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Department of the Navy

In accordance with the Letters of Authorization
Under the MMPA and ITS authorization under
the ESA

12 May 2014

UNCLASSIFIED
Annual Exercise Report
26 December 2015 to 25 December 2016
Year 3

For the U.S. Navy's
Hawaii-Southern California Training and Testing (HSTT)
Study Area

24 MARCH 2017

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ANNUAL HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING EXERCISE REPORT

INTRODUCTION

The U.S. Navy prepared this Annual Unclassified Exercise Report covering the period from 26 December 2015 to 25 December 2016 in compliance with the National Marine Fisheries Service (NMFS) Final Rule under the Marine Mammal Protection Act (MMPA) for the Hawaii-Southern California Training and Testing (HSTT) Study Area. This report includes only training information that is unclassified; all classified reporting requirements have been forwarded to NMFS in the classified version of this report.

In the HSTT Study Area Letter of Authorization¹ “Requirements for monitoring and reporting” the following report subsections were specified and are present within this report:

- (1) Major Training Exercises (MTE)/SINKEX
 - (i) Exercise Information (for each exercise)
 - (ii) Individual Marine Mammal Sighting Information (for each sighting in each MTE)
 - (iii) Exercise information for each SINKEX
- (2) Summary of Sources Used
 - (i) Total annual usage of each type of sound source
- (3) Sonar Exercise Notification
- (4) Geographic Information Representation
- (5) Special Reporting Requirements
 - (i) Total hours (from 15 December through 15 April) of hull-mounted active sonar operation occurring in the dense humpback areas generally shown on the Mobley map plus a 5-km buffer, but not including the Pacific Missile Range Facility
 - (ii) Total estimated annual hours of hull-mounted active sonar operation conducted in the Humpback Whale Cautionary Area between 15 December and 15 April

The information in this Annual Report represents the best practical data collection for this period. To provide accounting for the entire five-year period of the authorization, Navy will also submit a five-year close-out exercise report with final totals of authorized usage.

¹HSTT: 7(d) of the Training Letter of Authorization, and 50 CFR §218.75(f) (1) through (f) (5)

(1) HSTT – Major Training Exercises/SINKEX

(i) Reporting requirements for Coordinated and Strike Group Major Training Exercises

This section summarizes authorized sonar use and marine mammal observations from MTEs conducted within the HSTT Study Area during the reporting period. The HSTT MTEs include *Sustainment Exercises* (SUSTEX), *Integrated ASW Courses* (IAC), *Composite Training Unit Exercises* (C2X), *Joint Task Force Exercises* (JTTEX), *Undersea Warfare Exercises* (USWEX), and *Rim of the Pacific Exercises* (RIMPAC)¹.

(ii) Exercise information for each Major Training Exercise

Major Training Exercise sonar use and participants are classified and were forwarded to NMFS in the classified version of this report.

Table 1-ii-1. MTEs conducted in the HSTT Study Area.

(A) Exercise designator	(B) Date	(C) Locations	(D) Number of items or hours of each sound source bin used						(E) Number and types of US vessels and aircraft participating							
			MF1 (hours)	MF2 (hours)	MF3 (hours)	MF4 (hours)	MF5 (buoys)	ASW3 (hours)	CG	DDG	FFG	MH-60R/SH-60F dipping helo	SH-60B non-dipping helo	Submarines	MPRA	Non-ASW surface ship
SUSTEX	19 Jan – 22 Jan 2016	SOCAL	**	**	**	**	**	**	**	**	**	**	**	**	**	**
USWEX	27 Jan - 1 Feb 2016	HRC	**	**	**	**	**	**	**	**	**	**	**	**	**	**
IAC	26 Feb - 6 Mar 2016	SOCAL	**	**	**	**	**	**	**	**	**	**	**	**	**	**
RIMPAC	30 Jun - 4 Aug 2016	HRC	**	**	**	**	**	**	**	**	**	**	**	**	**	**
C2X	12 Aug - 25 Aug 2016	SOCAL	**	**	**	**	**	**	**	**	**	**	**	**	**	**
C2X	24 Oct – 9 Nov 2016	SOCAL	**	**	**	**	**	**	**	**	**	**	**	**	**	**
IAC	24 Oct - 30 Oct 2016	SOCAL	**	**	**	**	**	**	**	**	**	**	**	**	**	**
JTTEX	10 Nov - 21 Nov 2016	SOCAL	**	**	**	**	**	**	**	**	**	**	**	**	**	**

¹RIMPAC is not listed as one of the Major Training Exercises requiring reporting in the HSTT Final Rule, or the HSTT MMPA Letter of Authorization for training, but is listed in the sonar exercise notification section.

(F) Individual marine mammal sighting information by exercise

Table 1-ii-2. HSTT MTE – Individual Marine Mammal Sighting Information: SUSTEX 19 Jan - 22 Jan 2016.

16-Jan-16	2205Z	SOCAL	whale	1	VIS	Non-ASW ship	5	3	10	N	1001-2000	Maneuvered away	na	Mammal sighted ahead. Ship conducted port turn and slowed to 3 Kts
Date/time/location of sighting			Species	Number of individuals	Initial detection sensor	Indication of specific type of platform the observation was made from	Length of time observers maintained visual contact with marine mammal(s) (min)	Sea state (Beaufort scale)	Visibility (nm)	Sound source in use at time of sighting (Y/N)	Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source	Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed	If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal’s motion relative to ship	Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present

nr=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-3. HSTT MTE – Individual Marine Mammal Sighting Information: USWEX 27 Jan - 1 Feb 2016.

Date/time/location of sighting
Species
Number of individuals
Initial detection sensor
Indication of specific type of platform the observation was made from
Length of time observers maintained visual contact with marine mammal(s) (min)
Sea state (Beaufort scale)
Visibility (nm)
Sound source in use at time of sighting (Y/N)
Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source
Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed
If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal’s motion relative to ship
Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present

No sightings reported during this exercise.

nr=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-4. HSTT MTE – Individual Marine Mammal Sighting Information: IAC 26 Feb - 6 Mar 2016.

Date/time/location of sighting
Species
Number of individuals
Initial detection sensor
Indication of specific type of platform the observation was made from
Length of time observers maintained visual contact with marine mammal(s) (min)
Sea state (Beaufort scale)
Visibility (nm)
Sound source in use at time of sighting (Y/N)
Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source
Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed
If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal’s motion relative to ship
Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present

No sightings reported during this exercise.

ni=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-5. HSTT MTE – Individual Marine Mammal Sighting Information: RIMPAC 30 Jun - 4 Aug 2016.

Date/time/location of sighting	Species	Number of individuals	Initial detection sensor	Indication of specific type of platform the observation was made from	Length of time observers maintained visual contact with marine mammal(s) (min)	Sea state (Beaufort scale)	Visibility (nm)	Sound source in use at time of sighting (Y/N)	Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source	Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed	If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal’s motion relative to ship	Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present
2-Jul-16 0050Z	HRC dolphin	1	VIS	MPRA	3	2	10	N	>2000	None	na	Diving
6-Jul-16 1021Z	SOCAL dolphin	70	VIS	Non-ASW ship	nr	1	nr	na	nr	None	na	None
7-Jul-16 1901Z	SOCAL dolphin	2	VIS	Non-ASW ship	1	2	10	na	501-1000	None	na	Fin slapping
8-Jul-16 0006Z	SOCAL whale	1	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Spout blow
8-Jul-16 0018Z	SOCAL whale	1	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Spout blow
8-Jul-16 0023Z	SOCAL whale	2	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Spout blow
8-Jul-16 0034Z	SOCAL whale	1	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Spout blow
8-Jul-16 0100Z	SOCAL whale	1	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Spout blow
8-Jul-16 0153Z	SOCAL whale	1	VIS	Non-ASW ship	1	2	10	na	501-1000	None	na	Spout blow
8-Jul-16 0153Z	SOCAL whale	1	VIS	Non-ASW ship	1	2	10	na	501-1000	None	na	Spout blow
8-Jul-16 0214Z	SOCAL dolphin	12	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Surfacing
8-Jul-16 0900Z	SOCAL whale	1	VIS	Non-ASW ship	1	4	10	na	>2000	None	na	Spout blow
8-Jul-16 1000Z	SOCAL dolphin	30	VIS	Non-ASW ship	5	4	10	na	1001-2000	None	na	Surfacing
8-Jul-16 2200Z	SOCAL dolphin	30	VIS	Non-ASW ship	1	1	10	na	>2000	None	na	Surfacing
9-Jul-16 0100Z	SOCAL dolphin	20	VIS	Non-ASW ship	5	1	10	na	200-500	None	na	None
9-Jul-16 1742Z	SOCAL dolphin	8	VIS	Non-ASW ship	10	1	8	na	200-500	None	na	None
9-Jul-16 1820Z	SOCAL whale	2	VIS	Non-ASW ship	15	1	10	na	<200	None	na	None

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9-Jul-16	1825Z	SOCAL	dolphin	50	VIS	Non-ASW ship	5	1	10	na	200-500	None	na	Playing in the bow wake
10-Jul-16	2215Z	SOCAL	whale	1	VIS	Non-ASW ship	1	2	10	na	200-500	Maneuvered away	na	None
10-Jul-16	2300Z	SOCAL	whale	2	VIS	Non-ASW ship	5	1	10	na	200-500	None	na	None
11-Jul-16	0048Z	HRC	dolphin	4	VIS	Non-ASW ship	5	2	10	na	200-500	None	na	Surfing on bow wave
11-Jul-16	1850Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	4	na	200-500	None	na	None
12-Jul-16	0013Z	SOCAL	dolphin	27	VIS	Non-ASW ship	3	2	10	na	1001-2000	None	na	Riding bow waves
12-Jul-16	0014Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	7	na	200-500	None	na	Spout blow
12-Jul-16	0016Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	10	na	1001-2000	None	na	Spout blow
12-Jul-16	0048Z	HRC	dolphin	4	VIS	Non-ASW ship	5	2	10	na	200-500	None	na	Surfing on bow wave
12-Jul-16	0123Z	SOCAL	dolphin	30	VIS	Non-ASW ship	4	2	7	na	<200	None	na	Riding bow waves
12-Jul-16	0245Z	SOCAL	whale	2	VIS	Non-ASW ship	2	2	7	na	501-1000	None	na	Spout blow
12-Jul-16	0334Z	HRC	whale	3	VIS	DDG	3	3	10	N	<200	None	na	Swimming
12-Jul-16	0438Z	HRC	turtle	2	VIS	Foreign ship	1	1	10	N	200-500	None	na	Swimming with glee
12-Jul-16	1007Z	SOCAL	dolphin	30	VIS	Non-ASW ship	2	1	10	na	200-500	None	na	Jumping
12-Jul-16	1958Z	SOCAL	dolphin	5	VIS	Non-ASW ship	2	2	10	na	>2000	None	na	Jumping
12-Jul-16	2125Z	HRC	whale	1	VIS	Non-ASW ship	1	1	10	na	1001-2000	None	na	Blowing
12-Jul-16	2208Z	SOCAL	dolphin	30	VIS	Non-ASW ship	1	2	10	na	501-1000	None	na	Surfacing
13-Jul-16	0027Z	SOCAL	whale	1	VIS	Non-ASW ship	1	1	10	na	501-1000	Maneuvered away	na	Surfaced. Whale paralleled course and passed down port side at a safe distance
13-Jul-16	1515Z	SOCAL	dolphin	30	VIS	Non-ASW ship	2	1	7	na	>2000	None	na	Surfacing
13-Jul-16	1629Z	SOCAL	dolphin	30	VIS	Non-ASW ship	5	1	8	na	1001-2000	None	na	Surfacing
13-Jul-16	1935Z	HRC	dolphin	10	ACO	Foreign ship	nr	2	10	N	nr	None	na	None
13-Jul-16	2013Z	SOCAL	whale	50	VIS	Non-ASW ship	5	1	6	na	200-500	None	na	None
13-Jul-16	2232Z	HRC	generic	1	VIS	MPPRA	15	nr	nr	N	nr	Delayed buoy deployment	na	None
14-Jul-16	0000Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	10	na	501-1000	None	na	Surfacing
14-Jul-16	0000Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	10	na	501-1000	None	na	Surfacing
14-Jul-16	0215Z	SOCAL	dolphin	15	VIS	Non-ASW ship	10	2	8	na	200-500	None	na	None

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14-Jul-16	1308Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	8	na	<200	Maneuvered away	na	None
14-Jul-16	1323Z	SOCAL	whale	2	VIS	Non-ASW ship	3	1	8	na	200-500	Maneuvered away	na	None
14-Jul-16	1603Z	SOCAL	dolphin	6	VIS	Non-ASW ship	1	1	10	na	200-500	None	na	Jumping
14-Jul-16	1726Z	HRC	dolphin	8	VIS	CG	1	nr	10	N	200-500	None	na	Swimming
14-Jul-16	1726Z	SOCAL	dolphin	12	VIS	Non-ASW ship	1	1	10	na	501-1000	None	na	Jumping
14-Jul-16	1750Z	SOCAL	dolphin	30	VIS	Non-ASW ship	3	1	10	na	501-1000	None	na	Bow riding
14-Jul-16	2127Z	HRC	whale	4	VIS	DDG	nr	nr	nr	N	200-500	None	na	Surfacing and diving back down
14-Jul-16	2145Z	HRC	whale	5	VIS	Foreign ship	nr	nr	nr	N	200-500	None	na	None
15-Jul-16	0835Z	HRC	dolphin	2	VIS	DDG	3	2	10	N	<200	None	na	Closing to ride the bow
15-Jul-16	2226Z	HRC	whale	3	VIS	Foreign ship	5	2	10	N	>2000	None	na	None
16-Jul-16	1153Z	HRC	dolphin	55	VIS	DDG	2	2	10	N	200-500	None	na	Swimming
17-Jul-16	1905Z	SOCAL	pinniped	1	VIS	Non-ASW ship	65	1	10	na	<200	None	na	Seal
18-Jul-16	1710Z	SOCAL	dolphin	12	VIS	Non-ASW ship	5	1	10	na	200-500	None	na	None
18-Jul-16	2312Z	SOCAL	dolphin	30	VIS	Non-ASW ship	3	1	10	na	200-500	None	na	Jumping
19-Jul-16	0033Z	SOCAL	whale	1	VIS	Non-ASW ship	1	1	10	na	>2000	None	na	Water spray
19-Jul-16	0245Z	SOCAL	dolphin	3	VIS	Non-ASW ship	5	2	10	na	nr	None	na	None
19-Jul-16	0410Z	HRC	dolphin	1	VIS	Foreign ship	1	1	10	Y	501-1000	Powered down sonar	Dolphin bearing 065R, opening ship	Surfaced
19-Jul-16	0725Z	HRC	dolphin	10	VIS	Foreign ship	1	1	10	Y	nr	Powered down sonar	Dolphins bearing nr, relative motion nr	None
19-Jul-16	1630Z	SOCAL	dolphin	40	VIS	Non-ASW ship	5	1	10	na	200-500	None	na	Jumping
20-Jul-16	0235Z	HRC	dolphin	12	VIS	Foreign ship	1	nr	5	N	200-500	None	na	Swimming
20-Jul-16	1416Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	10	na	>2000	None	na	Water spray
20-Jul-16	1454Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	10	na	1001-2000	Maneuvered away	na	Blow, water spray
20-Jul-16	1538Z	SOCAL	dolphin	5	VIS	Non-ASW ship	nr	nr	nr	na	nr	None	na	None
20-Jul-16	1718Z	SOCAL	dolphin	15	VIS	Non-ASW ship	nr	nr	nr	na	nr	None	na	None
20-Jul-16	1949Z	SOCAL	dolphin	50	VIS	Non-ASW ship	nr	nr	nr	na	nr	None	na	None
20-Jul-16	5520Z	HRC	dolphin	30	VIS	Non-ASW ship	3	1	10	na	501-1000	None	na	Jumping

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21-Jul-16	0520Z	HRC	whale	2	VIS	Non-ASW ship	15	1	10	na	1001-2000	None	na	Chasing shark
21-Jul-16	1310Z	SOCAL	dolphin	70	VIS	Non-ASW ship	5	2	10	na	nr	None	na	None
21-Jul-16	2147Z	HRC	generic	1	ACO	Foreign ship	2	1	8	N	>2000	None	na	None
21-Jul-16	2321Z	HRC	dolphin	3	VIS	Foreign ship	3	2	10	N	<200	None	na	Jumping
22-Jul-16	0400Z	HRC	dolphin	30	VIS	Non-ASW ship	4	2	10	na	200-500	None	na	None
22-Jul-16	1948Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	10	na	1001-2000	None	na	Blow spout
22-Jul-16	2150Z	HRC	dolphin	3	VIS	Foreign ship	1	2	7	N	200-500	None	na	Swimming
23-Jul-16	0041Z	SOCAL	whale	1	VIS	Non-ASW ship	2	3	7	na	>2000	None	na	Blow spout
23-Jul-16	0527Z	SOCAL	dolphin	36	VIS	Non-ASW ship	10	1	8	na	200-500	None	na	None
23-Jul-16	1126Z	SOCAL	turtle	1	VIS	Non-ASW ship	2	1	5	na	<200	None	na	None
23-Jul-16	1340Z	SOCAL	pinniped	1	VIS	Non-ASW ship	2	1	8	na	200-500	None	na	Seal
23-Jul-16	1559Z	SOCAL	dolphin	40	VIS	Non-ASW ship	2	1	1	na	200-500	None	na	Diving/surfacing
23-Jul-16	1736Z	SOCAL	whale	1	VIS	Non-ASW ship	5	1	5	na	501-1000	None	na	Blow spout
24-Jul-16	0100Z	SOCAL	dolphin	69	VIS	Non-ASW ship	6	2	10	na	200-500	None	na	Jumping
24-Jul-16	0200Z	HRC	dolphin	2	VIS	Foreign ship	2	3	10	N	<200	None	na	Close to bow
24-Jul-16	1507Z	SOCAL	dolphin	20	VIS	Non-ASW ship	5	2	10	na	501-1000	None	na	Paralleling ship
24-Jul-16	1700Z	HRC	dolphin	6	VIS	Foreign ship	2	3	10	N	<200	None	na	Close to bow
25-Jul-16	0026Z	SOCAL	dolphin	25	VIS	Non-ASW ship	1	1	10	na	1001-2000	None	na	Jumping
25-Jul-16	0130Z	SOCAL	pinniped	2	VIS	Non-ASW ship	3	1	10	na	200-500	None	na	Seal lion feeding
25-Jul-16	0800Z	SOCAL	whale	1	VIS	Non-ASW ship	3	1	10	na	nr	None	na	Blowing
25-Jul-16	1630Z	SOCAL	whale	1	VIS	Non-ASW ship	5	1	10	na	200-500	None	na	Blowing
25-Jul-16	1650Z	SOCAL	pinniped	1	VIS	Non-ASW ship	nr	nr	nr	na	200-500	None	na	Seal
25-Jul-16	1746Z	SOCAL	dolphin	3	VIS	Non-ASW ship	nr	nr	nr	na	>2000	None	na	None
25-Jul-16	1857Z	HRC	turtle	1	VIS	Foreign ship	1	2	10	N	<200	None	na	Floating
25-Jul-16	1950Z	SOCAL	dolphin	7	VIS	Non-ASW ship	nr	nr	nr	na	>2000	None	na	None
25-Jul-16	2058Z	SOCAL	pinniped	1	VIS	Non-ASW ship	nr	nr	nr	na	<200	None	na	Seal
26-Jul-16	0548Z	SOCAL	dolphin	10	VIS	Non-ASW ship	nr	nr	nr	na	<200	None	na	None

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27-Jul-16	0638Z	SOCAL	dolphin	36	VIS	Non-ASW ship	10	1	10	na	1001-2000	None	na	None
27-Jul-16	1650Z	SOCAL	whale	1	VIS	Non-ASW ship	3	2	10	na	200-500	Maneuvered away	na	None
27-Jul-16	1700Z	SOCAL	whale	2	VIS	Non-ASW ship	nr	1	10	na	1001-2000	None	na	Blow spout
27-Jul-16	1709Z	SOCAL	whale	2	VIS	Non-ASW ship	2	1	10	na	200-500	None	na	Blow spout
27-Jul-16	2043Z	SOCAL	dolphin	30	VIS	Non-ASW ship	2	3	10	na	>2000	None	na	Jumping
28-Jul-16	0520Z	HRC	whale	2	VIS	Foreign ship	5	2	7	N	200-500	Maneuvered away	na	Transit swimming
28-Jul-16	1615Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	10	na	1001-2000	Maneuvered away	na	Blow spout
28-Jul-16	1903Z	SOCAL	dolphin	30	VIS	Non-ASW ship	1	1	10	na	1001-2000	None	na	Jumping
29-Jul-16	0230Z	SOCAL	whale	1	VIS	Non-ASW ship	1	1	10	na	200-500	None	na	Blowing/dive
29-Jul-16	0417Z	HRC	whale	2	VIS	DDG	1	4	10	N	200-500	None	na	Diving
29-Jul-16	1720Z	HRC	whale	1	VIS	Foreign ship	1	2	10	N	<200	Maneuvered away	na	Surfaced
29-Jul-16	2300Z	HRC	dolphin	5	ACO	Helio	5	2	10	N	200-500	None	na	Closing to bow ride
30-Jul-16	2055Z	HRC	dolphin	1	VIS	DDG	1	3	10	N	<200	None	na	None

nr=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-6. HSTT MTE – Individual Marine Mammal Sighting Information: C2X 12 Aug - 25 Aug 2016.

Date/time/location of sighting	Species	Number of individuals	Initial detection sensor	Indication of specific type of platform the observation was made from	Length of time observers maintained visual contact with marine mammal(s) (min)	Sea state (Beaufort scale)	Visibility (nm)	Sound source in use at time of sighting (Y/N)	Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source	Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed	If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal’s motion relative to ship	Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present
12-Aug-16 2128Z	SOCAL dolphin	10	VIS	Non-ASW ship	2	1	10	na	<200	None	na	Bow riding
12-Aug-16 2135Z	SOCAL dolphin	60	VIS	Non-ASW ship	21	1	10	na	200-500	None	na	Feeding, fin slapping
12-Aug-16 1400Z	SOCAL dolphin	4	VIS	Non-ASW ship	2	1	10	na	200-500	None	na	Paralleling ship
12-Aug-16 1405Z	SOCAL dolphin	30	VIS	Non-ASW ship	4	1	10	na	200-500	None	na	Paralleling ship
12-Aug-16 2143Z	SOCAL dolphin	15	VIS	Non-ASW ship	12	1	10	na	200-500	None	na	Feeding, fin slapping
13-Aug-16 2003Z	SOCAL whale	1	VIS	Non-ASW ship	nr	2	7	na	200-500	None	na	Blow
13-Aug-16 2010Z	SOCAL dolphin	75	VIS	DDG	20	3	10	N	501-1000	Maneuvered away	na	Transiting
13-Aug-16 1300Z	SOCAL whale	1	VIS	Non-ASW ship	10	1	10	na	1001-2000	None	na	Spout observed
13-Aug-16 1951Z	SOCAL whale	1	VIS	Non-ASW ship	5	2	7	na	1001-2000	Maneuvered away	na	Blow
13-Aug-16 1407Z	SOCAL whale	1	VIS	Non-ASW ship	2	2	10	na	>2000	Maneuvered away	na	Blow
13-Aug-16 1900Z	SOCAL dolphin	7	VIS	Non-ASW ship	1	1	10	na	>2000	None	na	None
13-Aug-16 0002Z	SOCAL whale	1	VIS	Non-ASW ship	15	2	10	na	>2000	Maneuvered away	na	Blow
14-Aug-16 1845Z	SOCAL whale	1	VIS	Non-ASW ship	2	1	10	na	200-500	None	na	Paralleling, blowing
14-Aug-16 1833Z	SOCAL whale	1	VIS	Non-ASW ship	1	1	10	na	501-1000	None	na	Paralleling, blowing
14-Aug-16 1221Z	SOCAL whale	1	VIS	Non-ASW ship	5	1	10	na	501-1000	None	na	Blowing
14-Aug-16 1952Z	SOCAL whale	2	VIS	Non-ASW ship	10	1	10	na	501-1000	None	na	Blowing
14-Aug-16 2148Z	SOCAL dolphin	10	VIS	Non-ASW ship	10	1	10	na	1001-2000	None	na	None

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14-Aug-16	1745Z	SOCAL	dolphin	80	VIS	DDG	22	2	10	N	1001-2000	None	na	Transiting
14-Aug-16	1742Z	SOCAL	dolphin	10	VIS	Non-ASW ship	30	2	10	na	1001-2000	Maneuvered away	na	Blow
14-Aug-16	2018Z	SOCAL	dolphin	10	VIS	Non-ASW ship	1	1	10	na	>2000	None	na	None
16-Aug-16	1843Z	SOCAL	whale	1	VIS	Non-ASW ship	5	1	10	na	<200	None	na	Observed Gray Whale at surface for 5 min
16-Aug-16	2012Z	SOCAL	whale	1	VIS	DDG	4	3	10	N	501-1000	Maneuvered away	na	Transiting- crossing ships course
16-Aug-16	0131Z	SOCAL	whale	1	VIS	DDG	4	2	10	N	501-1000	None	na	Blow hole spout headed outbound
16-Aug-16	1810Z	SOCAL	whale	1	VIS	Non-ASW ship	6	2	8	na	1001-2000	None	na	Blowing (MV NAUTILUS conducting research and tagging whale)
16-Aug-16	1411Z	SOCAL	whale	1	VIS	Non-ASW ship	5	1	10	na	1001-2000	None	na	One spout
17-Aug-16	1435Z	SOCAL	whale	1	VIS	Non-ASW ship	5	2	8	na	501-1000	None	na	Blowing
17-Aug-16	2130Z	SOCAL	whale	1	VIS	DDG	3	1	10	N	1001-2000	None	na	Whale spout moving port to starboard
17-Aug-16	2040Z	SOCAL	whale	1	VIS	DDG	2	1	10	N	>2000	None	na	Whale spout off starboard quarter
17-Aug-16	1734Z	SOCAL	dolphin	10	VIS	Non-ASW ship	2	2	3	na	>2000	None	na	Swam to port
17-Aug-16	1604Z	SOCAL	whale	1	VIS	DDG	2	2	10	N	>2000	None	na	Transiting
18-Aug-16	1400Z	SOCAL	whale	2	VIS	Non-ASW ship	10	2	10	na	200-500	Maneuvered away	na	Blow
18-Aug-16	1715Z	SOCAL	whale	1	VIS	Non-ASW ship	4	2	8	na	200-500	None	na	Blowing
18-Aug-16	1615Z	SOCAL	whale	1	VIS	Non-ASW ship	4	2	8	na	200-500	None	na	Blowing
18-Aug-16	1750Z	SOCAL	whale	1	VIS	Non-ASW ship	5	2	8	na	200-500	None	na	Blowing
18-Aug-16	1600Z	SOCAL	whale	1	VIS	Non-ASW ship	6	2	8	na	501-1000	None	na	Blowing
18-Aug-16	2100Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	10	na	501-1000	Maneuvered away	na	None
18-Aug-16	2345Z	SOCAL	whale	2	VIS	Non-ASW ship	5	1	10	na	501-1000	Maneuvered away	na	None
18-Aug-16	2034Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	8	na	501-1000	None	na	Blowing
18-Aug-16	1731Z	SOCAL	whale	1	VIS	Non-ASW ship	1	2	10	na	1001-2000	None	na	Blow
18-Aug-16	1720Z	SOCAL	whale	1	VIS	Non-ASW ship	nr	nr	10	na	1001-2000	None	na	None
18-Aug-16	1625Z	SOCAL	whale	2	VIS	Non-ASW ship	nr	nr	10	na	1001-2000	None	na	Surfacing during RAS
18-Aug-16	1950Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	8	na	1001-2000	None	na	Blowing
18-Aug-16	1940Z	SOCAL	whale	1	VIS	Non-ASW ship	3	2	8	na	1001-2000	None	na	Blowing

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18-Aug-16	2035Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	8	na	1001-2000	None	na	Blowing
18-Aug-16	2052Z	SOCAL	whale	1	VIS	Non-ASW ship	5	2	8	na	1001-2000	None	na	Blowing
18-Aug-16	1825Z	SOCAL	whale	1	VIS	DDG	5	2	10	N	>2000	None	na	Transiting
18-Aug-16	2040Z	SOCAL	whale	2	VIS	DDG	5	3	10	N	>2000	Maneuvered away	na	Transiting - crossing ship's course
18-Aug-16	2008Z	SOCAL	whale	1	VIS	Non-ASW ship	3	2	8	na	>2000	None	na	Blowing
18-Aug-16	2028Z	SOCAL	whale	1	VIS	Non-ASW ship	3	2	8	na	>2000	None	na	Blowing
18-Aug-16	1815Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	3	na	>2000	None	na	Blow
18-Aug-16	1958Z	SOCAL	whale	1	VIS	Non-ASW ship	8	2	8	na	>2000	None	na	Blowing
18-Aug-16	1631Z	SOCAL	whale	1	VIS	DDG	3	2	10	N	>2000	None	na	Whale spout off starboard bow during RAS
18-Aug-16	2130Z	SOCAL	whale	1	VIS	Non-ASW ship	1	2	10	na	>2000	None	na	Blow
19-Aug-16	0915	SOCAL	whale	1	VIS	DDG	10	1	10	N	200-500	None	na	Transiting past stern
19-Aug-16	0145Z	SOCAL	whale	1	VIS	Non-ASW ship	2	1	10	na	501-1000	None	na	None
19-Aug-16	1700Z	SOCAL	whale	1	VIS	Non-ASW ship	6	2	10	na	501-1000	None	na	Blowing
19-Aug-16	2000Z	SOCAL	whale	1	VIS	DDG	4	1	10	N	501-1000	None	na	Full breach off starboard, headed outbound
19-Aug-16	1138Z	SOCAL	whale	1	VIS	DDG	2	1	10	N	1001-2000	None	na	Tail slapping
20-Aug-16	0029Z	SOCAL	dolphin	50	VIS	Non-ASW ship	5	1	10	na	<200	None	na	Bow riding
20-Aug-16	1520Z	SOCAL	whale	1	VIS	Non-ASW ship	3	1	10	na	>2000	None	na	None
21-Aug-16	1531Z	SOCAL	dolphin	30	VIS	Non-ASW ship	2	1	10	na	200-500	None	na	Bow riding
21-Aug-16	1718Z	SOCAL	dolphin	100	VIS	Non-ASW ship	10	2	10	na	501-1000	None	na	Travelling forward to aft
21-Aug-16	1924Z	SOCAL	dolphin	50	VIS	Non-ASW ship	10	2	10	na	501-1000	None	na	Travelling forward to aft
22-Aug-16	2135Z	SOCAL	whale	1	VIS	Non-ASW ship	1	2	10	na	501-1000	None	na	None
22-Aug-16	2020Z	SOCAL	whale	1	VIS	DDG	4	2	10	N	501-1000	Maneuvered away	na	Blow hole off starboard bow turned port
22-Aug-16	2300Z	SOCAL	whale	2	VIS	Heilo	15	2	10	Y	501-1000	Shut down sonar	na	Multiple whales spotted while dipping
22-Aug-16	1942Z	SOCAL	whale	1	VIS	Non-ASW ship	5	2	10	na	1001-2000	None	na	None
22-Aug-16	2100Z	SOCAL	whale	1	VIS	DDG	3	2	10	Y	1001-2000	Shut down sonar	Whale bearing 336R, closing ship	Multiple whale spouts sighted off port bow
22-Aug-16	1754Z	SOCAL	whale	2	VIS	DDG	10	2	10	N	>2000	None	na	Two whales off port bow with left drift
22-Aug-16	2050Z	SOCAL	whale	1	VIS	DDG	3	2	10	N	>2000	None	na	Aft look out reports spouts 180 relative

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23-Aug-16	1710Z	SOCAL	whale	1	VIS	Non-ASW ship	3	1	10	na	200-500	Maneuvered away	na	None
23-Aug-16	1758Z	SOCAL	whale	1	VIS	DDG	15	2	10	N	200-500	None	na	Whale spout sighted off starboard bow, whale paralleled course then submerged
23-Aug-16	1823Z	SOCAL	whale	1	VIS	DDG	5	2	10	N	200-500	Maneuvered away	na	Whale spotted crossing bow, ordered a right full rudder
23-Aug-16	1844Z	SOCAL	whale	1	VIS	Non-ASW ship	2	2	10	na	1001-2000	Maneuvered away	na	Dove

ni=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-7. HSTT MTE – Individual Marine Mammal Sighting Information: C2X 24 Oct - 9 Nov 2016.

Date/time/location of sighting	Species	Number of individuals	Initial detection sensor	Indication of specific type of platform the observation was made from	Length of time observers maintained visual contact with marine mammal(s) (min)	Sea state (Beaufort scale)	Visibility (nm)	Sound source in use at time of sighting (Y/N)	Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source	Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed	If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal's motion relative to ship	Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present		
31-Oct-16	1811Z	SOCAL	pinniped	1	VIS	DDG	3	2	10	N	<200	Delayed active sonar	na	Seal swimming
31-Oct-16	2335Z	SOCAL	dolphin	6	VIS	CG	5	3	10	N	<200	None	na	Paralleling
31-Oct-16	1822Z	SOCAL	dolphin	4	VIS	DDG	1	3	10	N	<200	None	na	None
31-Oct-16	2143Z	SOCAL	generic	1	VIS	DDG	1	3	10	N	<200	None	na	Swimming
31-Oct-16	2200Z	SOCAL	dolphin	10	VIS	DDG	2	2	10	N	501-1000	None	na	Swimming
31-Oct-16	2155Z	SOCAL	whale	4	VIS	DDG	5	2	10	N	501-1000	None	na	Swimming
31-Oct-16	1511Z	SOCAL	whale	1	VIS	DDG	3	1	10	N	501-1000	None	na	Breaching
31-Oct-16	2052Z	SOCAL	whale	1	VIS	Non-ASW ship	5	4	10	na	501-1000	None	na	Swimming
31-Oct-16	2115Z	SOCAL	whale	1	VIS	DDG	2	3	10	N	>2000	None	na	Surfacing
31-Oct-16	1808Z	SOCAL	whale	1	VIS	CG	5	2	10	N	>2000	None	na	None
31-Oct-16	0530Z	SOCAL	dolphin	1	ACO	DDG	10	4	6	N	nr	None	na	Dolphins detected on UWT
1-Nov-16	0000Z	SOCAL	dolphin	30	VIS	DDG	5	1	10	N	200-500	None	na	Bow riding
1-Nov-16	0815Z	SOCAL	whale	2	VIS	DDG	1	4	10	N	200-500	None	na	Surfacing
1-Nov-16	0000Z	SOCAL	dolphin	6	VIS	DDG	8	1	10	N	200-500	None	na	None
1-Nov-16	2101Z	SOCAL	whale	1	VIS	DDG	1	3	10	N	501-1000	None	na	Surfacing
1-Nov-16	2226Z	SOCAL	pinniped	1	VIS	Non-ASW ship	3	4	10	na	501-1000	None	na	Dead sea lion, floating, bloated, discolored
1-Nov-16	0000Z	SOCAL	dolphin	50	VIS	DDG	4	1	10	N	501-1000	None	na	None

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1-Nov-16	0000Z	SOCAL	whale	3	VIS	DDG	10	1	10	N	1001-2000	None	na	Blowing
1-Nov-16	0000Z	SOCAL	dolphin	20	VIS	DDG	10	1	10	N	1001-2000	None	na	None
1-Nov-16	0000Z	SOCAL	whale	1	VIS	DDG	5	1	10	N	>2000	None	na	Blowing
1-Nov-16	0000Z	SOCAL	whale	4	VIS	DDG	4	1	10	N	>2000	None	na	None
1-Nov-16	1937Z	SOCAL	whale	1	VIS	DDG	1	3	10	N	>2000	None	na	Surfacing
1-Nov-16	0000Z	SOCAL	dolphin	30	VIS	DDG	6	1	10	N	>2000	None	na	None
1-Nov-16	0528Z	SOCAL	dolphin	1	ACO	DDG	10	6	10	N	nr	None	na	None
1-Nov-16	0651Z	SOCAL	dolphin	1	ACO	DDG	15	4	10	N	nr	None	na	Biologics detected bearing 343 and on UWT
1-Nov-16	1211Z	SOCAL	dolphin	1	ACO	DDG	5	4	10	N	nr	None	na	Biologics detected over UWT and ASFS bearing 301
1-Nov-16	1758Z	SOCAL	dolphin	1	ACO	DDG	5	4	10	N	nr	None	na	Biologics detected over UWT
1-Nov-16	2122Z	SOCAL	dolphin	1	ACO	DDG	25	4	10	N	nr	None	na	Biologics detected on UWT
2-Nov-16	1024Z	SOCAL	dolphin	4	VIS	DDG	5	2	10	N	<200	None	na	None
2-Nov-16	1921Z	SOCAL	dolphin	50	VIS	DDG	10	2	10	N	200-500	None	na	None
2-Nov-16	2117Z	SOCAL	whale	1	VIS	CG	2	1	10	N	200-500	Maneuvered away	na	Swimming
2-Nov-16	2125Z	SOCAL	dolphin	10	VIS	DDG	5	2	10	N	200-500	None	na	None
2-Nov-16	0718Z	SOCAL	dolphin	20	VIS	DDG	1	2	10	N	501-1000	None	na	None
2-Nov-16	1508Z	SOCAL	dolphin	10	VIS	Non-ASW ship	2	4	10	na	501-1000	None	na	Breaching
2-Nov-16	1447Z	SOCAL	whale	1	VIS	DDG	1	2	10	N	1001-2000	None	na	None
2-Nov-16	1721Z	SOCAL	whale	2	VIS	Non-ASW ship	6	4	10	na	1001-2000	None	na	Breaching
2-Nov-16	1448Z	SOCAL	dolphin	16	VIS	Non-ASW ship	5	4	10	na	1001-2000	None	na	Breaching
2-Nov-16	1635Z	SOCAL	whale	4	VIS	DDG	2	2	10	N	>2000	None	na	None
2-Nov-16	1637Z	SOCAL	dolphin	1	VIS	Non-ASW ship	1	4	10	na	>2000	None	na	Breaching
2-Nov-16	0434Z	SOCAL	dolphin	1	ACO	DDG	30	4	1	N	nr	None	na	Biologics heard over UWT and seen on PBB bearing 331
2-Nov-16	0604Z	SOCAL	dolphin	1	ACO	DDG	96	nr	nr	N	nr	None	na	Biologics heard over UWT and seen on PBB bearing 216
2-Nov-16	1622Z	SOCAL	whale	1	VIS	DDG	10	4	10	N	nr	None	na	Whale sighted on OSS bearing 086
2-Nov-16	1702Z	SOCAL	dolphin	1	ACO	DDG	20	4	10	N	nr	None	na	Biologics detected on UWT

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3-Nov-16	2203Z	SOCAL	whale	1	VIS	DDG	2	1	10	N	200-500	Maneuvered away	na	Frolicking
3-Nov-16	1431Z	SOCAL	dolphin	15	VIS	DDG	4	1	10	N	200-500	None	na	Bow riding
3-Nov-16	2120Z	SOCAL	whale	1	VIS	DDG	1	1	10	N	501-1000	None	na	Breaching
3-Nov-16	1418Z	SOCAL	whale	1	VIS	CG	3	1	10	N	1001-2000	None	na	Blowing
3-Nov-16	0036Z	SOCAL	whale	2	VIS	DDG	2	1	10	N	>2000	Maneuvered away	na	Blowing water
3-Nov-16	1753Z	SOCAL	whale	1	VIS	Non-ASW ship		4	9	na	>2000	None	na	Breaching
4-Nov-16	1815Z	SOCAL	dolphin	5	VIS	DDG	1	1	10	N	<200	None	na	Jumping
4-Nov-16	1755Z	SOCAL	whale	2	VIS	Non-ASW ship	1	7	10	na	200-500	None	na	Breaching
4-Nov-16	1709Z	SOCAL	dolphin	40	VIS	DDG	5	1	10	N	501-1000	None	na	Bow riding
4-Nov-16	1817Z	SOCAL	dolphin	100	VIS	Non-ASW ship	1	7	10	na	501-1000	None	na	Breaching
4-Nov-16	1710Z	SOCAL	dolphin	25	VIS	Non-ASW ship	2	7	10	na	1001-2000	None	na	Breaching
4-Nov-16	1920Z	SOCAL	whale	1	VIS	Non-ASW ship	1	4	10	na	1001-2000	None	na	Breaching
4-Nov-16	1437Z	SOCAL	whale	1	VIS	Non-ASW ship	1	7	10	na	1001-2000	None	na	Breaching
4-Nov-16	1615Z	SOCAL	whale	2	VIS	DDG	10	3	10	N	>2000	None	na	Swimming and jumping completely out of the water
4-Nov-16	2220Z	SOCAL	dolphin	100	VIS	DDG	8	1	10	N	>2000	None	na	Bow riding
4-Nov-16	2020Z	SOCAL	whale	2	VIS	DDG	2	2	10	N	>2000	None	na	Breaching
4-Nov-16	2005Z	SOCAL	whale	1	VIS	Non-ASW ship	1	4	10	na	>2000	None	na	Breaching
4-Nov-16	2224Z	SOCAL	whale	1	VIS	Non-ASW ship	3	5	10	na	>2000	None	na	Breaching
5-Nov-16	1909Z	SOCAL	whale	1	VIS	DDG	5	4	10	N	<200	None	na	One whale was spotted on the starboard side swimming and opening ship. The whale then showed tail and was not seen again
5-Nov-16	1706Z	SOCAL	dolphin	50	VIS	Non-ASW ship	3	5	10	na	501-1000	None	na	Breaching
5-Nov-16	1448Z	SOCAL	dolphin	50	VIS	Non-ASW ship	3	5	10	na	1001-2000	None	na	Breaching
5-Nov-16	1825Z	SOCAL	whale	1	VIS	DDG	10	4	10	Y	1001-2000	Shut down sonar	Whale bearing 010R, closing ship	One whale spotted swimming, moving port to starboard and closing ship
5-Nov-16	1856Z	SOCAL	whale	1	VIS	DDG	5	4	10	Y	1001-2000	Powered down sonar	Whale bearing 122R, paralleling ship	One whale spotted swimming parallel to ship, then showed tail and was not seen again

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5-Nov-16	1955Z	SOCAL	whale	1	VIS	DDG	3	2	10	N	1001-2000	None	na	Swimming
5-Nov-16	1153Z	SOCAL	dolphin	1	ACO	DDG	78	4	10	N	nr	None	na	Biologists detected on UWT and ASFS bearing 075
7-Nov-16	1843Z	SOCAL	whale	1	VIS	DDG	4	2	10	Y	200-500	Shut down sonar	Whale bearing 332R, paralleling ship	Blowing
8-Nov-16	2054Z	SOCAL	whale	1	VIS	CG	1	1	10	N	501-1000	Maneuvered away	na	Tail/fm slapping, blowing
8-Nov-16	1125Z	SOCAL	whale	2	VIS	Non-ASW ship	2	2	10	na	1001-2000	None	na	Tail slapping
8-Nov-16	1223Z	SOCAL	dolphin	12	VIS	DDG	5	1	10	Y	1001-2000	Shut down sonar	Dolphins bearing 011R, closing ship	Breaching
8-Nov-16	1623Z	SOCAL	whale	1	VIS	DDG	5	2	10	N	1001-2000	None	na	Swimming
8-Nov-16	2018Z	SOCAL	dolphin	100	VIS	DDG	20	3	10	N	>2000	None	na	Frolicking, feeding,
8-Nov-16	2006Z	SOCAL	whale	1	VIS	Non-ASW ship	1	2	10	na	nr	None	na	Normal swimming
8-Nov-16	2018Z	SOCAL	dolphin	150	VIS	DDG	15	nr	nr	Y	nr	Shut down sonar	Dolphins bearing 010R, relative motion nr	Bridge spots pod of dolphins
9-Nov-16	2213Z	SOCAL	dolphin	5	VIS	CG	3	3	10	N	<200	Maneuvered away	na	Paralleling
9-Nov-16	1910Z	SOCAL	dolphin	30	VIS	DDG	5	2	10	N	200-500	None	na	Swimming
9-Nov-16	1343Z	SOCAL	dolphin	2	VIS	DDG	10	2	10	N	501-1000	None	na	Breaching
9-Nov-16	1120Z	SOCAL	dolphin	5	VIS	DDG	7	2	10	N	>2000	None	na	Breaching
9-Nov-16	1918Z	SOCAL	dolphin	2	VIS	DDG	nr	nr	nr	Y	nr	Shut down sonar	Dolphins bearing nr, relative motion nr	Bridge spots pod of dolphins
9-Nov-16	2324Z	SOCAL	generic	1	VIS	DDG	nr	nr	nr	Y	nr	Shut down sonar	Dolphins bearing nr, relative motion nr	Marine life port side

nr=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-8. HSTT MTE – Individual Marine Mammal Sighting Information: IAC 24 Oct - 30 Oct 2016.

Date/time/location of sighting	Species	Number of individuals	Initial detection sensor	Indication of specific type of platform the observation was made from	Length of time observers maintained visual contact with marine mammal(s) (min)	Sea state (Beaufort scale)	Visibility (nm)	Sound source in use at time of sighting (Y/N)	Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source	Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed	If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal’s motion relative to ship	Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present
24-Oct-16	dolphin	6	VIS	Non-ASW ship	1	2	10	na	<200	None	na	Swimming/jumping
25-Oct-16	dolphin	6	VIS	Non-ASW ship	nr	3	10	na	<200	None	na	Playful/joyful
25-Oct-16	dolphin	5	VIS	DDG	5	nr	nr	N	501-1000	None	na	None
25-Oct-16	pinniped	1	VIS	DDG	1	2	8	N	501-1000	None	na	Seal surfacing
25-Oct-16	dolphin	2	VIS	DDG	3	2	10	N	>2000	None	na	None
25-Oct-16	whale	1	VIS	DDG	5	2	10	N	>2000	None	na	Breaching
25-Oct-16	whale	1	VIS	DDG	2	2	10	N	>2000	None	na	Breaching
25-Oct-16	whale	1	VIS	DDG	3	2	10	N	>2000	Maneuvered away	na	None
25-Oct-16	dolphin	3	ACO	DDG	1	nr	nr	Y	nr	None	Dolphin bearing nr, relative motion nr	None
26-Oct-16	dolphin	10	VIS	DDG	1	2	10	N	<200	Maneuvered away	na	None
26-Oct-16	pinniped	10	VIS	DDG	1	2	10	N	<200	None	na	Sea lions
26-Oct-16	dolphin	2	VIS	DDG	3	2	10	N	>2000	None	na	None
26-Oct-16	whale	2	VIS	Non-ASW ship	1	4	10	na	>2000	None	na	Breaching
26-Oct-16	dolphin	1	ACO	DDG	10	4	10	Y	nr	None	Dolphin bearing nr, relative motion nr	MM heard over UVT for 10 minutes
26-Oct-16	whale	1	VIS	Non-ASW ship	1	4	10	na	nr	None	na	Breaching
27-Oct-16	whale	1	VIS	DDG	1	nr	nr	Y	200-500	Powered down sonar	Whale bearing 094R, opening ship	Mammal surfaced for a few seconds and then disappeared
27-Oct-16	whale	1	VIS	DDG	5	2	10	N	<200	Maneuvered away	na	Whale continued course

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27-Oct-16	164ZZ	SOCAL	dolphin	20	VIS	DDG	2	2	10	N	<200	None	na	Pod continued course
27-Oct-16	172ZZ	SOCAL	dolphin	100	VIS	DDG	10	1	10	N	200-500	None	na	Pod rode wake as ship passed
27-Oct-16	0100Z	SOCAL	dolphin	10	VIS	DDG	2	2	9	N	200-500	None	na	None
27-Oct-16	0100Z	SOCAL	dolphin	10	VIS	DDG	2	2	9	N	200-500	None	na	None
27-Oct-16	0035Z	SOCAL	dolphin	6	VIS	Non-ASW ship	2	1	10	na	200-500	None	na	Breaching
27-Oct-16	1700Z	SOCAL	whale	1	VIS	DDG	2	1	10	N	200-500	None	na	Whale continued course
27-Oct-16	2135Z	SOCAL	dolphin	100	VIS	Non-ASW ship	10	3	10	na	1001-2000	None	na	Breaching
27-Oct-16	1930Z	SOCAL	whale	1	VIS	Non-ASW ship	1	3	10	na	>2000	None	na	Breaching
27-Oct-16	0440Z	SOCAL	dolphin	2	ACO	DDG	1	2	10	N	nr	None	na	None
29-Oct-16	2139Z	SOCAL	dolphin	10	ACO	DDG	7	2	10	N	501-1000	Maneuvered away	na	None
29-Oct-16	2204Z	SOCAL	dolphin	50	VIS	DDG	15	2	10	N	501-1000	Maneuvered away	na	None
29-Oct-16	1542Z	SOCAL	dolphin	3	VIS	DDG	1	2	10	N	>2000	None	na	None
30-Oct-16	1417Z	SOCAL	dolphin	90	VIS	CG	7	1	10	N	<200	None	na	Closing to bow ride, opening, playing
30-Oct-16	2120Z	SOCAL	dolphin	10	VIS	DDG	1	1	10	N	<200	Maneuvered away	na	None
30-Oct-16	1713Z	SOCAL	dolphin	30	VIS	DDG	7	1	4	N	200-500	None	na	Bow riding
30-Oct-16	1807Z	SOCAL	whale	1	VIS	DDG	4	1	5	N	501-1000	Maneuvered away	na	Fluking
30-Oct-16	0234Z	SOCAL	dolphin	7	VIS	DDG	5	1	10	N	501-1000	None	na	Jumping/breaching
30-Oct-16	2250Z	SOCAL	dolphin	20	VIS	Non-ASW ship	5	4	10	na	501-1000	None	na	Jumping
30-Oct-16	1722Z	SOCAL	whale	1	VIS	DDG	3	1	4	N	>2000	Delayed active sonar	na	Blowing
30-Oct-16	2342Z	SOCAL	dolphin	45	VIS	Non-ASW ship	10	4	10	na	>2000	None	na	Jumping
30-Oct-16	1757Z	SOCAL	whale	1	VIS	DDG	2	1	3	N	>2000	None	na	Blowing
30-Oct-16	2041Z	SOCAL	dolphin	20	VIS	Non-ASW ship	4	4	10	na	>2000	None	na	Jumping
30-Oct-16	1646Z	SOCAL	whale	1	VIS	DDG	10	1	3	N	>2000	None	na	Breaching
30-Oct-16	1221Z	SOCAL	dolphin	1	ACO	DDG	20	4	10	N	nr	None	na	Biologics detected on UWT
30-Oct-16	1338Z	SOCAL	dolphin	1	ACO	DDG	30	4	10	N	nr	None	na	Biologics detected on UWT
30-Oct-16	1413Z	SOCAL	dolphin	1	ACO	DDG	5	4	10	N	nr	None	na	Biologics detected on UWT

nr=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

Table 1-ii-9. HSTT MTE – Individual Marine Mammal Sighting Information: JTFEX 10 Nov - 21 Nov 2016.

Date/time/location of sighting	Species	Number of individuals	Initial detection sensor	Indication of specific type of platform the observation was made from	Length of time observers maintained visual contact with marine mammal(s) (min)	Sea state (Beaufort scale)	Visibility (nm)	Sound source in use at time of sighting (Y/N)	Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000 yd from sound source	Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was; or whether navigation was changed or delayed	If source in use is a hull-mounted sonar, relative bearing of animal from ship and estimation of animal's motion relative to ship	Observed behavior – Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animal(s), and if any calves are present
10-Nov-16 0638Z	dolphin	100	VIS	Non-ASW ship	1	3	10	na	501-1000	None	na	Jumping
10-Nov-16 0759Z	dolphin	100	VIS	Non-ASW ship	3	3	10	na	1001-2000	None	na	Jumping
10-Nov-16 2220Z	dolphin	25	VIS	DDG	17	2	10	N	1001-2000	None	na	Jumping
11-Nov-16 1729Z	dolphin	7	VIS	DDG	5	2	10	Y	200-500	Powered down sonar	Dolphin bearing 260R, opening ship	Swimming
11-Nov-16 1543Z	pinniped	1	VIS	DDG	5	2	10	N	200-500	None	na	Sea lion swimming
11-Nov-16 1504Z	dolphin	8	VIS	DDG	5	2	10	N	501-1000	None	na	Swimming
11-Nov-16 1739Z	whale	1	VIS	DDG	1	2	10	Y	1001-2000	Shut down sonar	Whale bearing 211R, closing ship	Blowing/breaching
11-Nov-16 1627Z	dolphin	2	VIS	DDG	5	2	10	N	1001-2000	None	na	Swimming
11-Nov-16 1823Z	whale	1	VIS	DDG	1	2	10	Y	1001-2000	Maneuvered away	Whale bearing 230R, opening ship	Breaching
11-Nov-16 2215Z	dolphin	50	VIS	DDG	3	2	10	N	1001-2000	None	na	Jumping
11-Nov-16 2220Z	dolphin	100	VIS	CG	5	2	10	N	>2000	None	na	Leaping out of water
11-Nov-16 1652Z	dolphin	50	VIS	DDG	5	2	10	N	>2000	None	na	Swimming
11-Nov-16 2310Z	whale	1	VIS	Non-ASW ship	1	4	10	na	>2000	None	na	Breaching
11-Nov-16 2017Z	dolphin	8	VIS	Non-ASW ship	4	4	10	na	nr	None	na	Fin slapping, joyful jumping
11-Nov-16 2035Z	dolphin	1	ACO	DDG	20	4	10	N	nr	None	na	Biologics heard on UWT
12-Nov-16 1040Z	dolphin	7	VIS	DDG	5	2	10	N	<200	None	na	Swimming

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12-Nov-16	0032Z	SOCAL	dolphin	24	VIS	CG	3	3	10	N	<200	None	na	Paralleling
12-Nov-16	1544Z	SOCAL	dolphin	10	VIS	DDG	1	1	10	N	<200	None	na	Jumping
12-Nov-16	2245Z	SOCAL	dolphin	24	VIS	CG	5	3	10	N	<200	None	na	Bow ride
12-Nov-16	0400Z	SOCAL	pinniped	1	VIS	DDG	nr	nr	nr	N	200-500	None	na	Seal spotted jumping in and out of the water
12-Nov-16	1446Z	SOCAL	dolphin	6	VIS	DDG	5	1	6	N	501-1000	None	na	Swimming
12-Nov-16	0712Z	SOCAL	dolphin	5	VIS	Non-ASW ship	1	1	10	na	501-1000	None	na	Breaching
12-Nov-16	0716Z	SOCAL	dolphin	100	VIS	Non-ASW ship	2	1	10	na	501-1000	None	na	Breaching
12-Nov-16	1655Z	SOCAL	dolphin	20	VIS	DDG	nr	nr	nr	N	501-1000	None	na	Dolphins were spotted swimming
12-Nov-16	0953Z	SOCAL	dolphin	5	VIS	DDG	3	2	10	N	>2000	None	na	Swimming
12-Nov-16	1230Z	SOCAL	dolphin	1	ACO	DDG	5	1	10	N	>2000	None	na	Breaching
12-Nov-16	0038Z	SOCAL	dolphin	1	ACO	DDG	20	4	10	N	nr	None	na	Biologies heard over UWT
12-Nov-16	0138Z	SOCAL	dolphin	1	ACO	DDG	20	4	10	N	nr	None	na	Biologies heard over UWT
13-Nov-16	1611Z	SOCAL	dolphin	100	VIS	DDG	10	2	10	Y	>2000	None	Dolphins bearing 030R, closing ship	Swimming
14-Nov-16	1716Z	SOCAL	dolphin	5	VIS	DDG	nr	4	10	Y	200-500	None	Dolphins bearing 330R, closing ship	Dolphins spotted jumping, closed the bow to ride the wake
17-Nov-16	2230Z	SOCAL	whale	2	VIS	Non-ASW ship		1	10	na	200-500	None	na	Swimming
18-Nov-16	1642Z	SOCAL	pinniped	1	VIS	DDG	5	3	10	Y	<200	Shut down sonar	Pinniped bearing 150R, opening ship	Seal relaxing on the water
19-Nov-16	2356Z	SOCAL	dolphin	100	VIS	Non-ASW ship	10	4	10	na	1001-2000	None	na	Jumping
19-Nov-16	1705Z	SOCAL	dolphin	75	VIS	Non-ASW ship	2	4	10	na	>2000	None	na	Breaching
20-Nov-16	1400Z	SOCAL	dolphin	25	VIS	DDG	5	1	10	N	<200	None	na	Jumping
20-Nov-16	1640Z	SOCAL	dolphin	30	VIS	DDG	3	1	10	N	<200	None	na	Jumping
20-Nov-16	2043Z	SOCAL	dolphin	2	VIS	Non-ASW ship	4	2	10	na	200-500	None	na	Jumping
20-Nov-16	2140Z	SOCAL	dolphin	2	VIS	Non-ASW ship	5	2	10	na	200-500	None	na	Jumping
20-Nov-16	2023Z	SOCAL	dolphin	1	VIS	Non-ASW ship	3	2	10	na	200-500	None	na	Jumping
20-Nov-16	1522Z	SOCAL	whale	2	VIS	DDG	5	1	10	N	1001-2000	None	na	Whales were jumping out of the water

nr=not reported; VIS=visual; ACO=acoustic; Y=yes; N=no; na=not applicable

(G) Evaluation (based on data gathered during all exercises) of effectiveness

There were eight major training exercises conducted in the HSTT Study Area this reporting period (see **Table 1-ii-10**). In support of these MTEs, the Navy conducted over 6,170 hours of Marine Species Awareness Training for 5,216 personnel prior to the beginning of these training exercises.

Table 1-ii-10. HSTT Study Area major training exercises.

MTE Type	Dates	# of Exercise Days	# of US Ships Involved (MFAS and non-MFAS)	# of Marine Mammal Sightings	# of Marine Mammals
SUSTEX	19 - 22 Jan 2016	4	**	1	1
USWEX	27 Jan - 1 Feb 2016	6	**	0	0
IAC	26 Feb - 6 Mar 2016	9	**	0	0
RIMPAC	30 Jun - 4 Aug 2016	36	**	109	1,310
C2X	12 - 25 Aug 2016	14	**	74	616
C2X	24 Oct - 9 Nov 2016	17	**	82	1,027
IAC	24 - 30 Oct 2016	7	**	43	596
JTFEX	10 - 21 Nov 2016	12	**	40	1,005
	Total	105	**	349	4,555

HSTT Study Area Major Training Exercise Marine Mammal Observations

There were 349 sightings of an estimated 4,555 marine mammals over the course of eight MTEs in the HSTT Study Area (see **Table 1-ii-10**). Breakdown of sightings by species type are shown in **Table 1-ii-11**.

Table 1-ii-11. Total number of marine mammal sightings observed from Navy platforms during major training exercises.

Species Type	# of Sightings	% of Total Sightings	# of Marine Mammals	% of Total Number of Marine Mammals
Dolphins	173	50%	4,270	94%
Whales	157	45%	255	6%
Pinnipeds	12	3%	22	<1%
Turtles	3	1%	4	<1%
Not recorded	4	1%	4	<1%
Totals:	349		4,555	

Dolphin species in Southern California typically occur in larger pods than whales, hence the higher number of dolphins and larger percentage of total numbers seen in these counts. During this reporting period, dolphin sightings accounted for 50% of all sightings and 94% of all individuals sighted (**Table 1-ii-11**).

HSTT Study Area Major Training Exercise Mitigations

Sonar mitigation – **Table 1-ii-12** shows the number of marine mammal sightings out of the total 349 sightings reported this period (**Table 1-ii-11**) that occurred at ranges less than 1,000 yards and indicates how many sonar mitigations were applied (third column in **Table 1-ii-12**). Other sightings within these ranges were instances when sonar was not in use, therefore sonar mitigation was not conducted (fourth column in **Table 1-ii-12**).

There were also 37 instances of Navy ships maneuvering to avoid marine mammals or avoid crossing the path of marine mammals. Of these 37 maneuvers, 30 were to avoid whales (n= 36 whales) and 7 were to avoid dolphins (n= 170 dolphins).

Table 1-ii-12. Number of marine mammal sightings at ranges less than 1,000 yards observed from Navy platforms during major training exercises concurrent with sonar shutdown mitigation

Ranges	Marine Mammal Type	Sightings within a given range with mitigation (i.e., sonar was on prior to sighting and sonar mitigation was applied)	Sightings within a given range with no mitigation required (i.e., sonar not on so sonar mitigation was not needed)
< 200 yards			
	Whales	0 sightings	7 sightings of 10 whales
	Dolphins	0 sightings	26 sightings of 400 dolphins
	Pinnipeds	1 sighting of 1 pinniped	4 sightings of 13 pinnipeds
	Turtles	0 sightings	2 sightings of 2 turtles
	Generic	0 sightings	1 sighting of 1 animal
200-500 yards			
	Whales	2 sightings of 2 whales	30 sightings of 95 whales
	Dolphins	1 sighting of 7 dolphins	39 sightings of 918 dolphins
	Pinnipeds	0 sightings	5 sightings of 6 pinnipeds
	Turtles	0 sightings	1 sighting of 2 turtles
	Generic	0 sightings	0 sightings
501-1000 yards			
	Whales	1 sighting of 2 whales	29 sightings of 35 whales
	Dolphins	0 sightings	28 sightings of 962 dolphins
	Pinnipeds	0 sightings	2 sightings of 2 pinnipeds
	Turtles	0 sightings	0 sightings
	Generic	0 sightings	0 sightings

SUMMARY: Mitigation Effectiveness and Navy Safety Zone Adherence

During this year’s MTEs in the HSTT Study Area, prescribed NMFS mitigation zones were effectively applied in cases of observation of marine mammals within the applicable zone. Table 1-ii-13 depicts the maximum estimated receive levels at the marine mammal at the time the mitigation measure was applied. In each case the Permanent Threshold Shift (PTS) threshold is higher than the estimated maximum exposure level prior to mitigation which means that the marine mammal was unlikely to experience injury. During this reporting period the proper implementation of mitigation measures for sighted marine mammals are estimated to be highly effective at preventing exposures that may result in injury (e.g. PTS).

The three categories of mitigation measures (Personnel Training, Lookout and Watchstander Responsibility, and Operating Procedures) outlined in the HSTT Final Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) of August 2013 and approved by NMFS in the HSTT Training LOA were effective in appropriately mitigating exposure of marine mammals to sonar. Fleet commanders, aircrews and ship watch teams continue to improve individual awareness and enhance reporting practices. This improvement can be attributed to the various pre-exercise conferences, mandatory Marine Species Awareness Training (including on-line training required for watch standing qualifications) with over 6,170 hours completed this year representing training to 5,216

personnel, adherence to required active sonar mitigation zones, and application of lessons learned in marine mammal sighting and reporting.

Table 1-ii-13. Sightings where sonar was on during detection of marine mammals at ranges less than 1,000 yards, and the mitigation conducted.

1) Location	2) MTE	3) Month	4) Species sighted	5) # of marine mammals sighted	6) Platform	7) Length of time observed (min)	8) Range at which marine mammal sighted	9) Mitigation (Sonar powerdown, Sonar shutdown)	10) Estimate MAX exposure PRIOR to mitigation (dB re 1uPa) ¹	11) Number of minutes sonar mitigation applied	12) Estimate exposure AFTER mitigation (dB re 1uPa) ¹	13) DISTANCE ship would have moved given length of mitigation and nominal 10-knot ship speed (yds)	14) If source in use is hull-mounted sonar, relative bearing of animal from ship and estimation of animal's motion relative to ship	15) Observed behavior
SOCAL	C2X	Aug	whale	2	Helo	15	501-1000	Sonar shutdown	<175-181	120	None	na	na	nr
SOCAL	IAC	Oct	whale	1	DDG	1	200-500	Sonar powerdown	<181-189	2	<171-179	667	Whale bearing 094R, opening ship	Mammal surfaced for a few seconds and then disappeared
SOCAL	C2X	Nov	whale	1	DDG	4	200-500	Sonar shutdown	<181-189	4	None	1,333	Whale bearing 332R, paralleling ship	Blowing
SOCAL	JTFEX	Nov	dolphin	7	DDG	5	200-500	Sonar powerdown	<181-189	5	<171-179	1,667	Dolphins bearing 260R, opening ship	Swimming
SOCAL	JTFEX	Nov	pinniped	1	DDG	5	<200	Sonar shutdown	<189	4	None	1,333	Pinniped bearing 150R, opening ship	Seal relaxing on the water

Notes:

¹ Estimated exposure based on 20L_{og}[R] spherical spreading propagation loss for ranges less than 1,000 yards and where nominal active sonar Source Level (SL) assumed to be 235 dB for DDGs and 225 for FFGs. Actual operating parameters and oceanographic condition likely result in lower exposure. This calculation assumes exposure prior to mitigation. Once animal was spotted at the range indicated, applied mitigation would have resulted in much lower to no exposures.

Exposure Assessment

Estimated exposures within 2,000 yards can be determined based on standard formulas of how sound propagates in water. Spherical spreading is generally valid within 1,000 yards from the sound source, and can be expressed as spreading loss (in dB from a source) equals $20\log R$ (with “R” being range from the source in yards). Spherical spreading loss in the first 1,000 yards equates to 60 dB of loss. At ranges between 1,000 and 2,000 yards the sound waves become trapped by the sea surface and bottom and cannot expand vertically. The spreading wave then forms an expanding cylinder. Cylindrical spreading loss in dB between two points can be calculated by using the formula $(10\log R2/R1)$, with “R2” being the longer range, and “R1” being 1,000 yards. Cylindrical spreading loss between 1,000 and 2,000 yards equates to an additional 3 dB of loss. By the time the wave has propagated to 2,000 yards, the sonar signal strength has decreased by a total of 63 dB. Using the AN/SQS-53 sonar as an example, transmitting at 235 dB and subtracting the 63 dB of spreading loss equates to an estimated sonar Receive Level (RL) of 172 dB at 2000 yards. The spreading loss formulas are used to make very conservative assumptions about potential exposure. The formula is an estimation of spreading losses only and does not take into account other factors that could increase the total propagation losses such as oceanographic conditions, attenuation losses, scattering losses, and Navy-unique MFAS operating parameters which would result in slightly lower sonar transmit levels. Use of this approach to estimate potential RL at any given animal assumes the horizontal range from a visual sighting accounts for an animal across all depths at which an animal travels to predict the maximum, worst case potential exposure. In other words, this estimated worst case exposure is presented independent of the animal’s actual depth level, since a) time and depth of current and previous dives cannot be deduced from a limited surface sighting, and b) oceanographic and tactical conditions influence actual sound propagation at different depths. Given the relative motion of ships and animals at sea, the time spent with any given exposure from surface ships is likely to be limited.

(iii) Exercise Information for Each SINKEX

Two SINKEX events were conducted in the HSTT Study Area during the reporting period, one on 14 July 2016 and one on 19 July 2016. Both events occurred in the Hawaii Range Complex during the Rim of the Pacific Exercise. Specific details of these events are classified and this information has been forwarded to NMFS in the classified version of this report.

Table 1-iii-1. SINKEX information for event on 14 July 2016.

(A) Vessels and aircraft involved
**
(B) Location (operating area)
Hawaii Range Complex
(C) Chronological list of events
**
(D) Visibility/weather
Visibility – 5 NM and greater, scattered showers throughout event Wind – Easterly at 15 KTS Wave height – 7 FT, sea state 2 Cloud Cover – 1,000 to 3,000 FT scattered, no rain
(E) Aircraft surveys
1x C-26; altitude 1,500 FT; speed 270 KTS; 12,000 square miles surveyed 1x P-3C; altitude 11,000 FT; speed 220 KTS; 26,350 square miles surveyed
(F) Passive acoustic monitoring
P-3 laid 17-buoy pattern in support of MK-48 firing
(G) Individual marine mammal sighting information
No marine mammals were reported during the event

(H) Ordnance used and net explosive weight (NEW)
3x AGM-65 (300 lb NEW) 3x AGM-114 (20 lb NEW) 2x GBU-12 (192 lb NEW) 2x GBU-16 (445 lb NEW) 4x Harpoon (488 lb NEW) 1x MK-48 (650 lb NEW) 2x MK-84 (945 lb NEW) 800x .50 caliber (non-explosive)

Table 1-iii-2. SINKEX information for event on 19 July 2016.

(A) Vessels and aircraft involved
**
(B) Location (operating area)
Hawaii Range Complex
(C) Chronological list of events
**
(D) Visibility/weather
Visibility – 5 NM in haze Wind – South-easterly at 20 KTS Wave height – 6 FT, sea state 2 Cloud Cover – 6,000 to 8,000 FT, no rain
(E) Aircraft surveys
1x C-26; altitude 1,500 FT; speed 270 KTS; 12,000 square miles surveyed 1x P-3C; altitude 11,000 FT; speed 220 KTS; 26,350 square miles surveyed
(F) Passive acoustic monitoring
No buoys deployed
(G) Individual marine mammal sighting information
No marine mammals were reported during the event
(H) Ordnance used and net explosive weight (NEW)
2x AGM-65 (300 lb NEW) 12x AGM-114 (20 lb NEW) 4x Harpoon (488 lb NEW) 6x MK-84 (945 lb NEW) 3x RIM-7 Sea Sparrow (86 lb NEW)

(2) HSTT – Summary of Sources Used

(i) Total annual usage of each type of sound source

The total annual and cumulative amounts of sonar use are classified and were forwarded to NMFS in the classified version of this report. All authorized sound sources are within the cumulative limits authorized by NMFS.

Table 2-i-1. Training sound source usage within the HSTT Study Area by source bin.

Authorized sound sources 50 CFR §218.70 (c) and NMFS HSTT LOA		Authorized Amount (26Dec15- 25Dec16)	Actual Usage (26Dec15- 25Dec16)	% Used of Authorized Amount
(A) Non-impulsive Sources Used During Training				
MF1	Hull-mounted sonars (e.g. AN/SQS-53)	11,588 hours	**	**
MF1K	Hull-mounted sonar Kingfisher mode	88 hours	**	**
MF2	Hull-mounted sonars (e.g. AN/SQS-56)	3,060 hours	**	**
MF2K	Hull-mounted sonar Kingfisher mode	34 hours	**	**
MF3	Hull-mounted submarine sonar (e.g. AN/BQQ-10)	2,336 hours	**	**
MF4	Helicopter dipping sonar (e.g. AN/AQS-22)	888 hours	**	**
MF5	Acoustic sonobuoys (e.g. AN/SSQ-62)	13,718 items	**	**
MF11	High duty cycle hull-mounted sonars (e.g. AN/SQS-53 HDC)	1,120 hours	**	**
MF12	High duty cycle towed array sonars (e.g. HDC-VDS)	1,094 hours	**	**
HF1	Hull-mounted submarine sonar (e.g. AN/BQQ-10)	1,754 hours	**	**
HF4	Mine detection / classification sonars	4,848 hours	**	**
ASW1	Mid-frequency Deep Water Active Distributed System (DWADS)	224 hours	**	**
ASW2	Mid-frequency Multi-static Active Coherent sonobuoy (e.g. AN/SSQ-125)	1,800 items	**	**
ASW3	Mid-frequency towed acoustic countermeasure (e.g. AN/SLQ-25)	16,561 hours	**	**
ASW4	Mid-frequency expendable acoustic device countermeasure (e.g. ADC/NAE)	1,540 items	**	**
TORP1	Lightweight torpedo (e.g. MK 54/MK 46)	170 items	**	**
TORP2	Heavyweight torpedo (e.g. MK 48)	400 items	**	**
(B) Annual Number of Impulsive Source Detonations During Training				
E1	0.1 lb to 0.25 lb NEW	19,840 detonations	2,662	14%
E2	0.26 lb to 0.5 lb NEW	1,044 detonations	1,185	114% ