NATIONAL EAGLE LINE

CHIEF SCIENTIST LOG

Ic

4

PR1 - FLORIDA QUEEN
680227 - 0323 #68001
PR2 - ATLANTIC TWIN
690116 - 26 - ?? #69001

TRIDENT
680325 - 30 #68002

THREE SUBJECT NOTEBOOK

120 SHEETS WIDE WITH MARGIN

NAME _____

NO. 37-052

104353

| DATE DUE | ASSIGNMENT | REFERENCE AND PAGE |
|---|---|---|
| PR I | 1968: Feb. 25 – March 30 | Fla. Queen |
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| PR II | 1969: Jan 16 – Jan. 27 | Atlantic Twin |
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# Log

Feb 25 - Arrived Panama City 1930 CST via air. Jack Lee & Jack Vedder arrived 2230.

Feb 26 - Installing equipment aboard Fla. Queen. Air shipment from Corpus Christi arrived Pan. City 2300. Picked up ad moved it to St. Andrews Marina aboard Florida Queen.

Feb 27, 1968

0830 - Installing equipment on Fla. Queen

1400 - Ran into Bay to test gear (sparker). Return to Marina at 1530.

1645 - Departed dock St. andrews marina for Mayaguez, P.R.

Feb 28

1900 - Arrived Key West. Fuel not available till morning. Tied up for the night.

Feb 29

0800 - Began fueling. Also put aboard 8 extra drums of fuel, making 34 in all. Departed Key West 1045 EST. South winds increasing to 30 kts. Gulf Stream crossing very rough, with 6-8 foot short period waves on starboard quarter. Seas improved a little by 1630 after the stream was crossed. Front passed about 2000. Wind to NW.

March 1, 1968

Overcast
Wind NW, 25-30. Seas 4-6 feet from NW, nearly dead astern. Entered Old Bahama Channel about 0400. Cloudy & showery weather. 1700 - N of Gibara Cuba (76° W), wind getting more northward, seas building 8-10'. Very rough night.

March 2

Overcast, wind NNE 15-18, seas 3-4 feet, very choppy. South of Great Inagua Is at 1000, increased speed from about 10 to 15 kts.

1300 - Stopped ~~Lat~~ 20°-26.3' N, Long. 72-12.8' W, 60 miles SE Gt. Inagua to test sparker gear in 2150 fms. Could get no signal return from bottom.

1350 - Underway again. Seas moderate, overcast.

March 3

Overcast, wind E 10-15, swell from NE, up to 12' high. Still very rough. 0830 - sight Desecheo Is off Stbrd quarter. ETA Mayaguez, around 1200. No radio contact possible, neither Marine Op or Coast Guard can reach us.

Arrived Mayaguez (Muelle Mayaguez - Malecón) 1200 AST. Off loaded barrels, anchored off. Visited at 1930 by Dr. John Weaver (UPR), Dr. George Sieglie, and a Mr. Moussa. Discussed plans for sampling.

March 4

Capt. MacElroy left for Panama City at 0730. Moved back to dock at 0830, Pete Briggs and José Cadilla came aboard as members of scientific party. Went ashore and visited Nuclear Center to check for mail. Drs. Sourman and J. Martin returned to boat and stayed for lunch. Called Corpus Christi office and Dr. Vincenty from Nuclear Center before lunch. At 1330 went to University where borrowed frequency check instrument to test radio. At 1430 called Dr. Santiago-Vasquez concerning students to come aboard - he was not in - left word students to be at Malecon at 0630 tomorrow morning for weeks trip At 1600 left dock and went out to deep water in Mona Passage to test sparking gear. Returned to anchorage at 1830. Secured for the day.

March 5

Moved to dock at 0630. Jose (Pepe) Juarez, student UPR, came aboard as member scientific party. At 0730 fuel truck arrived. At 0800 went to Nuclear Center for repairs to sparker gap. Returned at 1000. Departed Mayaguez for line M, to begin sparker run across Cabo Rojo.

Completed that run (M) in about 1000 fms, continued it as a northeast dog leg (M-1) back up to about 100 fms, then broke off and ran to the inshore end of (J). Ran (J) offshore to about 10-12 Kfms, thence into Guanica Harbor where tied to fertilizer barge about 1400 and secured.

