#105111 GYRE 80-G-9
GYRE 80025

South Atlantic Continental Shelf
Sept 18-October 14, 1980
P.Popenoe

CHIEF SCIENTIST'S LOG

Sept 18-Oct 14, 1980

80025CRD

VERNON McMILLAN Inc.
THE ROYAL LINE

COMPOSITIONS

R.V. GYRE 80-G-9

South Atlantic Environmental Assessment

Funded by the Bureau of Land Management

Area of Operation -

Leg 1 Cape Fear to the Virginia State Line

Leg 2. Virginia State line to Cape Hatteras, N.C. Jacksonville, Florida to Miami and the Bahamas (Straits of Florida)

Dates of Cruise
Sept 18, 1980 – Oct. 14, 1980

Leg I Norfolk, Va, to Norfolk, Va

Leg 2 Norfolk, Va to Miami, Fla:

Chief Scientist
Peter Popenoe
Co-Chief Scientist, Leg I
Kathy V. Cashman

Scientific party

Jim Dodd	U.S.G.S.	W. Hole
Ken Parolski	U.S.G.S.	"
Wes Lombard	U.S.G.S	"
Dave Mason	"	"
Janet Burke -	"	"
Betsy Coward	"	"
Kathy Crahman	"	"
Barry Irwin	"	"
Sally Wood - Needell	"	"
Al Goodman	"	"
First leg only Ken Bayer	"	Reston, Va

First leg only

Irv. Bjorkheim	International Submarine Technology, LTD
Ivar Bitte	Lamont - Doherty
Dale Chayes	Lamont - Doherty

Ray Hall	USGS Woods Hole	2nd leg only
Bob Commeau	USGS Woods Hole	

Ships Crew - Gyre

Captain	Don Amond
Engineer	P. E.
Asst. Engineer	Frank Smith
First Mate	Barry Braden
Cook	Eddie Voss
	Bob
	Eddie
	Paul

Thursday Sept 18, 1980

Cast off time originally scheduled for 10:00 EDT delayed ½ hour for ship supplies

1045 Cast off all lines – underway

1600 Fire drill –

Briefing by Captain on rules

Briefing by Chief Scientist

Briefing by Dale Chayes

2200 Heave-to to deploy equipment

Seas 2-5' Wind appr 10-15 knots raining fairly hard

The first area to be surveyed is the northern block of leases for Sale 56 – Water depth appr 150m N. of Hatteras

Navigation

JMR-4 Sealand Surveyor Satellite Survey system

TI Silent 700 terminal

Epsco Sea-plot 2 X-Y plotter

3 Northstar 6000 Loran-C units

TI Silent 700 ASR terminal with magnetic tape recorder

Leg I

Lamont-Doherty mid-range side-scan Sonar system

HP-1000 computer

~~IST~~ Sea Marc I ~~transducer~~ power unit

TEAC-3340 Tape unit

HP 6940 B Multiprogrammer

HP 895 A regulated power supply

HP 7906 Disc drive

IST Magnetometer

Leg. 2

Line 1

40^3 in airgun - 1 second, 2 Sec, 4 sec sweep

teledyne
400 Joule Sparker - 1 sec sweep

3.5 K Hz - hull mounted 10 # transducer

magnetometer

Navigation -

As on Leg 1

Friday, Sept 19, 1980

Raining, seas 2-5'

0000 - 0130 Equipment ran good and good record was produced of canyon drainage system. Very rugged relief. At 0130 system started being erratic. Irv B. and Dale C. tried to fix until 0330 EDT. at 0330 The fish was brought in to try bench repairs

0900 - Equipment still not working

Seas 3-5', cloudy

1700 - Equipment may be fixed began deployment for a second try at line I

1900 - Equipment in water — testing electronics

2000-2300 - Fantastic records! very rugged bottom and canyon systems.

Sat, Sept 20

0800 - Great records - good weather

Seas 3-5' calm

1900 - records have deteriorated for last several hours - at

Recorders (9)

1 Fish 4.5 kHz 1 Sec Sweep (Fish Altitude)

2. Ships 3.5 kHz Profiler 4 sec sweep

3 Processed starboard sidescan
Processed Port sidescan } one recorder 2.5 km/side

4 Raw Starboard sidescan 4 sec

5. Slant range corrected port + starboard sidescan 2.5 km/side 250m marks

6. Raw Port + Starboard sidescan 4 sec sweep/side

7. Raw Port sidescan 4 sec sweep

8. Raw Port Sidescan 4 sec sweep

9,

Leg 1 Watch Assignments

	8-12	12-4	4-8
Watch Chief	Chayes	Dodd	Paroiski
Winch	Mason	Bitte	Lombard
Navigation	Wood-Needell	Pogemore	Irwin
Fish Flyer	Bayer	Goodman	Bjorkheim
Markers	Cushman	Coward	Pourke

Leg 2 Watch assignments

	8-12	12-4	4-8
Navigation	Wood-Needell	Dodd	Irwin
Marker	Cushman	Coward	Burke
Marker	Lombardi	Holden	Comeau
tech	Goodman	Paroiski (on call)	
Compressor	Mason		

Sat. Sept 20 cont.

1900 hrs EDT The system again quit. We plan to pull gear for a 12 hour transit to the Slump area off Cape Fear and repair gear on the way —

2020 - Equip. in and secured — start transit to S. Lease block area code 56

Sunday Sept 21

Equipment has been fixed — everyone is rested — ETA to survey area 1830 hrs

Very pleasant day - seas a "mill pond" weather in upper 70's

2000 - on location - began deploying equipment

2045 - Fish on way down

2130 - Fish near bottom - good data

Monday Sept 22

11:00 Sea dead calm - hot - water as clear as glass - data very good - some relief on

bottom - we saw George Carpenter's slump, but it appears to extend far beyond its mapped position - Are we looking at an undulated unit that outcrops discontinuously ? - The head of the slump seems geologically related. We obtained good data all night

Dale Chayes informed me last night That the analogue tape was not acquiring useable data. Apparently The system has not worked from the start - on our cruise or the North and mid-Atlantic cruises. System is not tinkable in the field.

Tues 23 -

Good records all day but uninteresting bucking the Gulf Stream - slow speed

0000 - 1500 - records show very little - almost no bottom relief.

1500 - began seeing slump scar near base of slope - crossed slump scar

1700 - Spectacular records of slump scar face. Visible tracks of slides downslope of slump scar face

1900 - 0300 Wed Sept 24 followed slump scar along base of slope

0300 - turned east to get record over breached diapir - strong undercurrent in South direction. Very difficult to get fish to the bottom - almost 5000 m of cable out

1030 Wed Sept 24 - difficulty in steering because we have to go so slow to keep the fish near bottom. We were not able to cross third diagonal because of steerage problems

1035 - end survey - began pulling in the fish - at 20 m/minute it will take 4 hours to bring fish to the surface

1445 Gear up and secured Steaming for Norfolk, Va

1700 Thursday Sept 25
Secured lines, Pier 58, Little Creek, Norfolk. Sailing time set for 1600 Sept 26
offloaded equipment and cleaned lab 1800-2100

1600 Friday Sept 26
Cast off all lines for seismic leg of cruise

1955 – On line – deploying airguns to start seismic survey

2045 – Seismic equipment up – steaming south. Seas 6-8' – Cold front coming in

8:00 Saturday Sept 27
Seas 6-8', Wind blowing, sunny
Good records with over 1/2 second of penetration. Pleistocene is prograding to south over smooth Pliocene and smooth Miocene

12:00 Seas quieting somewhat but still 4-6' Records showing 1 sec of penetration in shallow water

1900 Seas still quieting – removed sparker and replaced it with 5 inch airgun. – much better record

2000 - replaced airgun with sparker because of cross-talk

⊠ 0800 Sunday, Sept 28
Sea 2-5 ft, overcast — boat in easy rolling motion.
Records show sparker cross-talk and are not as good as last years Gillis records. Al and Ken are working to solve the problem

1800 Records still not very good after 1 day of work by Ken + Al.
2-40 inch airguns now in use and penetration has improved - now 4 sec. record

0900 Monday Sept 29
deployed 200 element streamer to try to improve records - still only getting 1/2 to 3/4 sec of penetration
Seas 4-6', raining

1100 Seas 6-9', getting rougher

0800 Tuesday Sept 30

Seas 6-10 - very rough & ugly. Records not bad considering the seas. Decks awash with large waves breaking over the cap rail. Pulled sparker streamer and discovered that oil had leaked out.

11:00 12' seas - data not so good -

1800 Seas still 8-12'. Only one streamer out because of tough sea

0030 Wed Oct 1

Seas still 8-12'. no let up in sight - one streamer out, not bad records

0500 Trigger not working on airgun. Seas heavy 8-10' airgun and streamer brought in for work

0800 Working on airgun - Wind 20-25 knots gusting 35, Seas 10-12'

1000 Deploying

10:30 Equipment deployed and running - good records

17:00 Good records right off Beach. Seas 5-7', raining

Thursday Oct 2, 1980

0730 Good records only one airgun 40+5 in system and 3.5 system running 6 foot swells with 2-3' chop sky clear

1400 Seas 4-5' with broad swells not bad records

Friday Oct 3, 1980

0800 Seas 2-3', clear,
Records very good

1500 - Great day - calm sea and good records right up to the shore

1800 - Wind starting to blow again
Seas 3-5'

Sat Oct 4

Nice day - rough in morning but quieted during day - good records

Sunday Oct 5

Another nice day - Seas 3-5'
Started the line south and profiled through Sale 56 [illegible]
Mouth of Hatteras

Monday Oct 6, 1980
Seas 5 to 7 ft. Overcast
Winds 15-30 knots
high front moving through.
We are running with the sea
going south so the records are
still good.

Tuesday Oct 7, 1980
0800 - A nice day, seas 2-4'
sunny, records are good

Wednesday Oct 8, 1980 -
0730 End northern survey
hauled in equipment to
steam for Cape Canaveral

Thursday, Oct 9 7:30 AM

We have lost about 10-12 hrs by steaming against The Gulf Stream all night. The pilot was following the 100 fathom contour rather Than the 60 meter and by doing such we have only averaged about 5 knots all night. I asked the Captain to go inshore several miles and we picked up to 9 knots speed almost immediately.

Friday Oct 10 5:30 AM

Arrived at Vero Beach Buoy and deployed equipment for Water Resources survey. Seas 2-5' and raining. We are using 2-40 inch airguns even though the water is shallow in order to

improve penetration. We seem to be getting good reflections down to almost 2 seconds.

1500 - Secs 2-4', Clearing good records of almost 2 seconds penetration. We are now using a 5 inch airgun only

Sat. Oct 11, 1980

Secs 2-4' Very nice day with heavy rain in AM put in 40 inch airgun about 0900 to rebuild 5 inch. Because of better signal we are leaving it in.

1030 - We turned toward the Bahamas off Miami cutting the line short because of a lower speed (4.1 knots) than we had planned (5 knots)

Sunday Oct 12
Seas 2-4' great weather
good records above multiple
very little record below
multiple. We switched
from 1" to 5" gun this morning
to try to [illegible] record

Monday, Oct 13
Seas calm at 1-3' cloudy
Good records
[illegible] in Miami
0400 AM

2315 Finish Survey, pull
equipment by 2345
Head for Miami

0100 Oct 14
D[illegible], D[illegible]