

Eventlabel	CAR2013_sel_a_m_15																																																																				
Campaign	King George Island 2013																																																																				
Species	Southern elephant seal (<i>Mirounga leonina</i>)																																																																				
Age	Adult; >7 years																																																																				
Sex	Male																																																																				
Number																																																																					
Length (total)	4310 mm																																																																				
Length (standard)	3780 mm																																																																				
Length (curvatur)	4310 mm																																																																				
Girth (pectoral)	2950 mm																																																																				
Weight [estimated]	>3000																																																																				
Weight [calculated]																																																																					
Weight [measured]																																																																					
ARGOS PTT ID	24656																																																																				
Transmitter type	SMRU/Series 9000 SRDL/CTD																																																																				
Manufacturer	SMRU																																																																				
PTT Serial Number	10066																																																																				
PTT Software	ELLY_05APOST2009																																																																				
Setting protocol	<p>Software specification for ELLY_05A deployment (Pangea ellies Mar 2005)</p> <p>Page transmission sequences:</p> <p style="padding-left: 40px;">Until day 1464: 0 1 2 1 3 0 3 1 3 0 3 using 1 PTT numbers</p> <p>Satellite availability (UTC):</p> <table style="margin-left: 40px;"> <tr><td>00:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>01:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>02:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>03:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>04:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>05:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>06:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>07:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>08:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>09:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>10:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>11:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>12:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>13:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>14:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>15:</td><td>--</td><td>on</td><td>--</td></tr> <tr><td>16:</td><td>--</td><td>on</td><td>--</td></tr> </table>	00:	--	on	--	01:	--	on	--	02:	--	on	--	03:	--	on	--	04:	--	on	--	05:	--	on	--	06:	--	on	--	07:	--	on	--	08:	--	on	--	09:	--	on	--	10:	--	on	--	11:	--	on	--	12:	--	on	--	13:	--	on	--	14:	--	on	--	15:	--	on	--	16:	--	on	--
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23: -- on --

Transmission targets:

80000 transmissions after 300 days

In Haulouts: ON (one tx every 1 min 20 secs) for first 5 hours
then cycling OFF for 6 hours, ON for 1 hour

Check sensors every 4 secs

When near surface (shallower than 5m), check wet/dry every 1 sec

Consider wet/dry sensor failed if wet for 2 days or dry for 99 days

Dives start when wet and below 6m for 8 secs and end when above 6m for 0, or dry at any time

No separation of 'Deep' dives

A cruise begins if there has been no dive for 9 mins

A haulout begins when dry for 10 mins and ends when wet for 40 secs

Dive shape (normal dives):

4 points per dive using dive characterisation algorithm

3 speeds per dive

Dive shape (deep dives):

none

CTD upcasts: max 2000 dbar up to 6 dbar in 2 dbar bins.

12 cut points per profile

Send the deepest 2 upcasts in each 2-hour period.

Minimum depth to trigger collection of cast:

500m in hour 1

50m in hour 2

or 20% greater than current maximum.

Sample CTD sensor every 0.5 seconds.

Temperature: Collected, Stored.

Conductivity: Not Available.

Salinity: Not Available.

No GPS data

TRANSMISSION BUFFERS (in RAM):

Dive in groups of 3 (6.25 days @ 10mins/dive): 300 = 1200 bytes

No 'deep' dives

Haulout: 100 = 400 bytes

6-hour summaries in groups of 3 (9 days): 12 = 48 bytes

No berniegrams
No timelines
Cruise: 100 = 400 bytes
No diving periods
No spot depths
No emergence records
No Duration histograms
No Max depth histograms
CTD casts (5 days): 120 = 480 bytes
No GPS fixes

TOTAL 2528 bytes (of about 21000 available)

MAIN BUFFERS (in 6.2 Mb Flash):
Dive in groups of 3 (416.667 days @ 10mins/dive):
20000 x 115 bytes = 2300000 bytes
No 'deep' dives
Haulout: 5000 x 12 bytes = 60000 bytes
6-hour summaries in groups of 3 (750 days): 1000 x
71 bytes = 71000 bytes
No berniegrams
No timelines
Cruise: 5000 x 13 bytes = 65000 bytes
No diving periods
No spot depths
No emergence records
No Duration histograms
No Max depth histograms
CTD casts (500 days): 12000 x 65 bytes = 780000
bytes
No GPS fixes

