ACOUSTICS | ORCAWALE | POI SONOBUOYS

ORCAWALE 2001
ACOUSTICS

RECORD

SONOBUOY LOG

7530-00-222-3525
FEDERAL SUPPLY SERVICE
(GPO)

Here is the list which is published in the Navy sonobuoy manual with the asterisked channels prohibited as noted.

Channel	Freq.	Channel	Freq.	Channel	Freq.
1 *	162.250	34	136.750	67	149.125
2	163.000	35	137.875	68	149.500
3	163.750	36	137.500	69	149.875
4	164.500	37	137.875	70	150.250
5 *	165.250	38	138.250	71	150.625
6	166.000	39	138.625	72	151.000
7	166.750	40	139.000	73	151.375
8	167.500	41	139.375	74	151.750
9	168.250	42	139.750	75	152.125
10	169.000	43	140.125	76	152.500
11	169.750	44	140.500	77	152.875
12*	170.500	45	140.875	78	153.250
13	171.250	46	141.250	79	153.625
14	172.000	47	141.625	80	154.000
15	172.750	48	142.000	81	154.375
16	173.500	49	142.375	82	159.750
17*	162.625	50	142.750	83	155.125
18	163.375	51	143.125	84	155.500
19*	164.125	52	143.500	85	155.875
20	164.875	53	143.875	86	156.250
21	165.625	54	144.250	87	156.625
22	166.375	55	144.625	88	157.000
23	167.125	56	145.000	89	157.375
24	167.875	57	145.375	90	157.750
25*	168.625	58	145.750	91	158.125
26	169.375	59	146.125	92	158.500
27	170.125	60	146.500	93	158.875
28	170.875	61	146.875	94	159.250
29	171.625	62	147.250	95	159.625
30	172.375	63	147.625	96	160.000
31	173.125	64	148.000	97	160.375
32	136.000	65	148.375	98	160.750
33	136.375	66	148.750	99	161.125

best channels to use on Jordan

* these channels prohibited within 200 miles of the coast

ORCAWALE 2001

ACOUSTICS SONOBUOY LOG

Leave this side blank (except for some small notes)

SONOBOUY #

S#

Date

Species

DAT Tape #

LAT/LONG

SONOBOUY TYPE (ex, 53 D)

Settings (Channel, time, depth)

TIME Deployed (& approx distance from animal)

TIME Updates: animal location, vocal activity, receiving strength (in bars)

TIME start/stop monitoring

- try to write only on right hand side
- leave at least 1 blank page after entries
- leave more blank pages if tape needs to be re-monitored

S#30
Sei Whale

8.04.01
Orcawale SB1

53B 5845-01-155-0151/8W62
Ch 87 8hrs 90ft AN/SSQ-53B LOT049
06/88

0936 Bouy deployed ~1nmi animal is behind us

DEAD BOUY

(monitored until 0955 - still dead)

Reset Dat
✓→ set clock time
✓→ reset record to 48K sampling rate

CLOCK ON DAT IS OFF
Synch 0956 local
8min 07sec Dat

★ Check Tascam 7 1:15:39 → 1:23:58
Odd sounds (vocals?) as we were approaching the whale

①

~~S#30~~ 8.04.01
Sei Whale

53A LAV-111A N00163-82-C-0070 MNFG # 37695
Ch28 90ft 4hrs LOT 20

0940 Bouy deployed - animal ~1nmi behind us
→ Good signal (start recording
0941 Animal is ~1/2nmi off port beam
0941 Now going to CS
Ch28 L (good)
Ch87 R (dead)
Not monitoring now, need to re-listen until note

Joy & Shannon Remonitored on 8/04
DAT TIME
04.50 - 1st sonograph [illegible] only attend to a vocal
→ did not see the upsweep ~ 7:20 (0955)
OBSERVE - WE OUT FOR A FEW SECONDS

0955 Poss LF upsweep to 95 Hz (7min ~20 sec)
Ch28 3-4 bars, Ch87 1 (bad still)
(Screwy monitoring Problems → remonitor to Dat Time 11:28sec)

~~Check~~ Tascam

S#30 sonobouy #2 con't 8:04
Sei (remonitor first 12min of DAT)

Dat TIME
10:12 – cut out some noise
11:14 knock – but on other channel?
11:23 knock
11:35 knock

Didn't necessarily use anything else

12:29 Ship noise – stopped remonitor.

10:02 – Dat 12min Ch28 R & L channels R Ch28 3bars L Ch28 2bars
10:07 Possible LF knocks?
10:08 Upsweep to 61 Hz
Radio Interference – GRRR!!!
10:09 Quiet Again – R = 1-2 bars L = 1 bar 3 getting more static, losing reception
10:12 Ship is turning (??) & reception got better
10:15 We are about 4nmi from bouy drop & we may be losing our reception. → getting more static
10:21 Static Bad – Stop Monitoring Now (keep recording

23
60'
8hrs

14
90'
8hrs

need cases for Lot #

②

S#76 O.orca & M.navianglae 8-12-01

45° 45.70 N, 124° 10.77W ORCAWALE SB2

SB57 Ch 14, 90', 8hrs 5845-01-289-9072 8W73
AN/SSQ 57B/14 LOT 031

1317 Start DAT

1321 Deploy Bouy

1321 45° 45.70 N sonobuoy in H_2O

124° 10.77W

S# 76 , 0.0

1328 Start Monitoring - There have been EC & Squeals & loud knocks (MN?)

1335 Giving ↓2 reign of these guys - not getting many vocals, need to re-do this → I can now, losing signal

1425 Stop recording - has not had signal in a long time

* There was a large container ship ~10-15 miles from the location of the bouy drop

*Both Biopsies and Photos on this single Fin whale

③

~~S#~~ 98 B. physalus 9-3-01
47° 7.66N, 127°56.04W Tape# SB3
SB53 AN/SSQ 53A 8W49 N0016382C0070 LOT 20
Ch 20 4hrs 90'

1754 Buoy tossed, start recording → Good Buoy
Buoy was tossed ~400m off our bow
(probably w/in 500m, not sure)
Ship noise BAD

1758 whale resurfaced 400-500m from sonobuoy
1800 vocals! (but ship noise very loud)
~05:57 on tape
- 4 pulses ~ 200-400 Hz (~1800)
1810 Ship noise a little better now (we are ~3/4 nmi from buoy)
(2248 on DAT) - possible signals @ 111 Hz
(1818) - Going back to CS now ~3 bars each
1823 - we are now on CS - should be going by the animal again in a bit?
1825 - Poss upsweep? 60-117 (30:47 DAT)
1826 97Hz? (32:18) - hard to tell, may be something?
1830 - back up to 6 bars (I think the buoy is ~1nmi starboard)
1829 - we are now ~ 2nmi from buoy (~3 bars
*need to re-check stuff @ 200 - 250 - some ~1sec moans?
not sure what they are? Maybe noise?
1846 Pulse @ 418-488 Hz (51:30 ish) (53:40)
** 1851 Sounds ~120 Hz - (56:40), (57:40) (58:39)
1854 → More sounds now - 1:00:00

may be due to loss in reception

Moans??

S#98, con't

9-3-01

1855 - Starting to lose reception (1 bar each)
→ more LF pulses, much (all?) related to losing reception
1900 - Stop monitoring (reception getting bad)
will keep recording
→ Bouy is just over 4nmi to our stern

~~ch13 60ft 8hrs~~
~~AN SSQ 57A 8W60~~
~~N00 16384 C 0010~~
~~LOT 102 MER 82268~~

Ch14 90ft
AN SSQ 53A 8W49
N00163-82-C0070
LOT 28 MER 37695

(4)

S#179 Blue Whale 9.21.01
42° 48.67 N, 124° 39.69 W SB4
Sonobuoy Ch14, 90ft (53D)

0952 Dropped buoy - w/in 1/4 nmi of whale
0953 30R net 15 - whale position

1003 Just now started vocal
1003 Blue Whale 70° 2-2.5 net
1004 - CS
1013 - [illegible]
DAT 12:30 - [illegible]
1020 - 1-2 bars
1021 - Ship turning around [illegible]
1026 - 3-4 blows we are approaching [illegible]
- 6-7 bars turning around [illegible]
10 CS. We are now [illegible] from buoy
Animal appeared to be feeding
1041 1-2 bars - [illegible]

