

IG-24-4 23 Apr. 2356 to 23 May @ 0730

From TOM Shipley
6 Feb. 78

IG 24-5 26 May 77 to 16 June 77

IG 24-6 19 June 77 to 15 July 77

IG. 24-7 19 July 0136 to 29 July 0254

✓ 24-3 3 Apr. 77 0834 to 17 Apr. 77 @ 1844

24-8 2 Aug 77 1840 to 18 Aug 1640

Cruise #	Date	start time		Date	end time
IG 24-3	3 Apr. 77	@ 0834	to	17 Apr 77	@ 1844
IG 24-4	23 Apr.	@ 2356	to	23 May	@ 0730
IG 24-5	26 May	@	to	16 June	@
IG 24-6	19 June	@	to	15 July	@
IG 24-7	19 July	@ 0136	to	29 July	@ 0254
IG-24-8	2 Aug	@ 1840	to	18 Aug	@ 1640

Planning IG 24-4

JD 110 20 April 77

Costa Rica EQ net locks release times

STA	date	time
D	13 May	1800 Z
E	14	0200 Z
A	14	0600 Z
B	14	1100 Z
C	14	1800 Z

NSF multichannel

625 m

20 fold

± 4 kts

15.6

25 m

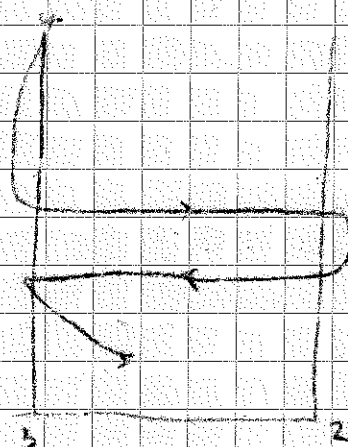
transit

± 6 kts

15

from origin NSF to begin IPOD

7.1 day



IPOD

multichannel

375 m

20 fold

± 4 kts

24 hrs

150 m

transit

6 kts

24 hrs

5 days

If we start work on Thursday 27 April
and get back into port on afternoon of 16 May, we
have 24 days to work

We could save 2 days by cutting 100 miles
of each leg from the seaward end.

IG 24-4

JD 112

Trying 86 address tapes so that I can get alerts. If I could get alerts I could schedule my course changes so as not to interfere with satellite fixes.

- 1 Green paper tape with code ROZE/515 UT
~~calculations~~ printed on leader
 a) calculated alerts with the input parameters from the paper tape
 b) obtained one good fix
 c) loaded out after about 5 hours of operation
- 2 blue roll with code ROZE/514 on leader
 would get one 03 fix and wouldn't get any more
- 3 blue rolls with code ROZE/515 on leader
 and "DEC WRITER VERSION FOR U of TEXAS"
 on leader in red ink listed 1640 JD 112
 a) calculated alerts
- 4 blue roll with code ROZE/514 on leader
 "May 19 1975" stamped on leader
 a) would not calculate alerts
- 5) free fold would not load

IG-24-4

JD112

SAT NAV 8K Types

3 blue roll with code ROGE/215 on leader
and DEC WRITER VERSION FOR U. OF TEXAS"
on leader in red ink

- a) calculates good fixes
- b) calculates orbits
- c) updates orbital parameter table for when
new satellite is received. However it
seems to write over previous update so that
we have 5 old satellites and 1 new one even
if we have received 2 new ones

IG-24-4

JD 113

Sat April 23

still in port with generator problems
sawbongs did not arrive with freight
we have only 2 sawbongs on board.

If we start work in afternoon of 24 April
and arrive back in port afternoon of 16 May
we have 22 days of work unless we have to
come in to pick up sawbongs.

transit and shearer repair work to start of

NSF dip lines 100 nm - 1000 + cross line 10

2 NSF dip lines 100 nm - 1000 + cross line 69

transit to first strike line 6 kts 8

2 NSF strike lines 100 nm 4 kts 40

transit to base of IPOD ladder 30 mi 6 kts 5

IPOD 2nd fold ladder 400 nm 4 kts 115

IPOD single channel 100 nm 4 kts 29

pick up sawbongs

Shipment from US did not arrive until Wed.
When shipment arrived, we sent out 30 boxes
of tapes and took on the new sound generator.
We thought that we might leave Wed
evening. Later in afternoon generator blew
and we were delayed again. By then the
shipment of tapes that we had off loaded
had gone to San Salvador.