Sub-bottom information along these lines was generally poor to non-existent. In the shallow shelf waters (<100 fm) where bottom was fairly level, on (M), there is reverberation down to about 1000 feet, and possible areas of penetration (with valid reflectors to 300-400 feet below s.l. Most of the lines have their greatest extent, however, over areas whose slope is greater than 15°; Consequently there is little energy return and records are weak.

March 6

Left Guanica Harbor to start the first run at 0725 at the buoy marking harbor entrance (H). Ran (H) out to about $10^3$ fms. Moved over to deep end of (F), and ran that line into < 30 ft of water inside Guayanilla Harbor. Added new line (F-1) southeasterly across the canyon off Punta Cuchara - carried this to about 800 fms. Then turned north on (C). Ran (C) all the way into shallow water at head of Ponce Hbr. About 1500 secured sparker gear and rigged Boomer. Ran Boomer on several short lines across shelf around Ponce, and in Ponce Hbr. Finished about 1730 and secured at the Muelle de Ponce.

Results of sparker work were disappointing, same as yesterday. The records across the shelf showed principally reverberation, and those down the slope frequently missed even the bottom. In some cases of steep pockets on the slope, some slight sediment filling could be seen, in others the surface seemed to be bare rock — but while traversing the slope, in either direction, it was only in the reversals that a clear reflection was obtained. Most of the sparker runs were broken off by 1200 fms, and it appeared that continuation

below that point was useless. Traces were becoming extremely weak, even in reversals, and it is believed that reflections from the 2700 fm trough to the south would be essentially impossible with the present 5 Kj sparker.

The Boomer runs were a little more promising. Operated at 1 Kj, 1 sec., and recording $10^2$-$10^3$ Hz on the 100 fm scale, records were obtained in Ponce Harbor and on the shelf which showed varying degrees of penetration. Maximum penetration was in the harbor, where around 30-40 feet of low density material overlayed a bottom of high relief. Outside on the shelf a highly reflective material lay on the surface and penetration was spottily obtained to depths around 40-50 feet. Channels could be seen cut into this reflective layer, then filled level with sediment of younger age. Boomer records were no improvement over sparker on the slopes; they showed occasional hints of structure on the shelf; and were excellent when profiling in harbor muds.

Only the Isla de Muertos line remains unsparked.

March 7

Left the dock at 0700 and began line A passing east of Isla Caja de Muertos. After about half an hour, it was apparent that no signal was being recorded in the upper 40-60 fms of record. The run was stopped and the trouble turned out to be a disconnected groundwire from the hydrophone-amplifier connection to the recorder box. Line A was begun again.

The purpose of this line was to ascertain the presence of a suspected fault striking SW along the north flank of Muertos. An apparently hard, reflective cap (reefing) over the area set up severe reverberations which may have obscured all reflectors, but some anomalous appearing patterns may indicate disturbance along a fault zone. As a result of this, line B was sparked, although not originally planned. This line, too, showed anomalous patterns, although the presence of a fault is by no means clear.

From these, and lines run yesterday, an interpretation of the broad Muertos shelf can be made which indicates an ancestral platform of "coastal plain?" deposits dipping seaward from the main island. Capping this in certain areas, especially around the

seaward edge, and flanking a prominent channel, are reefs which grew upward with rising post-Pleistocene sea level, and now stand high above the coastal plain surface as flat topped bosses. At least one profile seems to show the projection of this surface beneath the reefs (F1). The seaward edge of this projection appears to outcrop beneath the reef at a depth of 100 feet along the steep scarp marking the boundary of the Muertos shelf.

Several lines were run with the sparker across Cuchara Canyon. These haven't yet been examined carefully, but showed in general an exceedingly steep walled, V-shaped, narrow feature. Plots of axial crossings indicated an almost straight-line striking about 215°T from Pta Cuchara. It appears likely that this feature is a fault — landward extension of the strike on the geological map may support this idea very well. In fact, one interpretation may be offered that there was right lateral movement which caused the absence of shelving coastal plain beds west of Ponce (or their presence eastward) This idea may be worth developing.

