			1030:	300	302	8.1	1345	47311	6583	6586	170	0	2		
			1036:	300	307									A/C	
			1054:	300	312									SAT FIX 1024: 16° 52.01 84° 43.44 EL 36 IT 2 CT 30	
			1100:	300	312	8.0	1698	47369	6566	6565	135	0	2		
			1120:											SAT FIX @ 1041: 16° 53.10 84° 45.95 EL 35 IT 2 CT 33	
			1130:	300	312	8.1	2170	47401	6547	6546	005	0	2		
			1159:											A/C → 306°	BML
			1200:	299.1	308.1	7.9	3010	47351	6505	6505	060	0	2		BML
			1224:											A/C → 309°	BML
			1230:	299.1	309.1	7.8	4310	47365	6468	6463	060	0	2		BML
Sat Fix x			1204:											SAT FIX: 16° 59.87; 84° 56.23 (EL=40, IT=2, CT=33)	PM
			1256:											A/C → 300°	BML
			1300:	298.0	301.2	8.1	3610	47424	6476	6477	060	0	1		BML
			1325:											A/C → 296°	BML
			1330:	299.1	292.7	8.3	3460	47452	6498	6500	260	0	2		BML
			1400:	297	246.6	7.8	4360	47487	6492	6492	060	0	2		BML



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 89 09	2007	+4	1407	SWAN TRANSFORM FAULT	17°09'06	85°12'54	MANN

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
13	AUG	89	1407:								→	A/C → 294°	BML
(225)			1430:	298.8	294.6	8.2	4860	47493	6494	6494	50° 1		BML
			1435:								→	A/C → 300°	BML
			1500:	294.6	298.6	8.2	4860	47536	6504	6504	60° 2		BML
			1504:								→	C/C END OF LINE #42	BML
			1510:								○	steady on 210°	
			1513:								○	slow to 4 kb to change guns	PM
			1526:								→	I/S → 6 knots	BML
			1530:	198.2	207.7	6.2	4860	47564	6471	6465	280° 14		BML
			1531:								→	I/S → 8 knots	BML
			1532:								→	A/C → 190°	BML
			1548:								→	C/C → 120°	BML
			1553:								→	XNC 120°	BML
			1600:	124.1	123.6	8.4	4850	47510	6386	6379	355° 17	1709.43 / 85° 22.93	EC
			1630:	120.2	120.4	8.2	4600	47537	6383	6373	355° 17	BEGIN LINE #43	EC
			1631:								○	C/C → 120 at 17°06.2 - 85°18.4	EC
			1700:	120.2	119.7	7.9	3800	47508	6386	6387	355° 18		EC
			1730:	120.2	119.3	7.5	3400	47473	6388	6388	360° 18		EC
			1800:	120.1	121.3	7.4	2320	47396	6383	6382	350° 18		EC
			1830:	120.0	119.6	7.9	2600	47333	6386	6386	355° 18		EC
			1838:								○	A dy. course to 116°	PM
			1900:	120.0	117.7	8.4	3350	47300	no data		355° 18	1658 85 / 8505-36	EC
			1930:	120.1	117.7	8.2	2690	47317	6426	6427	355° 18		EC
			2000:	120.2	116.4	8.3	2050	47368	6449	6453	355° 19		EC
			2030:	120.2	119	8.0	1670	47322	6467	6469	350° 15		EC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW 8909	1630	+4	2030	SWAN TRANSFORM FAULT	16°50'N	84°50'W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
13	Aug	89	2038:								0	SAT FIX@1900: 16°57.899 85°03.471 (EL 10 IT 4 CT 19)	EL
(225)			2042:								0	SAT FIX@2030: 16°52.11 85°52.96 (EL 16 IT 2 CT 27)	EL
			2100:	120.4	114	8.1	1510	47241	64696470	350	18	← Closer to course than (2050)	EL
			2130:	120.2	119	3.0	1695	47395	64616461	350	18	SAT FIX@2048: 16°50.91 84°50.18 (EL 74 IT 2 CT 29)	EL
			2200:	120.7	115	8.1	1700	47293	64466446	340	15		
			2206:								0	SAT FIX@2155: 16°46.81 84°43.30 (EL 24 IT 2 CT 24)	EL
			2230:	121.3	115	8.1	1980	47220	64286427	345	19		
			2235:								0	SAT FIX@2220: 16°45.35 84°40.03 (EL 53 IT 2 CT 34)	EL
			2300:	122.3	119	8.2	1975	47179	64206419	345	18		
			2300:								0	A/C 7.119	
			2335:	122.5	120	8.0	1760	47157	64276428	330	20		BML
14	Aug	89	0000:	123.5	121.2	7.9	1610	47128	64276427	330	18		
(226)											0		
			2342:								0	SAT FIX: 16°40.07 84°30.68 (EL=40, IT=2, CT=18)	PM
			0013:								0	A/C → 127°	BML
			0023:								0	C/C → 205 @ 16°37'329 - 84°26'434 END OF LINE #43	BML
			0026:								0	Pulling out Streamer for checking (XNC)	BML
			0030:	208.4	200.1	4.5	1350	47013	65076505	270	10		
			0045:								0	I/S 4 → 6 knots	
			0100:	206.9	207.1	5.8	1610	47083	64956498	280	12		BML
			0111:								0	C/C 305° @ 16°33'361 - 84°28'237	BML
			0119:								0	XNC @ 16°33'303 - 84°29'075 START OF LINE #44	BML
			0121:								0	A/C 300°	BML
			0130:	249.9	301.7	8.2	1710	47072	65096502	160	2		BML
			0200:	300.1	301.6	8.0		47129	65176518	180	2		BML



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	1203	+4	0203	SWAN TRANSFORM FAULT	16°36'34.0	84°34'04.0	HANN

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
14	AVG	89	0103									A/C 303	BML
(226)			0131									SAT FIX: 16°34.0 84°30.45 (EL: 35, IT: 2, CT: 34)	PM
			0230	300	304.4	8.0	1725	47111	65226	522	150° 4		BML
			0232									A/C 305	BML
			0300	300	307	8.1	1580	47147	65306	532	150° 4		BML
			0330	300.1	306.2	7.9	1760	47183	65306	530	190° 2		BML
Sat Fix			0253									SAT Fix 0255 16°39'825 - 84°40'968 EL IT CT 37 2 79	BML
			0359									RB (640 ft)	
			0400	299.7	306.2	5.5		47209			175° 6		
			0432	2998	3027	5.6	1550	47226	65486	549	155° 8		
			0439						65696	569			
			0500	2998	301.2	7.9	1550	47261	65696	569	150° 3		
			0530	2999	3019	7.8	1910	47265	65546	553	160° 6	← OSS9 - SAT FIX - 16°51.91'	
			0600	3002	303.1	7.8	2150	47349	65426	541	180° 6	EL 43 - IT 2 - CT 31. 85°02.32'	
			0630	299.9	302.6	7.7	2740	47332	65226	521	150° 6		
			0700	299.4	302.6	7.8	3380	47524	64914	493	150° 6		
			0730	299.3	304.2	7.2	4440	47575	64636	465	160° 6		ST
			0755									OKIDATA PRINTER FOR GRAVIMETER JAMMED AND CORRECTED	
			0800	2985	305	8.1	3950	47419	6465	-12	120° 10	SPRING TENSION READINGS ARE DIFFERENT RANGE	
			0816									DIGITAL-K COMPUTATION BY GRAVIMETER (END OF CALC ~ 0840)	
			0830	2975	303	8.2	4330	47461			110° 10	RIBBON CHANGED OKIDATA PRINTER	
			0845	297.5	292							ADJ/C	
			0900	300.5	293	7.9	4820	47469	63686	519	140° 5		
			0921									C/C EOL #44	
			0926									XNC	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW 8909	0530	+4	0930	Swan Transform Fault	17°04' N	85° 29' W	Mann/Rosenkrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
14	AUG	89	0930:	230.1	205	7.5	4830	47467	6434	6467	270° 12	SAT FIX (0830) 17° 03.60 85° 21.65 (EL 16 IT 2 CT 19)	
(226)			0958:	TURN								CL	
			1000:	TURN		7.6	4890	47495	6435	6441	TURN		
			1003:	119.0	119							XNC SOL #45 1019 SAT FIX - 17°01.43'	
			1030:	118.8	121	8.3	4450	47472	6360	6354	350° 21	85°29.39'	
			1100:	119.1	119	8.6	4175	47420	6356	6356	355° 21	EL 56 - IT 2 - CT 29	
			1130:	119.8	122	8.1	4550	47373	6367	6366	350° 22		
			1136:									Turned off Gravimeter P.C.	
			1139:									TURNED BACK ON " "	
			1136:									SAT FIX: 16°56.44 85°20.40 (EL 43, IT 2, CT 26)	PM
			1155:									change water column delay to 3 s	
			1200:	119.6	170	8.3	3410	47298	6397	6391	000° 22		BML
			1216:									A/C → 117°	BML
			1230:	119.8	116.2	8.5	2925	47290	6416	6419	000° 26		BML
			1300:	119.9	119.7	8.4	2340	47246	6442	6444	010° 22		BML
			1328:									A/C → 120°	BML
			1330:	120.0	119.6	8.3	1690	47206	6464	6466	010° 24		BML
SatFix			1329:59									SAT FIX 13:29.59 (13:30) 16°49'29 - 85°07'44 EL 35 IT 2 CT 33	BML
			1400:	120.0	119.6	8.4	1465	47250	6467	6468	000° 18		BML
			1430:	120.0	119.4	8.4	1300	47217	6469	6469	005° 18		BML
			1439:									GPS came back.	BML
			1500:	119.7	119.4	8.4	1240	47193	6464	6465	004° 18	A/C 118°	BML
			1530:	119.7	119.2	8.0	1105	47160	6461	6462	002° 18		BML
			1600:	119.8	119.7	8.0	1260	47127	6446	6445	15° 14		BML
			1630:	119.8	120.4	7.9	1580	47135	6429	6427	10° 14		BML



VESSEL NAME			CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave			MW 8909	1259	+4	1659	Sun Transform Fault	163516	844245	Mann

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
14	Aug	89	1700:	119.6	120.2	7.9			1840	47177	6411	6411	015	0	12		
			1730:	114.5	116.7	7.8			1850	47174	6404	6403	010	0	16		
			1800:	119.8	118.1	7.7			1850	47006	6395	6395	355	0	18		
			1814:													a/c 122 16° 30' 49" 84° 33' 658	
			1830:	120.0	126.4	7.8			1800m	47020	6394	6396	350	0	18		
			1832:													a/c 125 16° 29' 25" 84° 31' 47	
			1900:	119.9	128.1	8.0			1735	46955	6394	6394	350	0			
			1930:	119.8	126.6	8.2			1550	46911	6398	6399	350	0	14		
			2000:	120.3	125	8.0			1090	47045	6415	6417	340	0	15	SAT FIX (1834): 16 29.147 84 31.306 LL 15 17 3 CT 22	
			2012:													> EOL #45	
			2018:													> XNC	
			2020:													> c/c AVOID POTENTIALLY SHALLOW AREAS - COURSE 270 -	
			2026:													> SAT FIX 16 23.147 84 20.456 151 17 2 CT 27 (2003)	
			2030:	270	266.9	8.3			872	46992	6534	6553	180	0	0		
			2100:	271.5	267	8.0			1540	46964	6502	6501	165	0	4		
			2122:													> c/c to 300 -	
			2124:	300	295	8.2										> BEGIN LINE 76 - STADY ON 295 - SHOT# 10533	
			2130:	299.9	295	8.1			1555	46911	6483	6482	090	0	5	SAT FIX (2119): 16 21.503 84 27.048 LL 11 17 11 CT 19	
			2143:													> Phase down	
			2145:													> Phase up	
			2200:	300	295	8.1			1155	46923	6512	6517	100	0	8		
			2205:													> SAT FIX (2150) 16 23.323 84 30.633 117 17 CT 14	
			2230:	300	295	7.9			1575	46983	6498	6495	100	0	4		
			2255:	300.1	303											> ADJ/c 303°	
			2300:	300.1	303	8.5			1840	46986	6484	6489	90	0	9		



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW 8909	1900	+4	2300	SWAN TRANSFORM FAULT	16°27' N	84°39' W	Maria/Rosenblatt

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
14	AUG	89	2326	300	310								0	→ Adj C/310°	(D)
	(226)		2330	300	309	8.3	1840	47018	6494	6444		085	10		(D)
			2354	300	306									→ Adj C/306°	(D)
15	AUG	89	0000	299.9	304.9	8.6	1840	47114	6502	6502		092	10		BmL
	(227)		0030	299.9	305.7	8.3	1840	47172	6501	6501		090	12		BmL
			0100	299.8	306.1	8.3	1840	47054	6509	6509		120	16		BmL
			0124											→ A/C 303°	BmL
			0130	299.8	307.1	8.4	1785	47024	6526	6526		120	18		BmL
			0108											→ SAT FIX: 16°36.55 84°54.16 (EL=50, IT=2, CT=34)	Pm
			0200	300.0	304.5	8.3	1170	47066	6559	6561		120	10		BmL
			0230	300.0	304.7	8.4	1100	47078	6578	6581		120	10		BmL
			0231											→ SAT FIX: 16°42.46 85°05.51 (EL=24, IT=2, CT=33)	Pm
			0300	299.9	304.1	8.3	1010	47196	6589	6590		120	10		BmL
			0330	300.0	303.1	8.3		47213	6596	6597		150	16		BmL
			0400	299.9	303.1	8.4	1680	47141	6579	6577		130	10		(D)
			0430	300.0	304.7	8.4	2470	47185	6541	6537		120	10		
			0500	299.9	303.1	8.3	<del>2730</del>	47223	6494	6484		140	10		
			0530	300	303.1	8.5	4800	47320	6449	6448		120	8		
			0600	299.9	302.3	8.4	4560	47439	6439	6437		135	10		
			0630	299.6	302.6	8.7	4430	47490	6447	6449		145	10		
			0700	299.8	301.9	8.6	4810	47434	6474	6475		140	8		
			0730	301.8	301.7	8.7	4800	47427	6494	6496		140	6		
			0741											→ A/C → 205	17°05'41 / 85°46'81 EOL46 (D)
			0747											→ XNC (turn)	
			0800	201.6	205	8.0		47435	6473	6478		280	15	Watch change	(D)

SAT FIX 0549 -

16° 57.08'

85° 31.33'

EL43- IT 2 - CT 28.

3480m

SAT FIX

0751 17° 05.26'

EL = 34

85° 48.12'

IT = 2

CT = 32

A/C → 205  
XNC (turn)

17°05'41 / 85°46'81 EOL46



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	0400	+4	0800	SWAN TRANSFORM FAULT	17°04' N	85°48' W	Mann/Rosenkrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER	
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION		DIRECTION	KNOTS				
15	10	89	0822											0	→ <del>START</del> C/C	0807 SAT FIX -	(C)
(227)			0827	120										0	→ XNC SOL #47	17° 03.47'	(C)
			0830	120	113	7.9	4800	47397	63926	414		350	24			85° 49.00'	
			0900	120	117	8.4	4850	47426	63626	359		345	22			CL 3 - IT 3 - CT 19.	(C)
			0930	120	119	8.3	4930	47524	63416	340		350	23				(C)
			0950	120	125									0	→ Adj C 125°	0938 SAT FIX.	(C)
			1000	120	125	8.3	4900	47476	63286	328		350	20			16° 57.10'	
			1030	120	122	8.4	5025	47365	63376	337		350	20			85° 41.27'	EL 48
			1059	120	120									0	A/C	EL 20 IT 2 CT 26.	
			1100	120	119	8.4	3790	47277	63716	375		355	20				
			1130	120	113	8.3	WIND 2450	47239	64226	424		350	21			1119 SAT FIX.	
			1133		117									0	→ A/C	16° 49.96'	
			1200	120	117.6	8.6		47239	64746	480		270	22			85° 29.35'	(RML)
			1210	1		16° 46' 733		85° 22	870					0	→ C/C 204 EOL #47 (see position before)	EL 16 - IT 2 - CT 25.	RML
			1221											0	→ XNC 270°		
			1230	270	271.1	7.8	850	47255	66026	678		270	20	(A/C)			
			1234											0	→ A/C 275°		
			1300	270	274.2	8.2	1400	47272	65736	573		280	4				RML
			1318											0	→ C/C → 300°		
			1321											0	→ XNC → 300°	START LINE 68	RML
			1330	299.8	299.6	8.2	1990	47313	65516	548		170	4			16 16 174	RML
			1400	299.8	300.1	8.2	2790	47307	65116	507		150	4			85 31 958	
			1430	299.8	298.4	8.0	4320	47336	64506	444		110	4				
			1446											0	→ A/C → 302°		RML
Self fix			1430:17											0	→ Sat Fix: 14:30:17	16° 51' 16" - 85° 40' 81" EL 24 IT 2 CT 33	RML



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST
R/V MOANA WAVE				MW 8909		11 05	+4	1505	SWAN TRANSFORM FAULT				16°53'64S		85°45'16E		MANN/ROSENCRANTZ
DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER		
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	GRAVITY		SPRING TENSION	DIRECTION	KNOTS					
15	AUG	89	1500	300	301.2	8.2		5260	47442	64206	6416	090	8		BmL		
(127)			1529											A/C → 300°			
			1530	199.8	300.9	8.5		5100	47459	64316	6433	090	6		BmL		
			1600	211.7	300.6	8.5		47558	64626	6465		090	6				
			1618											A/C → 297	1659.150 / 8554.92		
			1630	229.9	301.1	8.4		47416	64836	6484		090	06				
			1700	300.8	301.2	8.0		47480	64936	6494		085	08	1705 SAT FIX 17 02 63 86 01.29			
			1711											C/C 205 17 02 77 86 01.63 EOL 48			
			1717											KNC 17 02.88 86 02.36			
			1730	201.6	120.2	8.0		47460	64756	6472		285	10				
			1746											C/C 120° 16 59.3 84 04.2			
			1753											XNC 16 59.59 86 03.9 BEGIN LINE 49			
			1801	120.5	120.2	8.0		47460	63796	6379		315	12	Adj gravity d.s.			
			1830	120.7	120.2	7.9		47423	63706	6368		315	20				
			1900	120.6	121.9	8.0		47400	63496	6347		340	15				
			1930	120.6	125.6	7.7		47424	63256	6323		300					
			1930	42										C/C 123 16 52 29 85 52 79			
			2000	120	125	8.0		5190	47352	63206	6319	330	13				
			2005											SATFIX(1918) 1653.029 8554.115 19 16 20	CO		
			2030	120	123	7.9		3752	47313	63596	6362	330	20				
			2040		119									ADJ COURSE			
			2100	120	121	8.0		2060	47249	64146	6420	330	18				
			2119											CHANGE COURSE END LINE 49 #18899			
			2130	120	207	8.9		1035	47223	65616	6563	260	6				



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW8909	1700	+4	2100	SWAN TRANSFORM FAULT	16°43' W	85°41' N	Mann/Rosenkrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
15	AUG	89	2152										SAT FIX (2105) 1646.051 8541.867 146 12 CT 29	CO
			2157	300									CC	CO
			2200	300	301	8.5	1040	47213	6581	6578	095	8	XNC START LINE 50	CO
			2230	300	302	8.2	1520	47215	6561	6564	090	5	SAT FIX 16° 45.01'	
			2300	300	300	8.3	3490	47205	6477	6471	120	10	2255 85° 50.19'	
			2330	300	301	7.7	5010	47265	6421	6415	100	10	EL 8 - IT 9 - CT 16	
16	AUG	89	0000	300	301	7.8	5280	47379	6411	6409	100	8		BML
			0030	300	301	7.9	4940	47323	6432	6435	120	6		—
			0019	300									SatFix 00:19:30 @ 16°50'99 - 85°59'81 18 2 20	BML
			0100	300	302	8.1	4850	47343	6457	6460	120	10		—
			0130	300	301	8.0	4780	47323	6477	6479	120	12		—
			0145										A/C → 304°	—
			0200	302	306	8.2	4600	47406	6491	6494	120	8		—
			0230	301	298	7.9	4540	47473	6507	6508	120	10		—
			0231										END OF LINE #50. C/C - @ 16°59'760 - 85°16' - 600	BML
			0207										SAT FIX 16°58.40 86°14.20 (EL-14, IT=2, CT=29)	PM
			0300	210	206	7.3		47412	6481	6479	270	18		—
			0308										C/C → 116°	BML
			0314										XNC @ 16°55'653 - 86°19'075. SOL#51	BML
			0325										A/C 118°	—
			0330	120	118.1	8.1	4640	47586	6392	6376	350	27		BML
			0400	120.2	118.7	8.1	4810	46443	6375	6374	350	26		—
			0430	120.0	117.1	7.8	4825	47288	6357	6350	345	24		
			0500	120.2	118.7	8.0		4736	6320	6318	355	20		



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
Mauna WAVE			MWS909		1:00	+4	0500	Swan Transform Fault		164844	860601	MANN

  

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER	
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS			
16	AUG	89	0505												
			(228) 0530	120.2	121.4	8.0	5450	47361	6303	6303	345	20	AIC 120 164844 860601	da	
			0600	119.8	120.4	8.1	4480	47279	6319	6320	345	25		ad	
			*0504											16 48 46 860617 / SAT FIX /	da
			0630	119.8	122.2	8.1	3550	47214	6376	6378	350	26			
			0700	119	119.7	8.2	1085	47207	6457	6469	360	20	16 40 77, 85 52.15		
			0708											CIC 205 16 40 25, 85 51 33 EOL	
			0714											XNC (TURN)	
			0730	217.2	202.2	8.4	1230	47206	6546	6544	300	20			
			0743											CIC (300) 16° 35' 36", 85° 52' 19"	da
			0750											XNC - START LINE #52 @ SHOT #22424.	
			0707											SAT FIX 0707 1640'7/85°51'6	
			0800 ← 0730	300	299	9.2	1245	47196	6555	6561	175	15			
			0800	300	277										
			0805			4.0									
			0810												
			0813												
			0814			9.0									
			0830	300	304	8.1	1090	47194	6551	6552	175	10			
			0855												
			0900	300	299	8.3	2770	47182	6488	6485	180	10			
			0930	300	300	8.2		47241	6412	6405	190	10			



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
MOANA WAVE	MW8909	0000	+4	1000	SWAN ISLANDS TRANSFORM FAULT	16°45'	36°09'	MHN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
16	AUG	89	1000:	300	302	8.0	5520	47337	6390	6380	170°	17	▶ SAT FIX @ 0933: 16°43.00 86°06.101 (EL 65/112/CT 33)	
(228)			1030:	300	300	7.0		47395	6407	6407	182°	12		
			1040:		297								A/C	
			1100:	300	297	8.0	4930	47314	6439	6442	170°	10	▶ SAT FIX @ 1025: 16°40.49 86°12.11 (EL 42/112/CT 30)	
			1130:	300	297	8.0	4630	47300	6464	6466	180°	12	▶ SAT FIX @ 1055: 16°42.48 86°15.75 (EL 9/240 112/CT 22)	
			1133:	300	303								A/C	
			1144:										SAT FIX @ 1121: 16°49.70 86°19.16 (EL 13/112/CT 29)	
			1200:	300	304	8.0	4420	47378	6480	6481	150°	14		BmL
			1230:	300	303	8.0	4510	47373	6496	6497	150°	4		-
			1235:										→ E/C → 200° EOL #52 @ 16°54'5 86°28'0	-
			1241:										→ XNC → 210 @ 16°54'677 - 86°28'386.	-
			1242:										→ A/C → 204°	-
			1300:	216	207	8.1	4320	47350	6477	6479	270°	16		-
			1312:										→ C/C → 117° @ 16°51'089 86°30'320	-
			1317:										→ XNC 117 @ 16°50'4 86°30'0 SOL #53	-
			1330:	120	117	8.0	4320	47331	6382	6365	280°	24		-
			1400:	120	117	8.0	4620	47278	6359	6357	355°	24		-
			1406:										→ A/C 121°	-
			1430:	120	120	8.1	5020	47250	6331	6330	350°	22		-
			1407:										→ SAT FIX: 16°47.58, 86°21.27 (EL=15, CT=27, IT=2)	pm
			1500:	120	121	8.1	5400	47281	6294	6297	350°	22		BmL
			1503:										→ Bridge Wran Fix: 16°43.5 86°17.3	pm
			1525:										→ R/S → 6 knots to check seismic	BmL
			1530:	120	117	5.8	5695	47273	6295	6292	350°	20		-
			1532:										→ Back to 8 knots (1/5)	-

ELECTRONICS LAB WATCH LOG "A"

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VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	1134	+4	1534	SWAN / BAY ISLANDS / FAULT	16°41'70	86°13'60	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER		
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
16	AUG	89	1600	120.9	122.6	7.7	4450	47179	63146	315	330	0	20		EC	
			(228)	120.3	121.9	7.5	<del>2620</del>	47196	63836	388	330	0	20		EC	
			1700	119.7	119.6	7.8	1110 m	47203	64446	452	340	0	22		EC	
			1712											C/C to 205	at 16°35.2 - 86°02.3 EOL #53	EC
			1717											XNC	at 16°34.5 - 86°02.2	EC
			1730	271.2	208.1	8.1	1280	47188	65226	532	270	0	17			EC
			1748											C/C to 300	at 16°31.2 - 86°04.2	EC
			1754											XNC	at 16°31.1 - 86°05.0 BEC. LIM #54	EC
			1800	299.7	297.9	8.0	1240	47140	65556	567	95	0	8			EC
			1830	299.8	298.4	7.5	980	47206	65526	551	100	0	8			EC
			1641											SAT FIX	at 16°37.3 - 86°06.0	EC
			1801											SAT FIX	at 16°31.7 - 86°05.8	EC
			1900	300.0	300.4	7.4	2150	47175	65116	511	120	0	8			EC
Sat Fix	x		1829											SAT FIX	@ 16°33.4 - 86°08.9	BML
			1930	300.1	300.3	8.1	3980	47125	64346	428	120	0	8			EC
			2000	300	303	8.2	5340	47126	63966	392	110	0	8			(10)
			2030	300	303	8.2	5030	47155	63966	396	045	0	9			(10)
			2100	300	301	8.1	4950	47180	64226	424	105	0	10			(10)
			2130	300	299	8.4	4600	47218	64486	450	105	0	11			(10)
			2135											→ SAT FIX (2112)	16°43.828 86°28.065 el 42 i/ 2 c 33	(10)
			2200	300	301	8.1	4260	47238	64736	475	105	0	10			(10)
			2215											→ SAT FIX (2156)	16°46.702 86°33.337 el 27 i/ 2 c 130	(10)
			2230	300	299	8.1	3940	47268	64966	497	110	0	11			(10)
			2249											→ C/C EOL 54	16°50.108 86°39.582	(10)
			2255											→ XINC		(10)



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW8909	1900	+4	2300	Swan Fault / Bay Islands	16°50' N	86°39' W	Mann/Rosencraants

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
16	AUG	89	2300	209.7	209	7.6	3830	47302	64896	500	250°	11	Transit on turn	
(228)			2310										SAT FIX (2300) 16°49.388 86°40.447 21d 2 J 24	CB
			2315	120									c/c	
			2330	120	119	7.8	3900	47230	64636	475	320°	22	→ 16°45.824 86°42.100 SOL # 55	
			2332										XNC	
17	AUG	89	0000	120	119.1	8.0	4300	47199	63726	368	350°	30		AmL
(229)														
			2344										SAT FIX: 16°45.01 86°40.48 (EL: 37, IT: 2, CT: 30)	pm
			0030	120	119	7.7	4640	47173	63496	348	350°	24		AmL
			0100	120	117	7.7	4850	47154	63286	327	350°	24		
			0130	120	120	8.0	4790	47101	63086	308	350°	22		
			0200	120	119	8.0	(4510)	47096	63116	312	350°	22		
			0230	120	119	8.0	3420	47104	63516	357	350°	26		
			0210										SAT FIX: 16°35.25 86°22.81 (EL: 12, IT: 2, CT: 26)	pm
			0253										205° ← C/C ENDOFLINE 55 @ 16°32' 509	AmL
			0259										XNC 205°	
			0300	211	205	8.4	1540	47150	64906	496	270°	16		
			0303										A/C 210°	
			0329										PIC → 300°	
			0330	213	239	7.7	1120	47079	65356	538	240°	16		
			0334										SOL # 56 @ 16°28' 348 86°20' 282	
			0400	209.7	295.9	8.2	2450	47112	64486	496	140°	10		dd
			0430	204.9	300.4	8.0	3400	47007	64536	415	130°	10		
			0500	209.7	303.4	8.4	4090	47028	64286	425	120°	6		
SAT	*		0436										SAT FIX 16°32' 46 86°27' 85	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V <i>Moana Wave</i>	<i>MW 8909</i>	<i>0100</i>	<i>+4</i>	<i>0500</i>	<i>Swan Fault / Bay Islands</i>	<i>163456</i>	<i>863200</i>	<i>Mann</i>

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
17	Aug	89	0530	299.6	301.4	8.2	4250	47041	641564	16	180	12		da
	(229)		0600	299.9	300.9	8.0	41510	47102	642764	28	150	6		da
			0630	300.4	300.9	7.6	4460	47199	64413.6	44	110	6		da
	SAT		0625										SAT FIX 1639.50 / 86°40.80	
			0700	300.7	303.1	7.9	4250	47252	646064	61	105	10		
			0730	299.7	300.9	7.9	39410	47358	647964	80	170	12		
			0744										C/C → 210 E.O.L. #56 1644.82 / 86°50.15	da
			0749										XNC (TURN)	da
			0800	208.5	211	8.2	3860	47347	647464	77	275	16	Watch change	
			0818										C/C	SAT FIX @ 809 16°41.93 86°52.30 (EL 55 IT 2 CT 30)
			0825	120									XNC S.O.L. #57 16°40.164 86°52.644	
			0830	120	115	8.1	3970	47330	637363	89	345	24		
			0900	120	115	8.2	4220	47287	635263	52	350	24		SAT FIX @ 910 16°37.527 86°47.162 (EL 41 IT 2 CT 33)
			0930	120	119	8.3	4330	47207	633363	35	350	22		SAT FIX @ 0950 16°34.97 86°42.32'
			1000	120	119	8.4	4040	47156	631963	22	340	18	10 sec SEISMIC DOWN	EL 19, IT 2, CT 22
			1030	120	119	8.5	4200	47045	631863	19	350	22		SAT FIX @ 1058 16°30.31 86°33.71 (EL 21 IT 2 CT 33)
			1100	120	119	8.5	3380	47038	634563	48	345	20		
			1117										C/C E.O.L. #57 16°28.940 86°31.223	
			1130	210	209	7.7	2220	47017	647564	81	275	12		
			1153										C/C to 300°	ML
			1259	300	301	8.1	1810	46973	65236	529	120	6	XNC on 300° @ 16°24'719-86°33'998 SOL# 58	BWL
			1137										SAT FIX: 16°26.80, 86°31.97 (EL 35, IT 2, CT 26)	PM
			1230	300	301	8.3	3150	46990	646164	54	120	8		BWL
			1221										SAT FIX: 16°26.29, 86°36.64 EL 67, IT 1, CT 33	PM
			1300	300	300	8.1	3965	47029	641864	12	130	8		

ELECTRONICS LAB WATCH LOG "A"

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VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST		
R/V MOANA WAVE				MW8909		0904	+4	1304	SWAN FAULT / BAY ISLANDS	16°29' 191	86°41' 863	MAHAI/ROSENCRANTZ		
DATE			GMT		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH	MAG.	GRAVIMETER		WIND	COMMENTS	OBSERVER
DAY	MONTH	YEAR						<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC		GRAVITY	SPRING TENSION	DIRECTION		
17	AV	89	13	30	300	300	8.2	4275	47116	6407	6465	120° 10		BmL
(229)			13	53									A/C → 296°	BmL
			14	00	300	297	8.5	4130	47234	6423	6423	130° 6		BmL
			*	1344									SAT. FIX 16°32.05 - 86°46.62 (EL8 IT2 CT23)	BmL
			*	1430	300	297	8.2	4150	47226	6439	6440	130° 10		BmL
			*	1410									SAT. FIX 16°33.43 - 86°50.29 (EL12 IT4 CT27)	BmL
				1453									A/C → 300°	BmL
				1500	300	302	7.9	3800	47200	6455	6456	120° 10		BmL
			*	1409									SAT FIX: 16°33.55, 86°50.22 (EL13, IT2, CT29)	PM
				1500	300	301	8.1	3595	47203	6469	6470	120° 8		BmL
				1533									GPS available.	-
				1535									A/C → 304°	BmL
			16	00	3025	3046	7.6	3350	47256	6474	6475	10° 8		dd
			OK 16	24									A/C → 300 16°42' 60 / 87°06' 22	dd
			16	30	2498	2497	8.0	3300	47236	6486	6486	120° 8		da
			16	40									C/C 210 16 43 63, 87 08 12	da
			16	46									XNC (TURN)	da
			17	06	2094	2076	7.8	3150	47262	6463	6463	270° 12		da
			17	18	2075	1864	7.4		47222	6461	6461	280° 14		da
			17	24									C/C 16 39.74, 87 10.84	da
			17	30	119.6	124.6	7.6	3100	47186	6381	6381	325° 22		da
SAT*			16	52									SAT FIX 16°42' 8 / 87°09' 09 @ 16:52	da
			18	06	119.7	124.7	7.7	3315	47173	6376	6376	330° 20		da
SAT*			18	02									SAT FIX 16°36' 87 / 87°06' 26	da
			18	30	119.5	123.2	7.6	3480	47158	6368	6367	330° 20		da



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave			MW 8909		15:00	+4	1900	SWAN FAULT / BAY IS		1633.12	8659.34	MANN

  

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
17	AUG	89	1837:00										SAT FIX 163443/870221	dg
			(224) 1900:00	1194	121.4	7.8	3670	47148	6351	6351	330°	20		do
			1930:00	1198	119.2	7.7	4070	47138	6330	6331	370°	20		
			2000:00	120	122	7.8	4040	47061	6313	6314	300°	20		
			2030:00	120	121	7.7					300°	20		
			2055:00	—	118								A/C	SAT FIX @ 2048: 16° 26.01 86° 47.03 (EL 28 H 2 CI 30)
			2100:00	120	118	8.1	3885	46924	6304	6306	305°	22		
			2130:00	120	117	7.8	3740	46877	6343	6347	300°	23		
			2200:00	120	122	7.4	2210	46919	6396	6403	300°	22		
			2202:00										END LINE #59. TURN TO 210°.	
			2208:00										STEADY ON 210°.	
			2230:00	210	203	7.9	1400	47016	6506	6515	210°	16		
			2237:00		300								CHANGE COURSE.	
			2243:00		300								ON COURSE - BEGIN LINE #60.	
			2255:00										SAT FIX @ 2236: 16° 17.48 86° 39.51 (EL 32 H 2 CI 34)	di
			2300:00	300	300	8.1	1950	46904	6495	6492	090°	20		
			2308:00										SAT FIX @ 2308: 16° 19.00 86° 42.66 (LL 69 H 2 CI 29)	di
			2329:00		302								A/C	
			2330:00	300	301	8.2	2950	46923	6446	6433	090°	20		
18	AUG	89	0000:00	300	302	8.4	3600	46802	6413	6415	090°	20		BML
			(230) 0030:00	300	304	8.3	4060	46894	6409	6407	090°	20		BML
			0100:00	300	303	8.3	(3770)	46955	6423	6423	100°	20		BML
			0130:00	300	304	8.2	3690	47103	6435	6434	100°	20		BML
			0200:00	300	304	8.0	3450	47146	6441	6440	090°	18		BML
			0217:00										A/C → 305°	



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE			MW 8909		1229	+4	0220	N/BAY ISLANDS		16°31'8	87°07'1	HANN/ROSENCRANTZ

  

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
18	AUG	89	0230	300	306	8.0	3220	47131	6456	6452	100°	16	[cleaning pins of Recorder/Sidescan processed]	BML
(230)	*	0147											SAT Fix 01:47 16°29'45 - 87°02'82 EL=17 CT=31	BML
		0300		300	306	7.8	2920	47159	6468	6466	110°	16		BML
		0330		300	302	8.1	2910	47189	6476	6473	100°	18		BML
		0334											C/C → 210° EOL #60 at 16°36'898 - 87°15'590	BML
		0340											XNC → 210°	BML
		* 0341											SAT FIX: 16°35.35, 87°13.08 (CL=60, IT=2, CT=32)	PM
		0400		211.3	206.6	8.1	2730	47185	6457	6458	240°	20		EC
		0410											C/C 120 at 16°33.1 - 87°18.4	EC
		0416											XNC at 16°32.6 - 87°15.2	EC
		0430		119.9	116.2		2800	47159	6365	6353	330°	24		EC
		0500		120.0	119.6	8.3	3100	47111	6351	6357	330°	25		EC
		0530		119.7	118.5	7.8	3400	47151	6345	6353	330°	25		EC
		0453											SAT Fix at 16°29.9 - 87°13.3	EC
		0600		119.5	117.4	8.0	2910	47167	6347	6353	330°	25		EC
		0630		119.4	117.1	8.0	2530	47068	6353	6365	330°	25		EC
		0552											SAT Fix at 16°26.4 - 87°07.3	EC
		0700		119.5	115.9	8.0	2940	46906	6348	6353	330°	23		EC
		0730		119.2	115.6	7.7	2480	46812	6361	6367	330°	25	SAT FIX @ 0725: 16°20.32 86°56.22 (CL=22, IT=2 CT=27)	EC
		0800		119.7	116.7	8.1	2250	46853	6375	6385	330°	25		EC
		0814											END OF LINE #60	
		0825											X/NL	
		0830		210	210	8.8	2040	46919	6468	6471	255°	12		
		0850			300	7.8	2040						C/C	
		0855											ON COURSE 300 - ON LINE #62	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV INDIANA WAVE	MW8909	05	+4	09	SWAN ISLANDS TRANSFORM FAULT	16° 13'	86° 52'	MANU ROSENKRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
18	AUG	89	0900:	300	304	8.3	1860	46910	64846	6491	110°	18		
			0906:										SAT FIX (1847) 16° 13.252 86° 51.108 el 27 it 2 ct 28	CB
			0911:										SAT FIX (1811) 16° 13.871 86° 53.925 el 33 it 2 ct 29	CB
			0930:	300	301	8.0	1770	46939	6493	6489	120°	16		
			1000:	300	300	8.4	2345	46918	6477	6476	120°	10		
			1030:	300	303	8.2	2430	46932	6460	6455	120°	18		
			1100:	300	302	8.5	1675	46986	6487	6487	120°	12		
			1108:										SAT FIX (1136) 16° 19.348 87° 04.339 el 32 it 2 ct 30	CB
			1130:	300	303	8.2	2320	47115	6467	6465	120°	18		
			1200:	300	303	8.1	2970	47154	6450	6447	120°	16		BML
			1230:	300	304	8.5	2810	47156	6448	6447	120°	10		BML
			1158:										SAT FIX: 16° 24.83, 87° 14.51 (EL-44, IT-2, CT-34)	PM
			1300:	300	304	8.0	2630	47166	6464	6463	120°	10		BML
			1317:										CIC EDL #62 @ 16° 30' 21 - 87° 24' 38	BML
			1322:										XNC on 210°	BML
			1330:	260	208	8.1	2580	47113	6447	6450	260°	18		BML
			1350:										CIC → 117°	BML
			1357:										SOL #63 at 16° 26' 45 - 87° 26' 80	BML
			1400:	120	121	7.7	2550	47090	6361	6373	330°	24	AIC → 120°	BML
			1430:	120	120	7.8	2600	47114	6351	6354	330°	24		BML
			1436:										AIC → 118°	BML
			1340:										SAT FIX: 16° 27.75, 87° 26.66 (EL-21, IT-2, CT-34)	PM
			1500:	120	118	8.1	2785	47038	6442	6445	330°	24		BML
			1530:	120	119	8.1	2120	47011	6364	6372	330°	24		BML
			1510:										SAT FIX: 16° 21.69, 87° 19.03 (EL-61, IT-2, CT-34)	PM



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MDANA WAVE	MW 8909	1150	+4	1550	BAY ISLAND	16°19'134	87°13'57	MAANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
18	AUG	89	1550:										C/C EOL# 63 @ 16°19'134 - 87°13'57	AmL
(230)			1557:										XNC 16 18.24, 87 13.30	
			1600:	210	205	8.1		46953	6478	6461	240	12		
			1624:										C/C 300 16 14.93, 87 15.38	
			1630:	141	263	8.7		46863	6482	648	317.5	6		SL
			1634:										XNC 16 14-89, 87 16.34	ST
			1700:	300	300		1625	46917	6488	648	89.5	10		8
			1730:	300	300	8.4	236.9	46955	6453	644	190	10		8
			1740:										SAT FIX 16 16 41 - 87 19.4	
			1800:	300	300		2550	47034	6446	649	90	10		
			1825:										SAT FIX 16 18 11 53, 87 22.9	
			1832:	300	292	8.2	2410	47067	6451	645	190	10		
			1846:										C/C 205 16 24.09, 87 32.75 EOL 64	
			1855:										XNC 16 23.84, 87 33.45 TURN	
			1900:	208	201	7.8		47056	6426	6427	135	8		
SAT			1852:										SAT FIX @ 1852 1623.90 / 8733.38	(dlb)
			1924:										C/C 120 1620.25 8735.20	
			1927:										XNC - S.O.L. 65	
			1930:	120.5	117.1	6.9	2375	47619	6358	6367	300	16		
			2000:	120	123	7.8	2400	46981	6346	6347	295	20		
			2010:										SAT FIX @ 1914 16°20.32 87°33.97 (EL-11 IT-2 (1-26))	(A)
			2018:	120	125								A/C	
			2030:	120	124	8.1	2260	46940	6346	6349	295	21		
			2100:	120	124	8.1	1300	46886	6363	6367	295	22		
			2108:	TURN									END LINE 65- C/C 210 -	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MONA WAVE	MW8909	17	+4	21	SWAN ISLANDS TRANSFORM FT.	16° 13'	87° 23'	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
18	AU	489	21 13:	210	208	7.8	1555	46764	6449	6466	220°	10	ON COURSE 210 - TIE LINE.	
			21 43:	300							°	→	CC 300°	Ⓢ
			21 48:	300							°	→	XNC SOL #66	Ⓢ
			22 00:	300	300	8.1	1545	46745	6467	6470	065°	18		
			22 30:	300	298	7.9	1730	46798	6459	6457	065°	13	SAT FIX @ 2233Z - 16°12.43 87°31.87 (EL-62 IT-2 CT-52)	
			23 00:	300	299	7.9	2100	46902	6443	6452	065°	12		
			23 02:		294						°		ADJ. COURSE.	
			23 30:	300	296	7.9	2150	46938	6442	6440	085°	18		
			23 33:		300						°		A COURSE 300.	
			23 59:	300	3						°	→	C/C 206° EOL #66. @ 16°17'887 - 87°41'747	AmL
(231)			00 00:	300	268	7.7	2160	47007	6440	6439	120°	14		BmL
			00 05:								°	→	XNC 208°	BmL
			* 23 36:								°	→	SAT FIX: 16°16.29, 87°38.87 (EL-27, IT-2, CT-34)	PM
			00 30:	212	215	7.5	2040	46998	6422	6421	190°	10		BmL
			00 37:								°	→	C/C → 120°	BmL
			00 43:								°	→	XNC 120° SOL #67 @ 16°13'38 - 87°43'80	BmL
			01 00:	120	118	8.2	1940	46846	6340	6330	300°	20		BmL
			* 00 20:								°	→	SAT FIX 16°15.02, 87°42.60 ELIS IT2, CT14	PM
			01 30:	120	120	8.0	1640	46872	6355	6363	300°	22		BmL
			02 00:	120	120	7.9	1375	46780	6377	6383	300°	22		BmL
			01 25:								°	→	SAT FIX: 16°10.35 87°38.75 (EL 32, IT 2, CT 34)	PM
			02 17:								°	→	A/C → 116°	BmL
			02 26:								°	→	C/C EOL #67 @ 16°06'45' - 87°31'30	BmL
			02 30:	280	184	8.9	870	46739	6407	6402	240°	10	[We have to turn to avoid two ships]	BmL
			02 32:								°	→	C/C 180°	BmL



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST				
R/V MOANA WAVE				MW8909		230 2235	+4	0235	NORTH OF HONDURAS				16°05'520		87°31'634		MAWMI/ROSENCRANTZ				
DATE				G M T		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER		WIND		COMMENTS				OBSERVER	
DAY	MONTH	YEAR							<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC			GRAVITY	SPRING TENSION	DIRECTION	KNOTS						
19	AUG	89	02	35													C/L → 270°				BmL
(231)			03	00		263	270	7.4	910m 46752	46752		6444	6504	100	10		C/L → 300°				BmL
			03	29																	BmL
			03	30		300	245	7.5	1450	46701		6429	6477	090	18						BmL
			03	31													XNC SOL #68 @ 16°05'50 87°38'95				BmL
			04	00		295.8	300.3	7.6	1440	46842		6453	6448	090	18						EC
			04	30		291	292	7.7	1700	46822		6435	6429	090	18						EC
			04	44													C/L 230 at 16°10.0 - 87°47.3 EOL #68				EC
			04	49													XNC at 16°09.7 - 87°41.8 BEG #69A				EC
			05	00		232	230	7.7	1770	46864		6424	6424	300	20						EC
			05	27													A/C 235 at 16°06.6 - 87°51.9				EC
			05	30		232	235	8.1	1750	46808		6423	6422	210	20						EC
			06	00		230	230	8.2	1610	46752		6424	6424	210	20						EC
			06	01													A/C 120 at 16°03.9 - 87°55.6 END #69A				EC
			06	03													XNC TURN to 69b				EC
			06	30		121	115	7.2	1470	46709		6334	6330	355	18						EC
			06	40													C/L to 050 at 16°01.0 - 87°52.1				EC
			06	45					1540								XNC at 16°01.2 - 87°51.5 BEG #69B				EC
			07	00		051	048	8.7	<del>1480</del>	46693		6345	6345	030	10						EC
			07	27													SAT FIX at 16°01.9 - 87°53.7				EC
			07	30		055	052	8.2	1450	46743		6343	6341	030	15						
			07	54													C/L 075 TRANSITARY WAY POINT 139. EOL 69/SOL 70				
			08	00		075	076	8.2	1625	46795		6342	6422	350	10						
			08	30		075	075	8.1	1425	46821		6354	6357	350	22		SAT FIX @ 0823: 16°08.479 87°40.178 (EL 17 IT 2 CI 21)				
			09	00		075	075	7.6	1450	46792		6363	6365	360	20						



DATE			GMT	INTEND TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
19	AUG	89	0930	075	075	8.1	1590	4685	6361	6363	335	22		CG
		(231)	1000	76.9	075	7.8	1790	46873	6364	6364	355	18	SAT FIX @ 1013: 16° 12.619 87° 25.290 (EL=49 IT=2 CT=28)	
			1030	80.0	77	8.1	1610	46790	6365	6366	000	20		
			1032										C/C 082	
			1100	478	81	8.0	1300	46848	6383	6386	000	20	SAT FIX @ 1025: 16° 13.15 87° 23.60 (EL=50 IT=2 CT=26)	
			1121										end line 70 C/C	
			1130	84.5	85	8.5	1660	46901	6379	6380	000	21		CG
			1136										SAT FIX 16° 14.630 87° 13.854 (EL=29 IT=2 CT=30)	
			1200	84.5	88	8.5	2030	46800	6363	6363	000	22		BmL
			1230	85.7	87	8.4	2410	46855	6364	6342	000	22		BmL
			1300	88	86	8.2	2280	46887	6354	6356	000	20		BmL
			1319										C/C EOL#71 @ 16° 16' 2 - 86° 58' 9 / RIB →	BmL
			1330	86	87	6.4	1710	46876	6410	6420	000	20	<del>RECOVERING</del> (RECOVERY-) Recovering Seafloor II	BmL
			1332										power down on mag	MK
			1346										Turned OFF the Recorders of Seafloor II	BmL
			1352										PIC (⇒ WP #142) SOL #72	BmL
			1400	102	102	4.4	1735	NO MAG	6409	6408	350	18	1/S → 8 knots (NO seismic, NO mag, NO SMTI)	BmL
			1430	103	101	7.9	2130	NO MAG	6370	6367	330	20	C/C → 102°	BmL
			1441										I didn't record position of EOL 71 / SOL 72 at 1400	Bm
			1458										A/C → 106°	BmL
			1500	104	106	8.1	1640	—	6391	6392	000	18		BmL
			1530	105	106	7.7	780	—	6438	6443	350	20		—
			1600	107.3	108.9	7.7	500m		6466	6466	355	20		
			1611										C/C → 075 1612.51 / 8638.04	
			1614										XNC	



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Waia	MW 8904	12:30	+4	16:30	North of Honduras	16 12 82	86 36 80	Minn Rosenblatt

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
19	Aug	89	1630	075	080.6	3.3	740		6463	6466	000° 12		dd
			1631								→		
			1635								→		da
			1640								→		dd
			1641								→		dd
			1700	074	074.4	9.1	940	46916	6415	64114	355° 15		dd
			1636								→		dd
			1659								→		dd
			1730	074.1	075.6	8.6	1360	46892	6400	64110	000° 18		dd
			1800	074.3	075.6	8.0	1365	46878	6396	63995	000° 16		dd
			1817								→		dd
			1804								→		dd
			1830	074.2	077.9	8.3	1300	46854	6393	63992	350° 18		dd
			1900	074.4	077.9	8.4	1110.0	46852	6398	63998	330° 18		dd
			1855								→		dd
			1930	074.1	077.1	8.2	1400	46998	6393	63992	335° 16		dd
			2000	073.5	077	7.9	1240	46952	6414	64114	325° 13		dd
			2016								→		dd
			2030	090	092	7.8	1400	46949	6405	64006	355° 16		dd
			2100	090	094	7.7	1380	46973	6396	63995	355° 13		dd
			2130	090	093	8.0	1330	46992	6394	63994	330° 14		dd
			2200	090	093	7.9	1200	47015	6394	63994	325° 14		dd
			2215	TURN		7.9					→		dd
			2221								→		dd
			2300	180	183	7.9	1100	46933	6453	6460	270° 8		dd

Redeploying port gun  
 Redeploying starboard reel  
 Redeploying Sea-Marc II  
 TIs 8 kts  
 SAT FIX 16° 12.95 / 86° 36 09  
 Printronix Restarted  
 a/c 78° 16 16.47, 86 23.11  
 SAT 16 16 01 / 86 24.90  
 SAT 16 17 96 / 86° 18 15  
 SAT FIX (1955) 16° 19.992 86° 09.988 155 12 25  
 cc - 074 - and 073 -  
 c/c 180 - END LINE 74 DEPTH  
 XNC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave	MW8909	1900	+4	2300	TELA TO BARRA DE CARATASCA	16°19'N	85°50'W	Mann/Rosenkrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
14	AUG	89	2241										0	SAT FIX (2151) 16°20.454 85°54.118 el 42.17	ct
	(23)	1	2249	TURN									0	C/C TO 270°	
			2259	270 270									0	STEADY ON COURSE 270 - START LINE 75	
			2300	270 270	8.1	970	46886	65096616	035			5			
			2330	270 272	8.3	1160	46904	64936493	095			4			
			0000	270 272	8.4	1290	46884	64896488	095			4			
			0013										0	a/c to 274	
			0030	270 274	8.4	1375	46899	64846483	090			4			
			0052										0	C/C EOL 75 @ 16°16'0 - 86°07'12	Bm
			0053										0	XNC 257° SOL 76	
			0100	254 256	8.5	1405	46896	64816481	190			2			
			0130	254 254	8.3	1405	46778	64796479					0		
			0102										0	SAT FIX 10°15.55 86°08.33 (EL 42, IT 2, CT 34)	Pm
			0200	254 254	8.2	1390	46781	64806480	145			4			
			0230	253 253	8.4	1300	46652	64856485	220			6			mk
			0300	255 257	8.3	1305	46616	64826482	190			2			
			0225										0	SAT FIX: 16°12.74, 86°19.26 (EL 29, IT 2, CT 34)	Pm
			0330	255 258	8.5		46664	64856485	260			8			
			0351										0	EOL H 76 at 16°09'6 - 86°31.1	Bm
			0350										0	XNC 16 08° 92, 86 31.31	
			0400	164 165	11.8	1190	46784	64186426	250			10			g
			0415										0	C/C 070 at 16°05.5 - 86°30.3	cc
			0430	74 88	7.1	850	46902	64026413	350			10			cc
			0433										0	XNC at at at at at chow! 16°05.2 - 86°29.5	Ge
			0413										0	SAT FIX at 16°07.0 - 84°30.5	Ge



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave	MW8909	0100	+4	0500	Tela Basin	16°13' N	86°00' W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			DIRECTION	KNOTS		
20	AUG	89	0500	74	74	8.2	1070	47080	6377	6375	350	0	20			Ec
			(232) 0530	74	72	8.3	1100	46985	6382	6381	010	0	20	A/C to 74		Ec
			0519											SAT Fix	at 16°07.17 - 86°25.04	Ec
			0600	74	74	8.4	900	46912	6385	6383	000	0	20			Ce
			0630	74	74	8.2	1030	46906	6385	6385	355	0	20			Ec
			0700	74	73	8.0	1230	46905	6379	6378	000	0	18			Ec
			0730	73	77	8.8	1290	46889	6379	6378	000	0	20		0743 SAT - 16°13.05' 86°02.80' [12-2-23]	Ec
			0800	74.5	074	8.0	1170	46874	6384	6384	010	0	14			(B)
			0830	74.9	075	8.1	1120	46906	6385	6385	010	0	14			(B)
			0900	74.9	075	8.0	970	46875	6390	6390	020	0	14			(B)
			0930	74.8	077	8.1	970	46896	6396	6396	025	0	13		0930 SAT - 16°17.07 85°47.62' [16-2-13]	(B)
			1000	75.0	079	8.4	1010	46916	6399	6400	030	0	14		0950 SAT 16°17.84 85°44.57' [16-2-34]	(B)
			1030	75.2	075	8.2	1015	46953	6402	6402	045	0	12		1112 SAT Fix - 16°21.33 85°33.02' [23-2-33]	(B)
			1100	78.2	075	8.3	1000	46964	6405	6405	060	0	8			
			1130	106.0	080	8.6	1010	46978	6405	6407	060	0	7		C/C to 102° EOL #77 SOL #78	(B)
			1200	103	105	8.4	1175	46955	6393	6391	040	0	10			BmL
			1230	103	105	8.6	1155	46936	6393	6393	030	0	8			BmL
			1300	105	105	8.4	1065	46928	6393	6394	000	0	6			BmL
			1314												A/C → 107°	-
			1330	105	105	8.4	1220	46977	6382	6382	000	0	12			BmL
			1342												C/C to 82° (EDL#78 @ 16°17' 989 - 85°10' 932	mk
			1343												XNC SOL#79 @ 16°18' 0 - 85°10.8	BmL
			1400	79	82	8.4	1220	46905	6380	6379	025	0	16			BmL
			1137												SAT FIX: 16°21.9 85°29.2	
			1300												SAT FIX: 16°19.51, 85°17.14 (EL 40, 172, CT 30)	Pm



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	1005	+4	1405	NORTHERN COAST OF HONDURAS	16°18'	87°07'	HANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
20	AUG	89	1430	79	80	8.6	1150	46930	6389	6391	20	12		BML
(1232)			1500	76	80	8.4		46966	6380	6379	20	14		BML
			1504										A/C 076°	BML
			1523										CIC → 300° ⇒ EOL 79 @ 16°20.6 - 84°56'54	BML
			1530	300	320	8.5		47026	6434	6412			(TURNING)	
			1532										XNC ⇒ SOL 80 @ 16°21.524 - 84°56'624	BML
			1600	299	302	8.3	1260	46917	6495	6498	305	2		
			1630	300	294.4	8.1	920	47084	6527	6522	315	4		
			1632										A/C 302 1625 05/850379	
			1700	299.8	299.2	7.7	1020	47182	6520	6520	316	2		
			1727										E.O.L # 80 CIC - 029.	
			1730	237.8	252.6	7.8	1300	47189	6512	6511	320	0		
			1732										XNC	
			1800	030	032.4	8.0	1010	47358	6463	6463	25	5		
			1803										A/C 120	
			1804										A/C 120	
			1830	119.8	123	8.0	1300	47352	6425	6421	300	12		
			1900	119.5	119.2	8.2	1250	47293	6413	6414	335	10		
			1828										XNC	
			1930	119.4	118.2	8.0	1000M	47142	6426	6426	350	10		
			2000	120	119	8.0	1440	47090	6405	6404	335	13		
			2009	120	116	8.0							SAT FIX @ 1937 16° 26.868 84° 56.981 (EL = 7.11 - 4 CT = 11)	BAD FIX
			2030	120	115	8.0	1670	47089	6389	6388	335	13		
			2100	120	117	7.9	1300	47065	6396	6397	345	16		
			2130	120	119	7.8	1110	46913	6403	6404	345	20		
													SAT FIX @ 2122 16° 19.905 84° 43.911 (EL = 21.17 - 3 CT = 12)	



VESSEL NAME			CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	=	GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave			MW8909		1700	+4		2100	Camaron Basin		16° 22' N	84° 48' W	Mann/Rosenblatt

DATE			G M T		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC		MAG.	GRAVIMETER		WIND		COMMENTS		OBSERVER
DAY	MONTH	YEAR									GRAVITY	SPRING TENSION	DIRECTION	KNOTS			
20	Aug	89	22	00	120	119	7.6	1020		46875	6404	6410	340	16	CC to 210°	EOL # 81	(P)
(232)			22	07	210										→	XNC	(P)
			22	13											→		(P)
			22	15	000										→	CC to 000°	(P)
			22	25											→	Avoid shallow area 500m	(P)
			22	30	060	001	7.4	980		46886	6416	6419	65	12	New way point # 155 MW # 6 given to bridge & MW → 16° 21.6 84° 37.5		(P)
			22	49	300	800									→	CC to 300°	(P)
			23	00	300	301	8.5	1150		46949	6511	6502	165	5	<del>XNC</del> <del>50L # 82</del>		(P)
			23	49											→	FOR NEW ERROR MESSAGE ON MASSCOMP (STEVE FIXED)	(P)
			23	54											→	50L # 2	(P)
			23	59											→	Change paper in recorder # 4 (3.5 + PROSIDESCAN)	(P)
			23	59											→	SAN CRIDE 2309 16° 22.874 84° 39.577 (EL-45 IT 2 CT-28)	(P)
			23	30	300	303	8.8	1420		46945	6504	6505	165	6		Adj/c 305°	(P)
			23	37	300	305°									→		(P)
21	Aug	89	00	06	300	304	8.0	1790		47109	6493	6451	170	4			(P)
(233)			00	30	300	307	7.9	1650		46976	6498	6499	170	8			(P)
			01	00	300	309	8.2	1515		46182	6508	6509					(P)
			01	39												SAT FIX: 16° 28.67, 84° 50.00 (EL-56, IT-2, CT-31)	(P)
			01	30	300	304	8.3	1580		47224	6512	6512	180	6			(P)
			02	00	300	305	8.2	1540		47226	6518	6518	150	4			(P)
			02	18	300-3												(P)
			02	24	44												(P)
			02	24	58												(P)
			02	26													(P)
			02	30	77	72											(P)



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave	MW8909	1700	+4	2100	Camaron Basin	16°22' N	84°48' W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
20	AUG	89	2200:	120	119	7.6	1020	46875	6409	6410			340° 16		(P)
			(232)	210	210								→	CC to 210° EOL #81	(P)
			2213:										→	XNC	(P)
			2215:	000									→	CC to 000° Avoid shallow area 500m	(P)
			2225:										→	New way point #155 MV #6 given to bridge + MW	(P)
			2230:	000	001	7.4	980	46826	6465	6479			65° 12	→ 16° 21.6 84° 37.5	(P)
			2249:	300	300								→	CC to 300°	(P)
			2300:	300	301	8.5	1150	46949	6511	6502			165° 5	<del>SOL #82</del>	(P)
			2249:										→	got new error message on MASSCOMP (steve P Fixed)	(P)
			2254:										→	SOL #2	(P)
			2310:										→	change paper in recorder #4 (3.5 + Proc SIDESCAN)	(P)
			2309:										→	SAT FIX @ 2309 16° 22.874 84° 39.577 (EL=45 IT=2 CT=28)	(P)
			2330:	300	303	8.8	1420	46943	6504	6505			165° 6		(P)
			2337:	300	305°								→	Adj/c 305°	(P)
21	AUG	89	0000:	300	304	8.0	1790	47109	6493	6451			170° 4		(P)
			(233)	300	307	7.9	1650	46976	6498	6499			170° 8		(P)
			0100:	300	309	8.2	1515	46182	6508	6509					(P)
			0039:											SAT FIX: 16° 28.67, 84° 50.00 (EL=56, IT=2, CT=31)	(P)
			0130:	300	304	8.3	1580	47224	6512	6512			180° 6		(P)
			0200:	300	305	8.2	1540	47226	6518	6518			150° 4		(P)
			0218:	300-3'										EOL 82	(P)
			0224:44											END OF SURVEY	(P)
			0224:58											MAGY OFF	(P)
			0226:											EEL OFF	(P)
			0230:	72	72	6.0	1410							XNC 0720	(P)
														R/S → 4 knots 50 ft transit	(P)



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV HOANA NAME	MW8909	2230	+4	0230	CAYMAN TROUGH			THANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
21	AV	68	9	0233								45 → 6 Air GUN - MAGN. Retrieving	
				(233)								1/5 → 6	
				0235								Steady on 6 kts.	
				0237								Ed secured	
				0243									
				0300	72	79	5.7	1700	6437	6433			
				0321								Seamure in board - full stop to retrieve drogue	
				0330	79	79	0.9	1790	6474	6481			
				0331								Everything in board - return to 10 kts	
				0343								MAGY - PORT DEPLOYED PORT	
				0406	72.2	75.7	10.5	1430	47142	6411	6413	020° 20	
				350									
				409									
				430	72.2	75.4	10.7	1240	47153	6431	6431	015° 20	
				0435									
				0500	72.1	74.9	10.6	1780	47167	6408	6407	015° 20	
				0530	72.2	73.1	10.5	1990	47225	6400	6399	020° 20	
				0600	72.2	73.4	10.7	2010	47214	6395	6394	005° 21	
				0630	72.2	72.9	10.6	2000	47300	6395	6395	005° 20	
				0700	72.2	73.4	10.3	1990	47312	6396	6394	000° 21	
				0730	72.1	71.6	10.4	1860	47324	6405	6406	000° 20	
				0800	72	74	10.4	1730	47325	6418	6419	010° 20	
				0830	72	73	10.4	1420	47324	6432	6434	010° 22	
				0900	72	73	10.5	1460	47341	6434	6433	020° 19	
				0930	72	73	10.4	1350	47321	6441	6441	015° 19	
												SAT FIX @ 0658: 16° 42.197 84° 23.486 (LL=1911 = 2 CT = 24)	
												SAT FIX @ 0845 16° 53.869 84° 05.121 (LL=36 15 = 2 CT = 28)	
												SAT FIX @ 0914 16° 55.61 84° 00.06 (LL=16 11 = 2 CT = 12)	



DATE			G M T		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER			WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR						<input type="checkbox"/> M	<input type="checkbox"/> WSEC		GRAVITY	SPRING TENSION		DIRECTION	KNOTS		
21	Aug	89	1000		72°	74°	10.4		1670	47361	6432	6432		010°	20		(BP)
					72°	73°	10.6		1940	47382	6417	6416		010°	21	SAT fix @ 1049Z 17°00.508 83°43.621 (LL 17 01 025)	(B)
(233)			1030		72°	74°	10.2		1900	47384	6419	6420		010°	22	SAT fix @ 11:02Z 17°01.23 83°41.40 (LL 17 02 025)	(B)
			1100		72°	73°	10.4		1620	47382	6439	6440		020°	20	SOG - 9.8 C/A - 0454Z 21.19.89 (234)	(B)
			1130		72°	73°	10.6		1390	47421	6461	6460		010°	20		(B)
			1200		72°	73°	10.3		1750	47475	6451	6454		008°	22	SAT fix @ 12:38Z 17°06.611 83°24.835 (EL 50 172 CT34)	(B)
			1230		72°	72°	10.4		1605	47507	6456	6458		006°	20		(B)
			1300		72°	73°	10.7		1630	47507	6461	6463		006°	22		(B)
			1330		72°	73°	10.9		1660	47512	6465	6462		004°	22	SAT fix @ 14:02Z 17°14.310 - 83°16.193 (EL 26 172 CT 26)	(B)
			1400		72°	73°	10.7		1715	47502	6472	6471		004°	20		(B)
			1430		74°	73°	10.7		1930	47475	6469	6467		006°	21		(B)
			1500		75	73	10.6		1870	47448	6473	6471		004°	21		(B)
			1600		72.7	78.4	10.7		2060	47511	6467	6461		010°	27		(B)
			1630		72.7	78.6	10.6		2180	47503	6456	6456		020°	18		(B)
			1612													SAT fix 17°19.51 82°46.52	(B)
			1700		72.7	78.7	10.2		2020	47516	6466	6466		010°	20		(B)
			1730		72.8	78.6	10.4		2150	47538	6473	6473		010°	20	SAT fix 17°23.67 82°32.99. @ 17:31	(B)
			1800		72.7	83.4	10.2		2360	47478	6466	6461		010°	20		(B)
			1830		71.6	83.1	10.6		2550	4697	6459	6457		000°	21	SAT fix at 17°28.20 - 82°23.74	(B)
			1815														(B)
			1900		72.5	81.4	10.5		2130	47552	6470	6470		000°	10		(B)
			1930		72.4	81.1	10.5		2350	47549	6471	6470		000°	20		(B)
			2000		72.2	75	10.7			47631	6465	6464		010°	18		(B)
			1950														(B)
			2012														(B)



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE				MW8909		1630	+4	2030	TRANSIT OVER CAYMAN TROUGH	17°32	82°00	MAUN/ROSENKRANTZ

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
21	AUG	89	2030											
(233)			2100										SAT FIX (2046) 17°32.547 82°00.142 el 13 i 128 23	
			2100											
			2130											
			2130										SAT FIX (2021) 17°34.225 81°54.337 el 29 i 204 24	
			2200											
			2230											
			2300											
			2251										SAT FIX (2251) 17°38.668 81°39.816 el 9 i 204 17	
			2309										SAT FIX (2309) 17°39.507 81°36.888 el 34 i 204 28	
			2330											
22	AUG	89	0000										SAT FIX @ 0016 22 AUG 89 17°42.9' 81°25.8' EL 63 IT2 CT29	MK
(234)			0030											MK
			0100											MK
			0130										SAT FIX @ 01:38 17°47'73 - 81°12'09 EL 20 IT2 CT30	BML
			0200											BML
			0230											BML
			0300											BML
			0322										Reduce speed 4 kts to deploy drogue (Mag. off)	B-L
			0330											BML
			0337										Seamarc in water	
			0357										1/5 → 6 knots	BML
			0400										SAT FIX @ 03:27 17°53.021 - 80°54.304 EL 17 IT CT 42/12/17	EC
			0410										I/S 10 knots 17 54 21, 80 51 58	
			0429										a/c 080 17 55 022 80 48 64	



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Manna Wave				MN 8909		0030	+4	0430	2 <sup>nd</sup> Survey Cay Trough	17°55'	80°48'	Mann

  

DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
22	Aug	80	0430	080	82	9.2	3640	47697	6445	6439	355	16	1755 04 8048 58	ST
	(23)	4	0448										CIC 170 1755 47 8046 56	
			0445										Sat Fix 17°55' 39 80° 46 13	
			0506	119.9	121.7	10.0	4050	47675	6451	6453	320	16		
			0530	119.3	120.7	10.0	4150	47224	6460	6461	320	16		
			0606	119.0	115.0	10.0	7056	48148	6488	6481	330	18		
			0626										E.O.L 83 CIC 025	
			0630	025	054	9.9	7000	47961	6489	6489	330	20		
			0635											
			0656											
			0700	299	327	9.8	3500	47830	6515	6447	030	19		
			0702										XNC S.O.L 84.	
			0730	299.1	303.9	9.7	41750	47562	6552	6552	410	12		
			0715										1753.37 / 80°31.39 SAT	
			0800	300	300	9.7	4770.	47135	6561	6560	040	15		
			0830										SAT FIX 0800: 17°57.07 80°38.91 (EL=68° IT=2 CT=34)	
			0835										END LINE #34. CHANGE COURSE 030-	
			0841	030									XNC	
			0900	030	025	9.4	4675	47926	6506	6492	000	20		
			0905										CIC to 120	
			0912										SOC #85	
			0930	120	119	10.2	4240	47960	6474	6470	300	15	SAT FIX 0915: 18° 04.121 80° 41.668 (EL=23° IT=2 CT=22)	
			1000	120	119	10.2	3990	47917	6480	6479	310	18		
			1030	120	119	10.2	4800	47661	6457	6457	300	16		
			1100	120	120	10.1	4770	47532	6421	6417	305	13		



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave	MW8909	0700	+4	1100	2 <sup>nd</sup> Survey - Cayman Trough	17°55' N	80°25' W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
22	AUG	89	1130	120	119	10.2	3600	47864	6427	6427	320	14	Sat Fix @ 1102: 17°55.473 80°25.661 (EL 28° IT=2 CT=24)	EL
	(234)		1200	120	120	10.1	3315	48052	6430	6430	350	14		BmL
			1227										A/C → 120°	BmL
			1230	120	120	10.1	3255	47922	6422	6420	350	18	Sat Fix @ 12:15 17°49'89 - 80°14'39 (EL=57, IT=2, CT=39)	BmL
			1244										EDL#85 @ 17°47'525 - 80°10'175	BmL
			1249										XNC (TURN) (85→80) XNC 30°	BmL
			1300	30	297	9.9	3200	47901	6457	6462	000	18		BmL
			1245										SAT FIX: 17°49.89, 80°14.39 (EL 57, IT 2, CT 39)	PM
			1310										C/C → 298°	BmL
			1315										XNC 298 @ 15°51'61 - 80°08'32" SOL#86	BmL
			1330	300	299.1	10.2	3610	48024	6535	6554	032	4		BmL
			1350										A/C 302°	BmL
			1400	300	302	10.0	4350	47778	6521	6519	035	14		BmL
			1338										SAT FIX: 17°53.29, 80°11.60 (EL 23, IT 2, CT 32)	PM
			1430	300	301.6	9.7	4810	47505	6526	6526	030	18		BmL
			1500	303	302	10.0	4810	47683	6566	6567	030	16		BmL
			1530	307	303	9.8	3080	47871	6637	6644	036	18		BmL
			1538										A/C → 309° (GPS Back 1543)	BmL
			1547										C/C 030° EOL 86 @ 18°04'329-81°31'872	BmL
			1552										XNC (turn). 180514 803198	
			1600	342	339	9.8	35410	48046	6535	6530	030	20		
			1615										C/C 120° 18°08'162, 80°30'0	
			1621										XNC 180833 / 802914	dk
			1636	1144	1187	9.9	3820	47103	6521	6522	325	18		
			1700	1192	120.4	9.8	3160	47942	6542	6546	328	18		



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Noana Wave	MW8949	1300	+4	1700	THE Cayman Trough SURVZ	18°05.1	80°23.45	HANN/ROSENKRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER			WIND DIRECTION	WIND KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M	<input type="checkbox"/> MSEC		GRAVITY	SPRING TENSION					
21	AUG	89	1730	119.4	115	9.7	4300		47829	64466	1157		340	16		(do)
234			1800	114.6	112.9	9.6	41820		47582	63976	317		350	16		(do)
			1830	119.7	117.2	9.8	4780		47596	63846	382		330	15		(do)
			1733													
			1900	119.6	118.2	9.8	4250		47796	63876	389		325	14		(do)
			1930	119.7	118.4	9.8	3700		47715	64076	409		370	16		(do)
			1928													
			2000	120	119	9.8	3000		47808	64296	431		325	15		
			2030	120	117	9.7	3150		47723	64486	450		325	14		
			2032													
			2037													
			2053													
			2100	030	032	10.1	2720m		47878	64686	469		010	18		
			2101													
			2107	300												
			2130	300	303	10.3	4000m		47969	65426	553		060	10		
			2137													
			2200	300	303	9.9	4640		47840	65106	506		050	10		
			2230	300	301	10.1	4810		47682	64916	487		060	12		
			2300	300	301	9.9	4830		47702	65026	499		060	10		
			2327	300	298											
			2330	300	299	10.0	4750		46582	65406	540		060	10		
			2353													
			2358													
23	AUG	89	0000	32	29	9.5			47954	65706	598		005	22		

SAT FIX 180266/801863

SAT FIX 175378/8601.90

EOC 87  
XNC

SAT FIX (2042) 17°49.467 79°51.522 el 64.1 20730 CB

CC 300°

XNC SOL 88

SAT FIX (2114) 17°53.421 79°51.079 el 12.1 20721 CB

SAT FIX (2158) 17°57.197 79°57.864 el 76.1 20725 CB

Adj C 298

CC 030°

XNC 028° 1/5 → 10

EOL 88



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 89 09	2004	+4	0004	CAYMAN TROUGH+1 - Survey 2	18°08'2	80°15'2	HANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER				WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION					
23	AUG	89	0021											C/C 118°	BML
(234)			0027											XNC SOL 89 @ 18°10'8 - 80°12'5	BML
			0030	120	119	9.5	?	48051	65796	589		330°	22		BML
			0031											A/C → 120°	BML
			0100	120	121	9.9	4620	47947	65776	572		330°	21		BML
			0130	120	118	9.7		47863	64206	419		330°	18		BML
			0114											SAT FIX: 18°07.03, 80°06.33 (EL=14, P=2, CT=14)	PM
			0200	120	116	9.7	4820	47803	63846	383		330°	20		BML
			0230	170	117	9.7	4630	47838	63846	385		330°	18		BML
			0300	120	117	9.9	4000	47888	64696	414		330°	16		BML
			0330	120	118	10.0	2920	47939	64386	462		330°	18		BML
			0333											SAT Fix: 17°56.011 - 79°45.346 (EL=28, P=2, CT=13)	BML
			0400	120	117	9.8	2520	47854	64596	463		328°	18		BML
			0409											C/C 030 at 17°53.4 - 79°40.4 END of Line # 89	CC
			0415											XNC at 17°53.8 - 79°39.6	CC
			0430	30	29	10.3	2530	47956	64316	492		000	20		CC
			0437											C/C to 500 at 17°56.9 - 79°37.7	EC
			0443											XNC at 17°57.8 - 79°38.1 BEGIN LINE # 90	EC
			0500	299	305	09.7	2780	47961	65816	601		030	18		EC
			0530	299	302	10.0	4670	47995	65366	531		030	17		CC
			0600	299	304	09.8	4650	47888	65156	512		045	16		EC
			0520											SAT FIX at 18°00.9 - 79°43.9	EC
			0630	299	303	10.0	4810	47802	65126	510		040	17		EC
			0700	299	302	09.9		47836	65476	546		040	17		EC
			0708											C/C to 030 at 18°10.6 - 80°00.7	EC



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST		
R/V HOANA WAVE				MW8909		0310	+ 4	0710	CAYMAN TROUGH. (WAY BACK HOME...)		18°10.4	80°00.9	HANN/ROSENCRANTZ		
DATE				GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH M MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR	GRAVITY							SPRING TENSION	DIRECTION	KNOTS			
23	AUG	89	0714											XNC	EC
(235)			0716											SAT FIX at 18°11.1 - 80°00.2	EC
			0730	027	073	10.1	4620	47951	6518	6500	000	20		<del>SAT FIX at 18°13.8 - 79°58.7</del>	EC
			0734											CIC to 118 at 18°13.8 - 79°58.7	EC
			0741											XNC at 18°13.9 - 79°57.7 BEG. LINE # 91	EC
			0800	1198	115	9.6	4680	47933	6454	6449	40	16			EC
			0830	120	119	9.6	4575	47860	6414	6411	40	20			EC
			0900	120	120	9.6	4700	47952	6399	6399	350	78			EC
			0905											SAT FIX (0941) 18°02.900 79°42.026 (EL=68° IT=4 CT=29)	EC
			0909											replace belt on recorder #5 - old belt and button type	EC
			0913											<del>SAT FIX (0903) 18°22.568 79°44.275 (EL=55° IT=2 CT=29)</del>	EC
			0930	120	121		3750	48002	6475	6476	350	16			EC
			1000	120	121	9.7	2875	47982	6466	6472	345	16			EC
			1011											SAT FIX (0951) : 18°03.671 79°38.781 (EL=68° IT=4 CT=29)	EC
			1020											SAT FIX (1003) : 18°02.57 79°37.14 (EL=10° IT=3 CT=20)	EC
			1030	120	119	10.0	1870	48005	6494	6493	340	15		SAT FIX (1026) : 18°00.844 79°33.630 (EL=55° IT=2 CT=29)	EC
			1100	120	120	10.0	1960	48130	6488	6488	345	16			EC
			1129											EOL 91	EC
			1130	030	093	10.1	1910	47882	6474	6475	355	15		INTURN	EC
			1135											XNC	EC
			1150											a/c to 039°	EC
			1157											c/c to 302°	EC
			1200	120	350	11.0	2110	47987	6510	6502	006	18		(we are hunting, so speed is probably wrong)	EC
			1204											XNC 302° @ 18°00'7 - 79°22'0	EC
			1208											A/c → 298°	EC
														SOL 92	EC



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	0811	+4	1211	PAYMAN TROUGH (2 <sup>nd</sup> Survey)	18° 01' N	79° 23' W	MANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
23	AUG	89	1230:	300	299	10.1	2230	48111	66046	612	006°	8		BML
(235)			1300:	300	297	10.4	3170	47373	65826	579	002°	4		BML
			1330:	300	298	10.0	3865	48136	65656	564	002°	6		BML
			1315:										SAT FIX: 18°0659, 79°32'48 (EL: 16, IT 2, CT 30)	PW
			1400:	300	298	10.2	4420	48018	65376	533	002°	8		BML
			1430:	300	300	9.3	4260	46616	65406	540	005°	6		BML
			1500:	300	296	10.0	4655	47907	65686	567	030°	4		BML
			1509:										CIC → 031° [EOL 92] @ 18°15'693 79°50'308	BML
			1516:										XNC → 032° (TURN)	BML
			1530:	033	033	10.1	(3000)	48089	65436	529	030°	12		BML
			1537:										CIC → 120° (End of Turn)	BML
			1542:										XNC → 170° [SOL 93] @ 18°10'8 79°47'9	BML
			1600:	119.3	122.9	9.8	4400	48003	64816	480	000°	18		La
			1630:											
			1630:	119.2	119.4	9.7	4620	47885	64306	430	355°	20		dcl
			1700:	119.4	117.6	9.8	3970	47818	64236	420	000°	16		
			1730:	119.6	121.1	10.0	4270	48037	64306	430	005°	18		
			1800:	119.5	120.6	9.9	3560	48075	64566	456	000°	18		
			1830:	119.7	121.1	10.0	2840	48058	64756	475	000°	18		
			1813:										SAT FIX 181394 793673	La
			1900:	119.2	121.9	10.0	2560	47258	64736	772	005°	18		
			1930:	119.4	122.1	10.0	2650	47080	64606	461	000°	20		
			1947:										change paper in recorder # 1	
			2000:	120	123	9.9	1550	47787	64886	491	005°	18	SAT FIX @ 1843: 18° 05.509 79° 21.226 (EL: 30 IT: 2 CT: 27)	La
			2019:	120	115								ADJ/c	La



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
RV Moana Wave	MW 8909	1600	+4	2000	Cayman Trough (2 <sup>nd</sup> Survey)	17°58'N	79°08'W	Mann/Rosencrantz

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND DIRECTION KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION			
23	Aug	89	2030	120	117	10.1	1850	47702	6482	6480	000° 17	SAT FIX @ 2019: 17°57.781 79°06.832 (EL=46° IT=2 CT=22)	ED
(235)			2057	030							→	CC 030 EOL 93	ED
			2100	030	turn	10.0	1170	47672	6500	6503	turn		ED
			2102	030							→	XNC	ED
			2123	turn							→	C/C 300° -	
			2129	300							→	XNC SOL 94	ED
			2130	300	297	10.2	1450	47726	6557	6544	320° 6	SAT FIX @ 2122 17°58.33 78°59.10 (EL=45° IT=2 CT=24)	ED
			2200	300	299	10.1	1620	47777	6627	6634	325° 5		ED
			2230	300	299	10.1	3230	47924	6576	6570	320° 6	SAT FIX @ 2206 18°02.23 79°04.73 (EL=19° IT=2 CT=28)	ED
			2300	300	299	10.2	2840	48050	6575	6573	320° 5		ED
			2330	300	299	10.3	2780	48091	6594	6594	315° 5		ED
			2335								→	SAT FIX (2309) 18°07.468 79°14.842 el 23.1 CT 27	
24	Aug	89	0000	300	302	10.2	3425	48281	6594	6595	330° 4		BML
(236)			0030	299	302	10.4	4215	48106	6568	6566	330° 2		BML
			0100	300	302	10.4	4350	47912	6557	6554	330° 1		BML
			0051								→	SAT FIX 18°16.33, 79°31.25 (EL=8, IT=2, CT=23)	BML
			0130	302	301	10.2	4620	47891	6575	6574	330° 2		BML
			0134								→	A/C 304°	BML
			0153								→	C/C → 032° [EOL#94] @ 18°21'23" - 79°40'24"	BML
			0159								→	XNC 032° (TURN)	BML
			0220								→	C/C → 118°	BML
			0227								→	XNC 118° [SOL#95] @ 18°25'17" - 79°38'11"	BML
			0230	119	119	10.0	3700	47798	6524	6526	350° 18		BML
			0300	120	119	10.2	3675	47972	6504	6503	350° 18		BML
			0330	120	118	10.3		47956	6472	6470	000° 18		BML



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V MOANA WAVE	MW 8909	(235) 2336	+4	0336	Payman Trough (2nd Survey)	18°19'	79°27'	HANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER	
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS			
24	A	U	6	89	0400:	120	118	10.1	3650	48035	6468	6468	358° 20		Bm
(236)					0430:	119	119	9.8	3450	47845	6476	6477	340° 22		st
					0500:	119	118	11.0	3050	48119	6474	6475	358° 22		
					0530:	119.4	118.7	9.8		48177	6455	6455	355° 70		
					0502:									SAT FIX at 18°17.7 - 79°16.7	ce
					0600:	119	118	9.9	3410	48048	6448	6448	358° 16		
					0630:	119	118	9.8	2850	47896	6449	6450	358° 20		
					0704:	118	119	9.5	2550	47833	6468	6468	358° 20		
					0631:									SAT FIX at 18°05.6 - 79°01.3	ce
					0710:									3.5 kHz Printer is down - scrolling is the problem. Turned off, then on, seems O.K. Steve agrees.	dd
					0730:	1188	1142	9.9	1570	47751	6483	6485	340° 24		
					0756:									EXL 95	ce
					0800:	036	030	9.6	1900	47715	6493	6499	25° 24		
					0801:									YMC	
					0826:									C/C 300°	
					0830:	300	335	10.3	1560	47776	6545	6524	035° 8		
					0832:									SOL 96 SAT FIX @ 0818: 18°02.09 78°46.70 (EL=49° IT=2 CT=34)	ce
					0900:	300	299	10.3	1600	47834	6613	6619	- 0		
					0928:									ADJIC 296	
					0930:	300	275	10.4	1980	47930	6599	6578	195° 3		
					1000:	300	297	10.2	2400	48119	6593	6597	185° 3		
					1020:									ADJIC 300 SAT FIX @ 1007: 18°11.675 79°01.065 (EL=18° IT=2 CT=26)	
					1030:	300	299	10.0	3130	48247	6583	6582	330° 2		
					1100:	300	299	9.9	3140	48284	6596	6596	270° 3		



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V Moana Wave	MW8909	7:05	14	1105	CAYMAN TROUGH (2nd time)	18°16	79°10	MAHIN ROSPALCANI?

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR					<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC			GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
24	AUG	89	1130	300	300	9.9	3700	48222	65966	597	0	0		CG	
(236)			1200	300	301	9.9	3870	48001	65936	593	240	2		BmyL	
			1230	300	300	9.8	4060	47870	66006	600	240	2		BmyL	
			1250											BmyL	
			1255											BmyL	
			1300	29	33	3.8	4260	47887	65926	563	45	8		BmyL	
			1309											BmyL	
			1317											BmyL	
			1322											mk	
			1326											BmyL	
			1330	-	87	7.8		48055	65226	518	002	20		BmyL	
			1332											BmyL	
			1400	119	119	8.2	4485	47827	64946	493	000	18		BmyL	
			1317											SAT FIX 18 27.35, 79 24.87 EL11, IT2, CT25	BmyL
			1430	114	114	8.1	4070	47734	64936	492	000	18		BmyL	
			1500	119	120	8.1	3250	48003	65036	502	000	18		BmyL	
			1530	119	122	8.1	3070	48491	65066	507	350	18		BmyL	
			1600	119.5	121.7	7.9	3170	47857	64896	219	350	20		dd	
			1630	119.5	121.7	8.0	3250	48342	64766	475	345	18		dd	
			1549											SAT FIX 18°19'26 76°06'32	dd
			1700	114.6	121.4	7.7	2610	48177	64816	481	0	16			
			1730	119.7	122.4	7.6	2210	48052	64866	487	350	16			
			1734											BAT FIX 18°12'49 78°53'42	
			1800	119.8	122.2	7.6	4930	47938	64976	497	0	18		dd	
			1810											No seismic signal.	



VESSEL NAME					CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST			
R/V Monna Wave					8909 MW		14.15	14	1815	Cayman Trough (2nd time)	1809.96	7848.51	MANN/Rosencant			
DATE			GMT	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER		
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS				
24	AUG	89	1830	14.8	123.4	7.4		47850	65	1565	17	005°	16	AIC 124 18°08' 26 / 78°45' 18	dd	
			1842													
			1900	119.8	124.6	8.1	1250	47830	65	1665	14	000°	18		da	
			1930	119.7	125.2	8.0	1665	47789	64	8664	15	000°	19			
			2000	120	125	8.1	1700	47732	64	7764	76	000°	17			
			2030	120	123	8.2	1840	47757	64	5364	51	000°	16	SAT FIX(2047) 17°59.605 78°29.789 el 24 et 28 29		
			2100	120	120	7.9	2080	47657	64	4064	39	000°	15			
			2130	120	124	7.7	1650	47564	64	4364	42	355°	13			
			2132	030										CC EOL 97		
			2138											XNC		
			2200	030	029	8.2	1370	47602	64	6864	66	025°	12	SAT FIX(2143) 17°57.51 78°23.02 el 28 et 28 33		
			2208	300										CC 300°		
			2210											EEL FAILURE (~2155) - PREAMP FAILURE SLIPKIES OUT		
			2214											SOL 98 (NO EVENT MARKER FROM BRIDGE)		
			2216											R/S 4 KNOTS TO BRING IN BOTH GUN & EEL		
			2225											1/3 TO KNOTS		
			2230	300	300	8.7	1160	47661	65	4165	61	035°	6	SAT FAX(2234) 18°02.148 78°23.887 el 40 et 28 30		
			2300	300	299	10.1	1830	47821	65	7165	74	040°	6	SAT FIX @ 2307 18°04.831 78°28.778 (EL 51° IT 3 CT 31)		
			2330	300	299	10.3	2090	47758	65	6265	60	040°	7			
25	AUG	89	0000	300	299	10.0	1840	47827	65	8065	82	040°	14		BML	
			(237)	0030	300	299	10.3	2075	47882	65	8265	80	045°	8		BML
			0100	300	299	10.1	2090	47994	65	9165	91	045°	4		BML	
			0130	300	299	10.1		48220	65	8565	84	045°	4		BML	
			0054											SAT FIX: 18°13.74, 78°44.76 (EL 17; IT 2, CT 32)	Pm	
			0200	300	299	10.0	2870	48359	65	9865	99	045°	2		BML	



VESSEL NAME					CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	=	GMT	AREA				LATITUDE		LONGITUDE		CHIEF SCIENTIST	
R/V MOANA WAVE					MW 8909		2000	+4		0200	CAYMAN-TROUGH / WEST JAMAICA				18°19'		78°56'		HANN/ROSENCRANTZ	
DATE					G M T		INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS		DEPTH	MAG.	GRAVIMETER				WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR									<input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC		GRAVITY		SPRING TENSION		DIRECTION	KNOTS		
25	AUG	1989	02	30			300	301	10	0	2775	48421	66	12	66	14	040°	2		BML
(237)			03	00			300	299	10	0	3550	47960	66	02	66	01	040°	2		BML
			03	30			300	300	10	0	4100	47634	66	04	66	05	045°	2		BML
			02	47																
			03	02																BML
			04	00			300	302	10	1	4450	47812	66	03	66	02	045°	1		BML
			04	30			300	301	10	0	4500	48116	66	12	66	13	065°	1		EC
			04	51																EC
			05	00			032	031	10	0	4580	48234	62	27	65	45	045°	10		EC
			05	18																EC
			05	24																EC
			05	30			119	120	10	0	4620	46609	65	00	64	93	000°	18		EC
			06	00			119	120	10	0	4550	48218	64	93	64	93	000°	20		EC
			06	30			119	120	10	0	4550	48053	64	81	64	81	355°	19		EC
			07	00			119	121	10	0	4600	47911	64	68	64	67	350°	18		EC
			07	30			119	120	09	9	4350	47808	64	66	64	65	350°	18		EC
			08	00			119	120	09	9	3370	47773	64	82	64	84	350°	18		EC
			08	30			119	121	09	8	2850	47579	64	85	64	86	330°	18		EC
0900			09	00			120	122	9	8	2610	46630	64	74	64	74	330°	13		EC
			09	30			120	119	10	1	2950	48032	64	49	64	48	310°	15		EC
			10	00			120	121	9	8	2800	47883	64	36	64	33	315°	16		EC
			10	30			120	121	10	1	2410	47886	64	63	64	43	315°	11		EC
			10	41																
			11	00			120	124	10	3	2210	47798	64	42	64	49	320°	12		EC
			11	30			120	125	10	1	1500	47765	64	58	64	57	330°	13		EC

SAT FIX: 18°20.75, 78°56.68

SAT FIX: 18°21.00 79°04.6 (EL=16, IT=3, CT=16)

C/C to 030 at 18°32.7 - 79°21.1 EOL # 98

XNC

C/C to 120 at 18°36.6 - 79°19.3

XNC at 18°36.8 - 79°18.4 SOL # 99

0756

SAT Fix at 18°25.4 - 78°55.7 (EL=33° IT=2 CT=3)

SAT FIX @ 0943 18°16.07 78°39.23 (EL=27° IT=2 CT=33)

Adj/c to 123



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST			
R/V MONA WAVE				MW8909		10:30	+5	1130	CAYMAN TROUGH - West JAMAICA	18°07	78°21	MANN ROSENCRANTZ			
DATE				G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR	GRAVITY							SPRING TENSION	DIRECTION	KNOTS			
25	AUG	89	11	35										EOL 99	G
			(237)	1146										XNC START LINE 100	
				1200	320	323	10.0	1820	47781	65666	59	25	10		
				1230	320	322	9.8	1360	47919	65936	59	15	10		
				1242										Adj/c 300	
				1300	300	301	9.8	1270	47954	66236	63	030	8		BML
				1330	300	299	10.0	2150	48015	65966	59	030	6		BML
Sat Fix			X	1254	46									SAT Fix: 12:54 18°16'10 - 78°29'07 (EL: 17, IT: 2, CT: 31)	BML
				1344										Captain reported that ship passed over a fishing net	PM
				1400	300	299	9.9	2850	48042	65876	58	030	4	(1350 → GPS OFF)	BML
				1430	300	299	10.0	3070	47998	65976	59	032	4		BML
				1500	300	302	10.0	4300	47970	65866	58	030	4		BML
				1440										SAT FIX: 18:24.76, 78:45.67 (EL: 10; IT: 2, CT: 15)	PM
				1530	300	302	9.9	4580	47815	65786	57	032	6		BML
				1558										C/C 040° <u>EOL#100</u> at 18°31'34 - 78°57'65	BML
				1600	288		9.7	4630	47840	65886	58	030	10	Turning	BML
				1604										XNC (Turn)	BML
				1625										L/C → 120°	BML
				1630	320	116	9.3	4720	48669	64756	47	355	18		
				1631	120									XNC 120° <u>SOL 101</u> 18°35'15 - 78°55'00	BML
				1625										SAT FIX: 18:35.00 78:55.41 (EL: 67, IT: 2, CT: 33)	PM
				1700	120	123	9.8	4720	47994	64616	46	350	18		BML
				1730	119	119	9.9	4740	47992	64506	45	340	16		BML
				1800	119	112	10.0	3830	48612	64616	46	350	16		BML
				1830	120	120	10.0	2430	48688	64976	49	010	10		BML



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST				
R/V Morgan				MW8909		13:33	75	1833	Cayman Trough - W. Jamaica	182533	783688	Mann				
DATE				G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH		MAG.	GRAVIMETER		WIND DIRECTION	KNOTS	COMMENTS	OBSERVER
DAY	MONTH	YEAR	M					MSEC	GRAVITY		SPRING TENSION					
25	AUG	89	1900		1206	119.9	10.4	2360	47592	6490	6490	000	0	10		dd
			(237)	1930	1201	121.2	10.0	1780	47794	6496	6498	000	0	10		da
			1934													
			1940													
			2000		299	32.9	10.2	1575	118037	6542	6549	020	0	12		dd
			2003													da
			2009													
			2030		2992	299.2	9.9	2170m	48214	6628	6627	350	0	8		
			2100		300	299	9.7	2780	48418	6622	6623	345	0	8		
			2106													
			2130		300	299	9.9	4200	48320	6587	6585	350	0	10		
			2200		300	301	10.1	4750	48010	6571	6569	345	0	7		
			2211		TURN											
			2216			030										
			2230		030	033	10.1	4900	48079	6484	6465	025	0	10		
			2241													
			2247													
			2300		120	121	9.7	4860	48059	6459	6453	345	0	13		
			2330		120	121	9.8	4760	48020	6451	6451	330	0	14		
26	AUG	89	0000		120	121	9.7	3700	48266	6463	6464	330	0	15		
			(238)	0030	120	120	9.8	2860	48426	6489	6491	315	0	17		
			0040		120	117										
			0100		117	116	9.8	1510	48220	6529	6530	315	0	20		
			0111													
			0116													
C/C 030 F.O.L 101 XNC (turn) C/C 300 1823 95/782487 XNC - S.O.L 102 SAT FX (2047) 18°27.828 78°31.065 @ 16:12H 24 SAT (2121) 18°30.510 78°36.194 @ 41:12H 29 END LINE 102 - C/C 030° ON COURSE 030° C/C 120° XNC SOL # 103 Adj C 117° C/C 030 F.O.L 103 @ 1827325 - 78°19'671 XNC 030° (TURN)																



VESSEL NAME	CRUISE & LEG NO.	LOCAL TIME	TIME ZONE	= GMT	AREA	LATITUDE	LONGITUDE	CHIEF SCIENTIST
R/V HOANA WAVE	MW 8909	2016	+5	0116	W-JAMAICA	18°27'7	78°18'8	HANN/ROSENCRANTZ

DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
26	AUG	89	0031										SAT FIX : 18°30.17, 78°25.53 (EL 25, 172, 0733)	Pm
			(238)	0130	30	33	9.6	1900	48207	6560	6571	000° 19		BmL
			0139										c/c 300°	BmL
			0146										VNC 300° SOL 104 @ 18°31'80 78°17'30	BmL
			0200	798	300	9.8	3525	48378	6597	6613	025° 10			BmL
			0230	298	300	9.7	4200	48176	6579	6578	025° 10			MK
			0300	798	300	9.7		48224	6575	6574	032° 4			BmL
			0305										c/c → 030° EOL 104 @ 18°32'10/78°19'55	BmL
			0314										XNC-030°	BmL
			0330	35	38	9.6	4860	48182	6680	6646	020° 20			BmL
			0338										c/c → 120°	BmL
			0343										XNC 120° SOL 105 @ 18°42'19 - 78°27'02	BmL
			0348										A/C → 117° (NO Event Mark)	BmL
			0400	119	116	9.6	4750	48206	6457	6453	330° 21			BmL
			0430	119	121	9.8	4530	48223	6451	6450	350° 20			BmL
			0435										A/c → 120°	MK
			0500	119	121	9.9	4300	48226	6453	6453	000° 20			BmL
			0530	118	118	10.1	3000	48218	6480	6481	355° 20			EC
			0523										SAT FIX at 18°34.4 - 78°12.4	EC
			0600	120	119	10.2	1750	48162	6527	6530	000° 18			EC
			0609										c/c 030 at 18°30.7 - 78°05.3 EOL # 105	EC
			0615										XNC at 18°31.2 - 78°04.4	EC
			0634	374	376	10.0	2020	48251	6542	6546	30° 10			S
			0635										C/c at 18°33.8 - 78°02.4	EC
			0641										XNC at 18°34.7 - 78°02.8 SOL # 106	EC



VESSEL NAME				CRUISE & LEG NO.		LOCAL TIME	TIME ZONE	= GMT	AREA		LATITUDE	LONGITUDE	CHIEF SCIENTIST	
HOAMA WAVE				HW8909		0750	+S	0650	N-WEST JAMAICA		18°35.2	78°04.9	MANN/Rosemary	
DATE			G M T	INTENDED TRACK	GYRO COURSE	SPEED IN KNOTS	DEPTH <input checked="" type="checkbox"/> M <input type="checkbox"/> MSEC	MAG.	GRAVIMETER		WIND		COMMENTS	OBSERVER
DAY	MONTH	YEAR							GRAVITY	SPRING TENSION	DIRECTION	KNOTS		
26	AUG	89	0700	299	298	10.2	2950	46724	6604	6617	315	05		EC
	(238)		0730	284	301	10.3	4590	48197	6570	6567	330	05		EC
			0800	2994	3021	10.3	4580	4708	6570	6570	330	10	SAT FIX @ 0837 18°44.44 78°20.96 (EL=17° 17-2 CT=10)	
			0830	2988	301.1	10.0		48258	6577	6540	330	08		
			0843											
			0900	030	031	9.8	5020	48204	6486	6487	015	10	4N C 18°45'49, 78°20.90	
			0904	TURN									C/C 120°	
			0910	120	120								ON COURSE START LINE 107.	
			0930	120	121	10.1	4940	48411	6459	6456	005	15	SAT FIX @ 0920 18°48.13 78°17.11 (EL=39° 17-2 CT=52)	
			1000	120	121	10.1	4800	48362	6454	6453	355	15		
			1030	120	121	10.1	4760	48251	6445	6445	355	10		
			1100	120	120	10.2	4710	48195	6446	6440	355	11	SAT FIX @ 1044 18°41.423 78°05.360 (EL=38° 17-2 CT=30)	
			1130	120	120	9.9	3380	48123	6464	6465	005	10		
			1200	120	120	9.9	1980	47461	6510	6513	350	10	ALL	
			1201	270									C/C 270° EOL 107	
			1206	000									C/C 000° END SURVEY	
			1207										END SCIENCE LOGGING MW8909 -	R.
			1219										MAGY ON BOARD - SECURE	