JD 114

STREAMER WORK

switch out ~~no~~ #1 line
 The section was took out but #1
 on it is well as 10/105 S.N. 1
 in taking it out we cut it near one end and
 accidentally put friction tips over the back.
 We took it out because there was no response
 on it to remote waves. It checked OK on
 leakage & S.N. check.

A section on deck labeled #23 have checked out
 OK for continuity on all pins / wires. It also
 checks OK for sensitivity. We will probably
 swap this one for #24 line which contains
 salt water.

calibrated #1 & #2 depth sensors with
 pressure sleeve. Could not calibrate #1, it
 did not read above 12 even when they put 60 lbs
 of pressure on it. Sometimes it reads 0 sometimes
 it doesn't. Apparently all the spares on board
 have been substituted into its place with no
 improvement. There must be a bad wire
 somewhere up the line.

We swapped it then discovered a big gap
 in the line section noted #24. There are trying
 to double back it to stop the leak.

As noted above we swapped sections out in the
 #1 shot because #1 tree appeared dead.
 The replacement section tested satisfactory in lab.
 In place however the replacement section
 was as dead as the original. The problem
 must be in the DFS.

IG 24-4

JO 115

Sonobuoy # 34

2216

launch

play out on flat bed

with bird pass

50 - 500 Hz

6 - 300 Hz

looks like a better band

for scanning 0 wave on flat bed

DFS down

ledex problem

OUTPUT LEDEX 5310

100 bulb burned out replaced bulb
required gain greatly reduced

sonobuoy # 35

begin

0124

on JO 116

ledex problem

ledex stuck in

replay position

IG-24-4

JD 1/16

0124

begin sonobuoy # 35

Sonobuoys lost 3 hours before they sink
 we plan to shoot to sonobuoy with air guns
 for 2 hours, then shoot to sonobuoy with
 magnetos for 1 hour. The separate for
 magnetos is 22 seconds to get 24 fold
 reflection data while at the same time getting
 reflection data.

O-wave played out on flat had directly from
 sonobuoy thru a filter. We started with
 a pass band of 30-200 Hz but lost O-wave
 the last 1/2 hr. Then we opened up to
 5-1000 Hz to find O-wave and it together
 in receipt.

Joel's shipment of tapes left Acapulco
 this morning Tues April 26 on
 plane 4 m. flight 504
 way bill no. 026-5367-0492

Sonobuoys located and we will pick them
 up Thurs a.m.

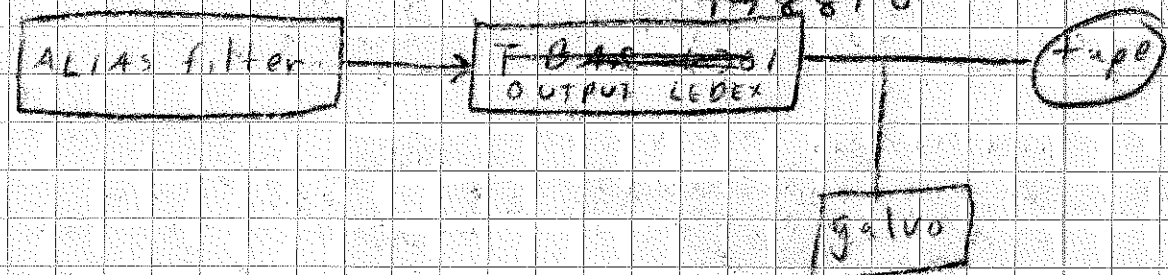
IG 24-4

J.D. 117

Problem with DFS

Symptom - RC/RP ^{monitor} records badly ^{monitor} when in record mode OK.

Cause - sticking of OUTPUT ^{LEDEX} ~~174550~~ ^{S310} ~~174550~~ ¹⁷⁴⁵⁵⁰ references TI drawing



Apparently if monitor records mode when normal record mode is OK then data is on tape OK. - for LEDEX is concerned RECORD mode monitors less OK.

On good RC/RP records the green lights should come on at bottom of middle DFS panel.

INPUT	GALVO
REP	DIRECT
OK	OK

IG-24-4

Wed 27 April

tentative schedule

pick up sonobuoys in Acapulco on 28 April

LEAVE Acapulco 1800 ST 28 April

transit to IPOB area and lay cable
16 hours

Begin NSF multichannel strike lines 1000 29 April

START IPOB multichannel ladder 1800 30 April
5 daysStart IPOB single channel 1800 5 May
3 daysStart OBS refraction 1800 8 May
3 daysLeave IPOB area for Costa Rica 1800 11 May
420 n.m.OBS O Costa Rica 1200 13 May
1800 Z

Wed 27 April

Navigation

We Need to Calculate
Alerts so that we can
have some idea of whether or
not ~~our~~ our equipment is working.
Alerts would also help
in deciding when to make course
changes.

plans for extension

Recovery of CR OBS net $1\frac{1}{2}$ days
complete 0600 Z 15 May

1 additional long ref line CR 24 hrs.
1 short line 12 hrs.
36 hrs.
complete 1800 Z 17 May

transit to Guatemala zone
410 m. at 104 to 42 hrs
arrive 1200 Z 19 May

Deploy Guatemala E. Q net
6 hrs. / station incl transit
30 hrs. complete 1800 Z 20 May
transit to Acapulco
8 hrs. arrive 0200 Z 21 May

I G-24-4

Wed April 27

phone message to Galveston

requested 4 day extension / day to allow
for refraction line off Costa Rica and
deployment of Guatemala OBS.

requested

5 treasure oil - 4 drums

Brown tape 4 cases

electrical tape 2 cases

crimp connector for line spheres in 12
gauge wirechar feed drum (rubber covered roller)
for UH Rytton part 552516-1

a generator is being flown to Guatemala
tomorrow. It can not get to El Salvador
until Monday.

informed Joe that main part of Poole coupling is
still in Galveston

Refraction lines
40 nm each side of center

shot 80 nm at 8 kts	= 10 hrs.
burst 80 nm at 10 kts	8 hrs.
deploy & recover	6 hrs.
	<u>24 hrs / line</u>

I G-24-4

Friday 6 May

Plan

1200 Z

6 May

leave Acapulco
toward the IPOD area
deploy streamer

0000 Z

7 May

IPOD dip lines across
Middle American Trench inner slope

0400 Z

9 May

2 short multibeam track lines
3 OBS refraction lines

0600 Z

11 May

leave IPOD survey area for Costa Rica

1300 Z

13 May

obtain first OBS

2000 Z

14 May

obtain last OBS

1900 Z

15 May

OBS refraction line off Costa Rica

1800 Z

16 May

multibeam strike line off Costa Rica

1200 Z

18 May

toward back to Guatemala area

1200 Z

20 May

multibeam line seaward of Mid-
American Trench

1200 Z

21 May

OBS refraction line off Guatemala

0600 Z

23 May

deploy earthquake OBS
in Acapulco

IG 24-4

Friday May 6

problem persists with line #1. At the end of the last multichannel line (604 10) on wire check #1 showed abnormally low resistance as if there were a short ~~some~~ just inboard of #1. #1 was dead reasonably.

On putting the streamer out today I saw salt water in #1. We therefore switched at #1. We took off a line section labeled #97 and replaced it with one labeled #24. #24 seems to have more salt water than #97. ~~Apparently~~ the #24 had supposedly been decanted & fixed. Not so good I guess.

Today with before & after interchanging sections we found #1 true on resistance to be open instead of short.

after replacing #1 today we have active sections ~~labeled~~ labeled #97 and #1 on deck. We have active sections labeled #27 and #23 on the streamer.

Found the cause of the open to ~~be~~ ^{#4 depth transducer} ~~be~~ there was a broken wire at depth transducer #4.

We broke open boat #4 & depth transducer. Looking at from here to #1 line we measured about 570 ohms which is about what we should read. Looking in to here we shall measure an open.

We broke open boat at inboard end of line #20 found open in the inboard of that. Looking on #20 line we saw not just out of phase with Sonar on #20. It was due to something inboard of #20 line since boat #9 connections were open at inboard end of #20 line when we made this check.

IG-24-4

Friday May 6

breaks open lead at inboard end of #23 line and found lots of leakage on channels 7-23 and the open leakages and from DFS with shorting plugs across the open end of dead sections. Finding out from inboard end of #23 line no found 710 Ω on line #1.

Same situation at outboard end of #24 line.

Open inboard end of #24 line and put shorting plugs across open end of stretch section. Still open leakages on it but #23 goes away. No turning the known leakages on #23 goes away. Problem seems to be in stretch section on inboard end of stretch.

Open outboard end of leader - #1 line still open. Little salt water in stretch lead side. More than in some of the line sections.

Rechecked that leakage measured at DFS before opening lead at outboard end of leader. All present leakages good.

The lead end of the leader ~~to~~ is a piece that contains barium. The inboard end of this piece leaks in.

Sat May 7

See check on line #1 reads 0.40 SHORT

The cause of last meter's open was that streamer had not been secured properly to DFS after last manipulations were made. If last meter work was for naught.

IG 24-4

Sat 7 May

problem with intermittent 47 gals noise
on all channels

Noise is intermittent within a shot & between
shots

It will show up on a group of shots and then
disappear causing a patch on the master record

A. found that manually turning the stop/manual
hand from REC to STOP and back will terminate
the noise for awhile - LEDEX again

G. Gough found a loose wire that
connected output amplifiers to ground.

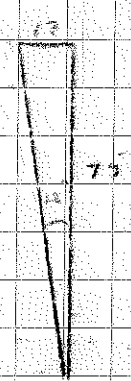
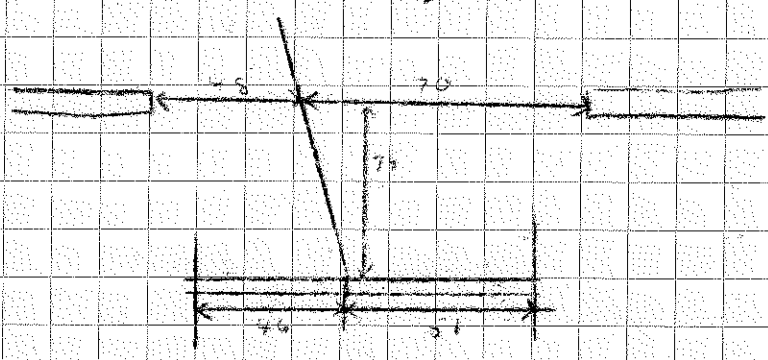
Apparently the open ~~to~~ on time ~~to~~ of last
week was due to a moment of ~~unstable~~ noise,
but had not been changed back. A. now
has dead shot on #1

IG 24-4

9 May 77

0330Z

stair angle



IG-24-4

10 May

tried 4 soundings last mite - only one
partial success

soundings 36
 37
 38
 39

engine problems last mite on line GUA-16
problem with pressure - it seems that
compressor valve broke & been damaged up. Later
valve broke & compressors flooding engine room with
water

has many finishes multichannel in IPDD area

message from 6 direction
Telephone

run test programs to find problem

SAT NAV

interchangeable to 2 44 bands

run majority note with full orbital parameters
print out for all intelligence that we
can track

long back OBS spaces

IG-24-4

10 May

pulled in streamer this morning

there is a leak in line # 20 and a
leak in a dead section near line # 24 (#1?)

at noon we deployed 2 OBS to start
refraction for IPOB. We will shoot soundings
on way back to pick up OBS.

2204 z Sounding # 40 deployed

IG24-4

16 May

in Puerto Arnes today for fuel & water.
will contact G. A. A. to brief them on
progress & plans.

~~Summary~~

IG 24-4

16 May

Summary of Leg 4 multichannel shooting

day / time / shot point #

line	begin	end
GUA-2	114/1301/1	115/1533/4342
GUA-3	115/1556/4407	116/1017/7392
GUA-4	116/1100/1	117/0437/2885
GUA-5	117/0514/1	117/0930/686
GUA-6	117/1612/10	118/0521/2162
GUA-7	118/0724/1	119/0450/5509
GUA-8	119/0736/1	120/0041/2795
GUA-9	120/0311/1	120/1838/2527
GUA-10	120/2139/1	121/1242/2461
GUA-11, 12	121/0938/1	123/0716/3541
GUA-13	123/0739/1	128/2000/2021
GUA-14	128/2315/014	129/1203/2107
GUA-15	129/1452/3	130/0228/1901 ← broad case
GUA-16	130/0651/1	130/1305/0973