March 8

Waited at Ponce docks until 0830 for George Seiglie and student from UPR to come aboard, but they failed to show up. José Cadilla phoned Dr. Santiago-Vasquez in Mayaguez and arranged that another student from Engineering would meet us at the Mayaguez dock (El Malecón) at 0700 next Tuesday. Pepe Juara left the boat, his time being up. At 0830, we moved out to begin sampling on Line A. After 3 or 4 stations, everyone worked smoothly at different assignments, and sampling went rather well. The first foul-up was in the first deep water station (about 400 m) when Duck, running the winch, failed to feel the sampler hit bottom, and paid out an extra 200-300 m of wire, which caused a big tangle. After that, by taking the depth record from the pinger and carefully monitoring the meter wheel, we made successful lowerings as deep as 1140 m. Navigation was by radar ranges and bearings, which it has been during all the work to date. These positions vary in accuracy, by unknown amounts, but probably are good within about ¼ mile. Sampling was finally secured about 1700, two

stations before the end of Line B, when the sampler broke. A welded fitting which holds the bucket slot fittings on the axle cracked off - probably sheared due to the great force with which the bucket slams shut. It happened in a soft, fluffy mud area where the sediment probably offered little resistance to the rotating bucket.

We then returned to the dock, where Geo. Seiglie and Pablo Gonzales came aboard. The latter is the former's student, ad they work with forams in the Geol. Dept. of UPR.

In the few samples taken today, a couple of things became obvious:

1) The inner part of the shelf, behind Isla Caja de Muertos is a basin which catches most of the sediment coming into the area - samples from there were dominantly clastic, generally with high water content. Their color was grayish, with reduced streaks of darker gray, and skeletal material was scarce.
2) The ridge on which Caja de Muertos sits is covered with hard, resistant, calcareous material. Algal lumps were abundant, and skeletal material was coarse. Thru the clear water, the bottom was plainly

visible, and was covered with patches of grass and algae, with contrasting light patches of calcareous bottom. It was very difficult to sample this bottom - on one station three tries only netted a small amount of loose calcareous rubble.

3) Outside this ridge, the outer shelf consists principally of skeletal sand and gravels. This seemed to be a fairly thick cover of loose, unconsolidated material, with considerable growth of small red or green algae, sponges, and bryozoan encrusted solitary coral branches. (small branching coral also - but not, apparently, reef types). This zone terminates at the hard surfaced ridge at the outer most edge of the shelf - which itself yielded little sediment.

4) On the slope below this ridge, sparse samples of skeletal material give way downward to sparse samples of yellowish-cream colored foraminiferal sand and clay, which in places may be almost pure yellow clay. Amounts of material obtained on this slope were invariably very slight, and one gets the impression that a covering of only a few cm covers bare rock there.

March 9

Saturday - didn't work today. Rented a car last nite and intended to tour the local geological scene. First, however, we took the broken sampler part to the Ponce Cement Co., whose manager is known to Seiglie & Briggs. They kindly sent the part to their truck repair shop, where it was brazed back in place. About 1030 we left there, and drove to Guanica, where we had to leave Seiglies car, since that is the place we plan to put into Sunday nite. Arrangements had to be made to leave it in the Caribe Nitrogen Co. parking lot (Mgr. Sr. Ulterio Castillo) - we tie up to a barge on their property. This done we returned to Yauco for lunch, and had a blow out in Yauco, in front of the "restaurant." The tire was irreparable, so after lunch, we drove back to Hertz at Ponce airport, and waited until 1430 for another spare tire. Finally departing on the field trip, we drove up into the mountains, briefly, and returned to the boat for supper. Returned the car after supper and went to bed early.

Cadilla left early this morning

March 10

Up at 0630, ate ad checked the Shipek repairs. It wouldn't work – The axle piece had been put back off center, ad the sampler was inoperative. Being Sunday, it seemed almost impossible to find a place to have it done over again – but luckily, the tuna clipper Puritan had tied up there during the night, ad was preparing to unload their fish at the fish plant. Jack Lee spoke to the engineer, who indicated there might be a welding outfit available. We checked later, ad he agreed to do the job himself. By 1000 he had made a jig to center the piece, brazed the parts together, and machined down the bead – a very professional job. He would accept no money.

Sailed for the sampling area by 1015. Ran lines C ad D, ad completed the B samples not done on Friday. Wind was fresh out of SE ad stirred up a fairly rough sea which put the passengers out of commission.

Put into Guanica after dark, ate, sent Seiglie back to Mayaguez. Then it was discovered we were out of water ad Cookie couldn't do the dishes. We tried to communicate this problem to the guard at the Gate, who enthusiastically showed us to the water

cooler, with paper cups. Second try, we got the problem to him, and he took us over to the Ochoa Fertilizer docks where they had a fresh water connection. However, no one could get through to the manager on the phone to get his permission, and after several minutes of hassling, we went over to the C.G. buoytender Sagebrush, tied up at the fertilizer dock. The O.D. was Ens. Sherman Eddy, who agreed to give us some of their water. We moved the F.P. alongside and took on a couple of hundred gallons of water while several of the crew & Ens. Eddy came aboard & visited. Back to Caribe barge and tied up for the night at 0945.

One or two notes on the days sampling.
1) the slope samples were as yesterdays - same amounts, same yellowish-tan or cream clayey silt w/ few foram. Since these amounts seem so constant (and so small) in each sample, it may be that they represent only a thin (1-2 cm) blanket of pelagic sediments covering the bare rock on the slopes. If terrig. sediments were moving over the edge of the shelf, it would seem that there would be greater thicknesses as near the top of the slope, and in pockets here & there; occasionally one

should get a bucket full, or half full, or even a quarter. But, on the contrary, each lowering brought up about ½" of clayey material, with a lumpy appearance, as though scraped off the rock itself. These lumps were soft, and desintegrated when the sample was transferred to a container.

2) Sample line D was down Cucharas Canyon axis. At each station a short pinger traverse was run back and forth on 120° – 300° until the deepest point was found. In this way the canyon axis was sampled. Sample amounts were still small, although possibly somewhat larger (10-15%) than on slopes. The color of the canyon sediments was gray, rather than yellow, and texture was more nearly a silt size sediment. The last sample on this line probably missed the axis because of loss of definition on the pinger record. It could not be ascertained which canyon wall was sampled. The sample, however, either came from an outcrop or from a large piece of talus. The water in the sampler was perfectly clear, showing that none of the usual sed. blanket was included. In the bottom of the bucket were a dozen, pea-sized pieces of soft but indurated (marly?) claystone, yellowish to tan in color, plus one scaphapod.

These fragments were suggestive of middle Tertiary limestones in general appearance. They came from about 3000 ft below sea level. It becomes more apparent that we need to dredge and photograph those canyon walls, and if ever the chance should arise to use a submersible in this area, considerable justification could be offered.

There may be a complete stratigraphic section down this canyon, beneath almost no sediment cover. Moreover, if the canyon is fault controlled, there may be visible evidence in the contrasting lithologies of opposite walls.

It seems likely that almost no sediment has been, or is being transported seaward down this canyon. If this is true, what is the nature of the basin deposits at the foot of the slope below 2500 fms? What is their age, and where did they come from? Are the other canyons along the south side of the are similar in nature? Did they funnel turbidites into the basin (how about Caribe Basin as a name?)? See Ericsons paper on cores - did he have any in the Caribbean? Find out who has cored the feature.

See Glovers open file rept. Geol. of Coamo area, P.R.
Griscom & Geddes, Aeromagnetic study - GSA two yrs ago

March 11

Left Guanica at 0645. Ran lines E, F, G, H, and most of I. Necessary to stop work at 1630 in order to get to Mayaguez as scheduled. Made port at 1900, where Pablo Gonzales debarked.

Only hitch today was that one "ear" fell off the Shipek bucket.

March 12

At 0700 Juan Wilson, student in Civil Engineering at UPR, came aboard. Returned to finish line I, then ran J and part of K. By 1430 seas were so rough under 25 kt winds from ESE that we had to secure on the south side. Moved around to line O in the lee and ran that line on 2 mile spacing. The length of these western lines, plus a time element, makes me feel that fewer samples may be in order there.

Finished O at 1800 and returned to Mayaguez. Two more ears fell off buckets. Each supposed to have four - now one has 2 and one 3. Eventually, and soon, will have to stop and have them repaired.

Everyone is tired.

March 13

Preparing to depart Mayaguez at 0700, when it was discovered that we were critically low on fuel. This meant that we couldn't run full speed to the Cabo Rojo lines and still get home. Rather than just run the lines near Mayaguez, we ran slow speed (ca 8-10) and began line L at about 0930. Finished L3, when discovered that the tube holding the axis pin on the sampler had cracked its welds, the allen screws holding the axis pin in place were sheared off and the whole thing in danger of falling off. Switched over to Shamley dredge for L4, a deep station, and got a sack full of clay. Moved to K4, but here got only a sniff of coarse skeletal. Up to K3 and got nothing at all, but here the navigation got all fouled up and couldn't make radar ranges jibe with map. At 1330, gave up and started for Mayaguez to try to get sampler fixed.

March 14

To Nuclear Center early to borrow a Van Veen. Took most of morning to locate the sampler, which turned out to be too big to handle on Florida Queen. About 11 AM took the Shpick to the machine shop to have it welded up. Allen Gordon and Russ Davis came aboard for lunch. Wind came up from SW after lunch and had to anchor the ship off. Went in at 1500 to pick up sampler, and got soaked doing so in the B. Whaler. Sampler wasn't ready, and wouldn't be until tomorrow.

I decided that tomorrow would be a day off, and not to start sparking instead. It seems that all hands need to get away from the boat and the work awhile.

Back to F.Q. via Whaler in a downpour about 1700. Dried out, ate, and went to bed.

Endorsed Joe Ed's invoice for the first 15 days of charter - into mail on 15th.

Talked to Henry about 1600

Juan Wilson, who came with us every day, but slept ashore, released about 1700.

March 15

To airport by 0830, got an Avis car, back to PRNC, checked mail. To laundry, picked up John Martin and toured SW part of the island. Visited Cabo Rojo, Boqueron, and other points. Picked up Shipek sample at 1600 - beautiful patching job, hope it holds. Called home at 2100.

March 16

Left Mayaguez docks at 0400 and ran to Line M off Cabo Rojo. Hoped to get sampling done in exposed lines before SE winds came up. However, wind blew N and NE all night anyway. Started sampling about 0615 and by 1215 had finished all sampling work (Lines M and P). Sample quantities very sparse on Line P.

Returned to Mayaguez Harbor by about 1330, hooked up the boomer and ran seis lines across, in and out of the harbor. Finished this about 1800 and tied back at the dock.

Haven't had time to study any of the seis records, so not really sure what's there. Today's boomer records look interesting, but rather complicated — but then so is the local geology.

March 17

Up at 0500. Pete Briggs ashore and back to San Juan at 0530, at which time we left. Ran to Cabo Rojo to begin N-S sparker line S, nearest the island. I was sick, nausea, maybe food poisoning, and stayed in bed until about 1300. Jack Vedder & Jack Lee kept things going. About 1330 seas began growing, wind increasing and we got out of the lee of the island. By 1345 it was too rough to continue - secured the gear and returned to Mayaguez by 1530. It was pouring down rain - which it did rest of afternoon. Altogether, a day to be forgotten.

March 18

Left Mayaguez at 0700 - South to Cabo Rojo to begin E-W line N out to Mona Is. Smooth sea, scattered clouds. Swell began picking up from N about 1200. Finished N at 1335 and turned north at a point just SE of Mona to start line V. Fairly large swells off Mona Island (8-10 ft; short period). About 1800, the wires inside the hydrophone tube parted and we were out of business. Using the short phone resulted in a very bad, incomplete record, and it wasn't possible to fix the long one at sea.

So we came back to Mayaguez, arriving about 2200. End of the day.

March 19

Off to Nuclear Center to borrow a hypodermic to replace desiel fluid lost in repairing hydrophone. Then checked with John Weaver about meeting tonite, Then bought a soldering iron since the only one we had fell overboard this morning. Got some groceries and back to boat by 1200.

At 1300 the following students came aboard:

1. PETER MOTOLENICH
2. Fernando Ramírez
3. Samuel Herrera

Left dock 1315, started line X at 1405 N outta across Punta Higuera. Finished at 1630. Started back to Mayaguez.

Arrived dock about 1730. José Cadilla aboard upon docking & students ashore. Went to University at 1930 where gave talk to the Geology Club (about 20-25 attendance) on Survey's Marine Program in P.R. waters.

March 20

Up at 0400 - the three students returned, and we departed Mayaguez about 0415. Began running north from middle of line T (sparker) about 0540. At 0630 lost signal completely, when another connection broke in the hydrophone. Pulled in gear, moved to lee of Desecheo Is. (about 2.5 miles away), where we repaired the hydrophone. Returned to line T and began again about 0900, but the bottom didn't look the same. I think our return portion was about ½ mile east of the original, and in such rugged topography, we couldn't make a good overlap. Finished the line at 1134, and turned west on line Q.

At 1240, hydrophone connection broke again, so we stopped, repaired, put gear back in water - no signal. At 1315, we hauled gear out again and found the hydrophone broken in another place, and furthermore the oscilloscope had been dropped and wouldn't work. Thus we couldn't check whether or not the phones worked after repairs, without putting the gear over again.

At this point, I decided to abandon the remainder of the Mona Passage lines, amounting to one 30 mile N-S line between

Mona and Desecheo, and the southern half (15 miles) of line T1 run (whose northern ½ was run) this morning. I thought it likely that we would continue to have phone trouble the rest of the night, would have a very discontinuous record, and would thus use up all our remaining time. It seemed possible that we might run back to Pta. Higuero, stream the Boomer with the short hose and PAR amplifier, and profile the nearshore geology of the area.

This was done, and we began a Boomer run south from Pta. Higuero (X-2) at 1508. By 1530, it was obvious that the Boomer would not yield the type of sub-bottom information necessary for the solution of the local structure - it is not sufficiently low in freq. or high in power to penetrate the bedrock. So we shut down the Boomer, put it aboard, worked on the long hydrophone again and repaired another break.

There was still no way to test the hydrophone repairs, so we ran back to the start of X-2, heaved over the sparker gear, and began sparking at 1620. No signal received.

I decided then that the only thing we could do was to run back to Mayaguez

fix the oscilloscope, so we could check the hydrophone carefully, then repair all the broken connections in the phones. Tomorrow (hopefully) we can run the lines nearshore around the Mayaguez area.

We secured the gear and started for Mayaguez, and I poured myself a stiff ~~scotch~~ ad water. We arrived at the dock about 1730. The scope proved fairly easy to repair with the boat holding still, and we found only one more break in the phone. This was repaired, but sealing the plastic was not so easy because it is now getting thin in places from being melted so often. It may leak now.

Everything is working again, <u>for now</u>, and we'll give it another go mañana. The students departed (in disgust, I imagine) for ever. One of them was awfully sea sick today - and so was Cadilla.

Hope springs eternal in the human breast . . .

March 21

Cadilla left the boat about 0800 to return to San Juan, and we cast off Mayaguez dock to do sparking off Mayaguez Harbor and south of Punta Higuero.

We ran the several "X" lines, which showed the structural relationship between the island and the eastern part of Mona Passage. The hydrophone performed beautifully and we got nice clear records. Evidently, these water depths, and the lack of steep slopes are the ideal conditions for our particular sparker.

Returned about 1800 and straightened up the ship for visitors. Called John Weaver about 2000 and asked him to go to Hilton with us to see the visiting fireman. We then did so, coming back to the boat about 2200 with Henry, Parke, & Pete for a brief visit to see the layout.

March 22

Visitors aboard at 0715 for the "cruise": Hal James, C.G.; Mrs. James; John Hack, Asst C.G. for Regional Geol.; Jack Reed, Br. Ch. Eastern States; Parke Snavely, Henry, & Pete. Ate at a hearty breakfast. Also visited by Frank Sowman & John Weaver, the latter going with us for the ride.

Went south & Desechco rd ran sparker line across "Mona Ridge", Line 2. Visitors seemed vague, sea sick, and not particularly interested. Parke very busy with politics - didn't get to talk much to him.

In at 1300, visitors departed (unimpressed, I think). Rest of day packing & securing gears for trip home. Jack Vedder left at 1800.

March 23

Greeting the Queen at 0900. Frank Lowman picked up crew and chauffered them all around. I left with John Martin and Allen Gordon at 1000 and went up to their house. Lunched at Hilton pool, saw Queen leaving far out in Mona Passage, and took a 1300 Caribaire from Mayaguez to San Juan. Checked in on Trident at 1500, Peer Sea in San Juan. Ted Napora, chief sci. here; Jerry Miller, grad. student, 2nd yr. of Mike Pilson, only other member of scientific party.

March 24

Trident at dock; got up a dredge out & hold, discussed plans for next weeks work. Pretty dull day - kind of let down after last 6 months frantic activity. Messed around Condado for lunch, but left others and came back aboard by 1330. Costs too much money over there.

Visited the German cruise ship Hanseatic, in the evening. Second Radio Officer, whose name was Helmut, showed me around the ship.