TOTAL 3199 kb (from 6333 kb available)

PAGE CONTENTS (for 28-bit PTT codes):

PAGE 0:

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[2 bits: 8 - 9]

DIVE group in format 0:
Normal dives transmitted in groups of 3
Time of start of last dive: max 6 days @ 8
secs= 64800
tx as raw 16 bits in units of 1
(range: 0 to 65535)
(recommended sell-by 5 days 23 hours)
Sell-by range: 5 days 18 hours
Number of records: raw 2 bits in units of 1
(range: 0 to 3)
Reason for end: -- not transmitted --
Group number: -- not transmitted --
Max depth: -- not transmitted --

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Dive duration:  odlog 1/6 in units of 30 s
(range: 0 to 5715 s)
Mean speed:  -- not transmitted --
Profile data (4 depths/times, 3
speeds):
Depth profile:  odlog 2/5 in units
of 40 dm (range: 0 to 19020 dm)
Profile times:  raw 5 bits in units
of 32.2581 permille (range: 0 to 1000 permille)
Speed profile:  -- not transmitted
--
Residual:  -- not transmitted --
Calculation time:  -- not
transmitted --
Surface duration:  odlog 2/4 in units of 2.5
s (range: 0 to 588.75 s)
cf. cruise starts after 9 mins (540
secs)
Dive area:  -- not transmitted --
-----[201 bits: 10 - 210]

DIAGNOSTICS in format 0:

TX number:  raw 12 bits in units of 25
(range: 0 to 102375 )
Tag time (mm:ss):  raw 9 bits in units of 8
secs (range: 0 to 4088 secs)
Max depth ever:  odlog 1/5 in units of 250
dm (range: 0 to 23625 dm)
Number of resets:  wraparound 2 bits in
units of 1 (range: 0 to 3 )
Dry conductivity:  raw 7 bits in units of 2
(range: 0 to 254 )
-----[36 bits: 211 - 246]

Available bits used exactly
=== End of page 0 ===

PAGE 1:
PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[2 bits: 8 - 9]

DIVE group in format 1:
Normal dives transmitted in groups of 3
Time of start of last dive:  max 6 days @ 8
secs= 64800
tx as raw 16 bits in units of 1
(range: 0 to 65535 )
(recommended sell-by 5 days 23 hours)
Sell-by range:  5 days 18 hours
Number of records:  raw 2 bits in units of 1
(range: 0 to 3 )
Reason for end:  -- not transmitted --
Group number:  -- not transmitted --
Max depth:  -- not transmitted --
Dive duration:  odlog 1/6 in units of 30 s
(range: 0 to 5715 s)

```

Mean speed: -- not transmitted --
Profile data (4 depths/times, 3
speeds):
Depth profile: odlog 2/5 in units
of 40 dm (range: 0 to 19020 dm)
Profile times: raw 5 bits in units
of 32.2581 permille (range: 0 to 1000 permille)
Speed profile: raw 4 bits in units
of 15 cm/s (range: 0 to 225 cm/s)
Residual: -- not transmitted --
Calculation time: -- not
transmitted --
Surface duration: odlog 2/4 in units of 2.5
s (range: 0 to 588.75 s)
cf. cruise starts after 9 mins (540
secs)
Dive area: -- not transmitted --
-----[237 bits: 10 - 246]

Available bits used exactly
=== End of page 1 ===

PAGE 2:

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[2 bits: 8 - 9]

CRUISE group in format 0:
Number of records: raw 1 bits in units of 1
(range: 0 to 1)
Cruise number: wraparound 5 bits in units
of 1 (range: 0 to 31)
Start time: -- not transmitted --
End time: max 5 days 12 hours @ 2 mins=
3960
tx as raw 12 bits in units of 1
(range: 0 to 4095)
(recommended sell-by 5 days 11 hours)
Sell-by range: 5 days 4 hours
Duration: raw 9 bits in units of 90 s
(range: 0 to 45990 s)
cf. Max duration is 12 hours
Speed: -- not transmitted --
Reason for end: -- not transmitted --
-----[27 bits: 10 - 36]

HAULOUT in format 0:
Number of records: raw 1 bits in units of 1
(range: 0 to 1)
Haulout number: wraparound 5 bits in units
of 1 (range: 0 to 31)
Start time: -- not transmitted --
End time: max 5 days 12 hours @ 2 mins=
3960
tx as raw 12 bits in units of 1
(range: 0 to 4095)
(recommended sell-by 5 days 11 hours)
Sell-by range: 5 days 4 hours

```

Duration: raw 9 bits in units of 90 s
(range: 0 to 45990 s)
      cf. Max duration is 12 hours
Reason for end: -- not transmitted --
Contiguous: -- not transmitted --
-----[27 bits: 37 - 63]

SUMMARY group in format 0:
Transmitted in groups of 3
Record could be in buffer for 9 days
End time: max 7 days @ 6 hours= 28
      tx as raw 5 bits in units of 1
(range: 0 to 31 )
      (recommended sell-by 6 days 17 hours)
Sell-by range: 6 days 12 hours
Number of records: raw 1 bits in units of 1
(range: 0 to 1 )
Cruising time: -- not transmitted --
Haulout time: raw 6 bits in units of 15.873
permille (range: 0 to 1000 permille)
Dive time: raw 6 bits in units of 15.873
permille (range: 0 to 1000 permille)
Deep Dive time: -- not transmitted --
Normal dives:
      Avg max dive depth: odlog 2/5 in
units of 40 dm (range: 0 to 19020 dm)
      SD max dive depth: odlog 2/5 in
units of 40 dm (range: 0 to 19020 dm)
      Max max dive depth: odlog 2/5 in
units of 40 dm (range: 0 to 19020 dm)
      Avg dive duration: odlog 1/6 in
units of 30 s (range: 0 to 5715 s)
      SD dive duration: odlog 1/6 in
units of 30 s (range: 0 to 5715 s)
      Max dive duration: odlog 1/6 in
units of 30 s (range: 0 to 5715 s)
      Avg speed in dive: -- not
transmitted --
      Number of dives: odlog 1/4 in units
of 2 (range: 0 to 93 )
      Deep dives:
      Avg max dive depth: -- not
transmitted --
      SD max dive depth: -- not
transmitted --
      Max max dive depth: -- not
transmitted --
      Avg dive duration: -- not
transmitted --
      SD dive duration: -- not
transmitted --
      Max dive duration: -- not
transmitted --
      Avg speed in dive: -- not
transmitted --
      Number of dives: -- not transmitted
--
      Avg SST: -- not transmitted --
-----[183 bits: 64 - 246]

Available bits used exactly

```

=== End of page 2 ===

PAGE 3:

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[2 bits: 8 - 9]

CTD in format 0:

End time: max 5 days 12 hours @ 1 min= 7920
tx as raw 13 bits in units of 1
(range: 0 to 8191)

(recommended sell-by 5 days 11 hours)

Sell-by range: 5 days

CTD cast number: wraparound 7 bits in units
of 1 (range: 0 to 127)

Min pressure (now obsolete): -- not
transmitted --

Max pressure: raw 10 bits in units of 2
dbar (range: 0 to 2046 dbar)

Number of samples: -- not transmitted --
12 profile points 0 to 11 (from total of 12
cut points):

Min temperature: raw 13 bits in units of 5
degC/1000 (range: 0 to 40955 degC/1000)

Max temperature: raw 13 bits in units of 5
degC/1000 (range: 0 to 40955 degC/1000)

10 pressures: raw 8 bits in units of
1 dbar (range: 0 to 255 dbar)


Temperature: raw 8 bits in units of
3.92157 permille (range: 0 to 1000 permille)

Residual: raw 5 bits in units of 1
degC/1000 per sample (range: 0 to 31 degC/1000 per
sample)

-----[237 bits: 10 - 246]

Available bits used exactly

=== End of page 3 ===

Deployment	
Immobilisation	http://doi.pangaea.de/10.1594/PANGAEA.833216
Comment	Seal tag: ST 79 ST; C434 C435 Deployment site: Refugio Elephante Prev. Deployment: none
Tag deployed	2013-11-15T16:48 -62.294 -58.664
Tag retrieved	-- //
First transmission	2013-11-15T18:14:39 -62.294 -58.664
Last transmission	2013-11-27T19:53:13 -62.266 -58.627