290 tapes as of May 16

IG-24 Leg 4

		time	TD
left	Acajutla	2330 Z	113
arrive	Acajutla	2100 Z	123
left	Acajutla	1400 Z	126
anchor	Acajutla	0800 Z	131
arrive	Punta Arenas	0300 Z	135 136
left	Punta Arenas	2120 Z	137

IG 24-4

18 May

hand carry tapes for GUA-15
244266 - 244280

19 May

Maggie ~~looks~~ fish come angled during shooting
+ last refractor line off Costa Rica
+ a bottom plate on the fish had been loose
and a 20 lb shot opened + further pulling
the out and putting us out of business
George Peterson worked on it today and it should
be back in business tomorrow

We will start the first of 4 refractor
lines off Guatemala tonight + have 4 together
with the 3 that we shot earlier in the
month should complete refractor work off
Guatemala.

Outstanding equipment problems

Tektronix hand copier out
8k navigation program out
maggie fish out
multichannel streamer

- 1) channel 1 still out
- 2) looks ~~minimal~~ in line #20
and in lead section near line #1
- 3) stretch section spare has a
large hole in it

problem with channel 1 is on the leader on
in the sections inboard of #4 depth transducer
There is a short there somewhere

IG 24-4

19 May

So far we have had no luck with military soundings. i.e. on sonar records have shown no clear refracted arrivals from either the Guatemala slope or the Costa Rica slope or ocean crust off Guatemala. One problem seems to be the lack of range ~~data~~ we seem to be out of radio range after about 15-16 miles.

On the slopes we may also be having trouble with heterogeneity. OBS results indicate low Q. Maybe we just aren't getting good strong refractions.

So far on this leg we have shot soundings #37 then #41 36, 37, 38 did not last long

To date we have ~~just~~ deployed 11 refraction OBS's and recovered all of them. We recovered 4 of the 15 OBS earthquake units from Guatemala.

DFS problems this leg
symptoms

1) 47 cycle noise (distorting) record intermittent

~~problem~~ cause

low voltage on power supply?

also loose ground wire on output amps

2) high gain after AC/AP intermittent

stick up, output Ledex 5310

3)

AGC bulb burned out

I 624-4

19 May

STREAMER

Lead is presently distributed on streamer in the following way:

outboard structure	7	9	4	d	2
1 line	3	1	3	d	3
lead	3	d	4	21	3
lead	3	10	3	d	3
2 line	3	d	3	d	2
d	3	d	3	22	3
d	3	11	2	d	3
3	4	d	4	d	2
d	4	d	4	23	4
d	4	12	4	d	3
4	3	d	3	d	5
d	4	d	2	24	7
d	4	13	3	total	
5	3	d	3		
d	4	d	3		
d	4	14	4		
6	2	d	4		
d	3	d	4		
d	4	15	2		
7	3	d	4		
d	3	d	2		
d	4	16	3		
8	3	d	4		
d	3	d	3		
d	3	17	3		
		d	2		
		d	3		
		18	3		
		d	3		
		d	4		
		19	4		
		d	3		
		d	4		
		20	4		

-8

-7

-6

-5

-4

-3

units

600

700

800

900

1000

1100

2 Engine rpm

23 May

EXPLOSIVES

at the end of IG 24-4 we have on
board

22 cys

22

delta primes

no

nitromons

75

feet of fuse

2269

cases of multiple nitromons

23 May 77

May Tape

IG24-4

Box #

Tape #

Box #

Tape #

1	244001 - 10
2	244011 - 20
3	244021 - 30
4	244031 - 40
5	244041 - 50
6	244051 - 60
7	244061 - 70
8	244071 - 76
9	244077 - 82
10	244083 - 88
11	244089 - 98
12	244099 - 108
13	244109 - 118
14	244119 - 125
15	244126 - 135
16	244136 - 145
17	244146 - 151
18	244152 - 157
19	244158 - 163
20	244164 - 169
21	244170 - 175
22	244176 - 181
23	244182 - 187
24	244188 - 193
25	244194 - 203
26	244204 - 209
27	244210 - 215
28	244216 - 221
29	244222 - 227
30	244228 - 233
31	244234 - 239
32	244240 - 245
33	244246 - 251
34	244252 - 257
35	244258 - 263
36	244264 - 265
37	244285 - 263

~~38~~~~301~~

38 244291 - 295

39 244296 - 301

40 RS/RP

281 - 284