*There were a million sightings — faint vocalizations. Other cohorts may be present

This animal was feeding @ the surface ... when the sound was [illegible] avoided the [illegible]

9/21/01

S#17 9 Remonitor - SRanker

DAT TIME	Notes
06:20	75 Hz moan? - 1.1 sec duration w/ possible 80 Hz component before it [illegible] a distinct whistle
12:00	170-180 Hz upsweep ~1.8 sec duration
12:20 !!	75-82 Hz moan? 1.7 sec duration
13:50	2 upsweeps? @ 206-227 Hz, 2 sec @ 208-227 Hz, 1.7 sec
19:56	195 Hz-216 Hz upsweep 1.7 sec duration

(nothing else)

*There do appear to be vocals on this tape, but they may not be [illegible]. There were a lot of whales this day (fin, blue, humpback & possible sei & minke) — so there may be more distinct vocals?

AN SSQ 53B [illegible]
N00163 [illegible] - 002
LOT 049 MFR [illegible]

DID NOT WORK!

(6)

S#189 B. musculus
43° [illegible] N 124° 31.52 W
Ch 8 90 ft [illegible]
53B
1333 [illegible]
1334 [illegible]
1335 [illegible]

BAD [illegible]

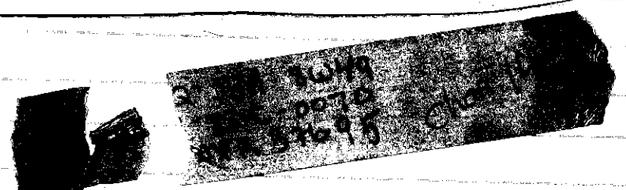
ANSSC 53B [illegible]
N00163 97-C-0002
lot 049 UFF 376[illegible]

S#200 B. musculus 9.21.01
53B CA 87 [illegible]
US 32. [illegible] N 12 25.65[illegible] SB5

~~Start [illegible]~~
1st Day deployed
No accident [illegible]

1200 Still good Day

Ch14
AN/SSQ 53A 8W49
N00163-82C-0070
Lot 28 MFR 37695



(5)

(8)

S#232 B. musculus

9.24.01

Lat/Long 41°56.46'N 128°07.14'W

SONY DAT SRS

Ch14

1857 Bouy dropped
1857 Start Recording
looks Dead
↳ It looks like it ended up working after a few minutes, but not real well - but not great reception

See notes next page
(2nd buoy on this sighting)

Animal was [illegible]
Todd says that this is the typical [illegible] they get on recording whales (A-B calls)
Bouy dropped ~100m [illegible] from whale
(moving all the time North)

2nd buoy
Ch 27, 190ft, 4hrs
AN/SSQ 53A SW49
N00163-82-C-0070
LOT 28 MFR 37695

[redacted]

See previous page for Lat/Long & notes on Animal Behavior

NEED TO RECHECK!!

2nd buoy

(b) (9)

S#232 B. Musculus
(see prev. page)

9.24.01
Sony DAT
SAS

1858 2nd buoy in - far off
1902 Ch 27 (red) 3-4 bars
Ch 14 (white) 2 bars
we are 2 mi from buoys (whale & some wind sins (?))
hearing both channels - I think both are good signals
I hear some noise

1906 Moan? 212Hz ~ 0.75 sec long (09:18 DAT TIME)
↳ noise? sure Man need to be monitor
1912 I think we are approaching buoy - getting noises (we are approaching buoy J2)
1915 J2 is on - we are going that way...
↳ Ch27 3 bars, Ch 14 1 bar

1927 (30:33 DAT) Possible Sound? - Pulsive ~2sec <100Hz

1931 Ch 27 2 bars Ch 14 1 bar

1937 (1028 DAT) Poor [illegible]
Gone [illegible]

Review of: (2)

Sighting #232 SB Tape #5

Time References are Atime from tape:

≈0315 : 10Hz "pulse"? <1sec (Right channel only)
↳ Noise/interference?

1047 : ≈48 → 33, =3sec dswep. Stronger on Right channel

1215 5 : ≈55 → 29, 2sec dswep, fast, both channels

3406 : 58 → 33 ≈ 2sec dswep, both channels (weak signal on both)

[redacted] → BAD BUOY

[redacted] → Good

34° 30.58N, 12° 57.04

1114 (CH 10)

↳ it sunk

1117 L/R

DAT TIME

* [illegible] Harbor
2 mi [illegible] the bay

[illegible] Track 1980
to [illegible]
[illegible]

[illegible]
[illegible]

↳ MANY LF DOWNSWEEPS
EVERY FEW SECONDS
WILL DESCRIBE LATER

[illegible]
[illegible]
[illegible]
[illegible]
PROBE
AM [illegible]

[illegible]
(~3 ball [illegible]

1:02:25 [illegible]

1:09 [illegible]
[illegible]
[illegible]

1:27:40 [illegible]

→ [illegible] monitoring, but still recording
[illegible]

[illegible]

21H [illegible]

(not [illegible])

↳ [illegible]

7:12 – [illegible]

23:45 [illegible]?

[illegible]

1:59:32 – [illegible]

[illegible] / [illegible]

[illegible]

23:21 – [illegible]

– [illegible] – [illegible] reception

SB 113 Committee of Short Term
Sub. S. 2021
Testimony
Testimony of Dr. Bryan Bogard
Dean, [illegible]

M. Novenglia #443; #444 9/25/01

36° 22.5
122° 44-9
} 6 1241 L Prepared 57A - Channel 3
Seems to be Dud

36° 22.6
122° 45.4
} 53 Channel 27 1245 L
Working!

location
34 2.4
119 8.9

[redacted]

(8)

(12)

SH 272 [illegible]

1555 SB in [illegible]

[illegible]

(1320) [illegible]

1903 - 1-2 [illegible]

[illegible]

[illegible] short [illegible]
time

will [illegible]

[redacted]

S#291 B. musculus

SL 53
Wt 14

SHARNOSE LOD → 3-4 DAYS

DAT TIME
5 01

(P)

[illegible] (08:07 → [illegible])

[illegible] LF Downscan 28 [illegible]
(Sounds [illegible])

08:[illegible]

08:36 LF Downscan 30-35 Hz
08:50 "

30:00 "
30:40 LF Downscan [illegible] ~½ sec
31:20 [illegible]
31:42 LF Downscan
[illegible] 90 Hz Pulsing (~10 sec [illegible])
33:50 Loud (on 90?) [illegible]
37:45 LF Downscan

(41:35 – Reception period)

S# 291 B. musculv.

[redacted]

BAD BUOY

[redacted]

(10)

(15)

S#291 B. musculus

SC10

12mm

5934 HS

(51)

[illegible] Bird Watch [illegible] 2010

[illegible]

[illegible] 1:02 → EDT

1:02:50 Start Lee [illegible]

1:08:20 [illegible]

1:09:25 25-1012

1:09:40 [illegible] (18 and long)

Lost LB. [illegible]

1:09:50 50-42 [illegible]

1:09:56 Lt [illegible]

1:10:15 [illegible]

[illegible] 50 → 50-42 [illegible]

(1:18:38 → 1:50:00) LB [illegible]

[redacted]

(11)

(16)

10-14-01

Weather was very [illegible] - clear

[redacted]

S# 311 O. orca 10.20.01

BAD Buoy - no float, no reception

DO NOT HAVE SPECS
ON THIS BUOY

no monitor

need to re-monitor →
buoy comes & goes

S#311 O.orcas (12) 10·20·01
Ch 26 SB DAT 12

0912 Good buoy, start recording
animals ~100m off starboard bow
(not monitoring now)

0922

0928 15:00 — BUOY JUST DIED

1026 - going back to CS - animals weren't moving
much, need to re-listen to all of this
1036 - according to the map, buoy should be ~1-1.5nmi off stbd qtr
1100 - buoy reception is lost

(5)

VOCALS →

→ all below 1 kHz

[illegible]

DAT: TIME

BOT → bad wx, loud ship noise

16:00 - Bad reception [illegible] bad (static)

17:10 - reception better/good (but cause [illegible] good

[illegible] bad again [illegible] same [illegible]

[illegible] reception good [illegible]

28:56 - Ship noise very bad again, and reception/static bad as well

[illegible] - bad [illegible] noise [illegible]

1:00:00 reception getting bad again

1:04:00 reception better, [illegible]

1:13:44 580 Hz w/ harmonics

1:13:56 ^ 840-952 Hz ^ w/ harmonics

1:13:59 - faint [illegible]

1:14:30 another faint call (seen, not heard)

[illegible]

cannot tell - - -

[illegible] < 1 kHz

1:30:32 possible faint [illegible] 2 < 1 kHz

[illegible]

There [illegible]

↳ several more

(stop monitoring)

[redacted]

[redacted]

(13)

(14)

(13) (14)

#339 Minke whale 10.25-01
45°14'N 126°56'W SBB

~1740 [illegible] 57 [illegible]
1740 [illegible]

[illegible]

17 40
27
1767
1807

17 – [illegible] 08:14 – 1-2 [illegible]

[illegible]

27:09 [illegible]
45° 13.941N, 126° 55.858

→ [illegible]

5×OD Stop reading (1831)

Ch15 60ft 8hrs
1045 Buoy dropped, no signal 37°54.73°
(no float) 123° 04.58°

Ch23 60ft 8hrs 37° 53.985
123° 02.46

need to remonitor

(15)

S# 412 O.orca

11/15/01
SB 14

1449 - now reception on the buoy
Yes! vocals!!
Animals 90° left (>2 animals, at least 2 miles)
Signal is in & out

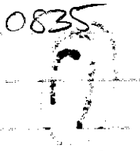
1705 Dropped Ch23 bouy w/in 50-100m of animals

Ch26
↳ Good buoy

Ch67 9062 8ms 53D
↳ Bad buoy

(16)

S# 415 B. musculus 11/18/01
33°50.45 N, 125°56.52 W SB15

0835 Ch26 buoy in - 0.45nmi from animal

~3min after it did a terminal dive
(start recording)

0839 All lines slack → onboarding
buoy now @ 180°, 18net

0902 2nd buoy dropped near terminal dive of A
1001 Changed both to Ch26 (1bar)

Re-examine by S. Rankin on 11/19/01
BOT - LOUD SHIP NOIS
0:06:00 - SHIP NOISE A LITTLE BETTER
0:25:00 - [illegible]
0:35:30 - [illegible] get more radio interference - SHIP
no vocal - will give it 10 more minutes

[illegible] NOTHING - STOPPED MONITORING
(BUT STILL RECORDING)

NO VOCALS

(17)

EVENING SONOBUOY (17) 11/23/01

34° 45.5 N @ 1741 Local SB 16

120° 58.9 W

-OFF POINT CONCEPTION MANY HUMPBACKS SEEN

Near Sightings #438 & 439

1741 Ch 14 buoy dropped, good buoy (start recording

1807 (1 bar now → Great Sounds

hearing phrase lyrics

1817 : Still hearing Humpbacks but sound more distant

1820 Right channel recording to Channel "11" next sonobuoy @ 1820 (5 7 buoy)

34° 45.4 @ 1821L

120° 58.4

Dud

Channel broke down!

1828 : Going back to recording SB16 on both channels (5 + buoy)

Channel 26

1825 : 34°45.4

120° 57.1

Dud

1829 hearing humpbacks

1833 Sound recording

(18)

1856 New Sonobuoy Channel 21 Sonobuoy # 17

34° 45.6 @ 1856 Local

120° 58.8

Eventually something out

1886

hearing [illegible]

hearing [illegible] sound [illegible] - surprise!

no obvious [illegible]

1905ish : strong, sunshot like sound [illegible] biological science

still no [illegible]

1910 - [illegible]

1916 : Finally! Can hear [illegible]

1937 : Still strong! May hear [illegible] ??

1938 : [illegible] sounds [illegible] of song?

having more High freq. [illegible] from [illegible]

1949 1948 - [illegible]

1958 ([illegible]) [illegible]

2003 (1:58:30±2) High frequency vocal as part of song

Back around to what I call end of song - [illegible]

[illegible] last 2 [illegible] of song

end of tape

2008L starting new tape SB# 17 continued

Evening sonobuoy cont. 11/23/01

2011 : 1-2 bars We're @ 34° 45.5 ≈ 5-6 nmi from buoy -
121° 04.4

2015 : 0810 on tape - getting back to "[illegible]" section @ 1839

2025/26 : 1800-1900 new phrases?

2028 : 2000 on tape - more new phrases?

19

M. novangliae #443 : #444 11/25/01

36° 22.6'N, 122° 45.4'W SB18

Ch 27

36° 22.5' } 6 1241L Dropped 574 - channel 3
122° 44.9 } Seems to be Dead!!

36° 22.6' } 6 1245L Dropped 53 Channel 27
122° 45.4 } Working!

Somebody dropped near #443 which is Mother/calf pair

19

1254L : Still no vocals heard, relatively quiet!

1302 : clicks heard - Sperm whales I think -

1305 : louder clicks

36° 23.5 } 1311L , 1 bar , occasional static noise
122° 50.4 }

1312 : still hearing faint clicks

1342L stopped recording - too much noise!!

Ch21
Single Blue Whale
Good photos (both sides)

NO VOCALS

S#452 B. musculus 11/26/07
37 02.303 125 51.474 SB 19
Ch21 90GT, 8hrs

1649 Buoy based - good buoy, start recording
(w/in ~1/3nmi of blue whale)
not sure why ship ship LARZ are heading ~135° magnetic
@ 1700 (6:06pm) - possible start record?

0:12:28 - faint 90 Hz pulsing (A'?) → too faint to be our animal?
(0:21:19 - possible ?M clicks? hard to tell w/LF buoy ?!?)

0:29:54 - still hearing some sperm whales?

nothing nothing nothing

0:37:00 - stopped here for now

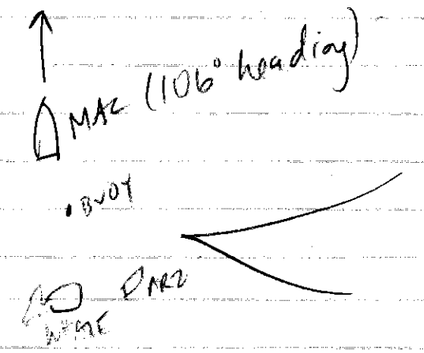
0:37:00 start monitoring (again)
0:51:00 - odd knocking (?? no channel ?) ~50Hz
I cannot hear in this [illegible] sperm [illegible]
0:52:34 → nada, stop monitoring altogether, but keep recording

S# 454 O. aca 11/27/01
Ch 26 ~~S#20~~ delete
36° 45.999 124° 32.811
1248 Buoy tossed, start recording
buoy fading in & out - I don't think it
is good (in between static then
nice noise

1303 Tossed 2nd buoy ch21 36° 46.132, 124° 31.578
This buoy looks bad, too
Ch 26 (right) ch21 (left)

BAD BUOYS
(both of 'em)

→ delete recording



S#456,457 M. novianglia (21) 11/27/01
Ch 15 SB20
36°43.652, 124° 23.508

1410 Ch 15 → bad buoy (57)

1412 Ch 26 (53) lost it, → Good buoy (~1/3 nmi from whale
(0:13:50) - DAT TIME 36° 43.507N, 124°22.844W
[Ch 15 right channel, Ch 26 left channel]
DAT
0:00:00 → no vocals so far, will monitor later (just hear MRZ?)

Tape reviewed by LFM - Nothing heard - no H-backs -

Ch27 53 90ft, 8hrs

* Many humpbacks today, passed a buoy after end of effort

Not thrown on a particular sighting, just hoping to get some song

It is a beaufort 6, but low sea height (high winds ~25 knots)

after this last NN sighting
3# (4M) M. novaeangliae
Evening sonobuoy - after effort
35° 18.883, 122° 12.627°

11/28/01
~~Ship~~ delete

1635 buoy in, looks good, start recording

DAT	TIME	
	0:04:00	5-6 bars, Ch 27 on left/right - ship noise loud
	0:18:00	Nada so far
	1:00:00	— no vocals

Delete Recording

NO VOCALS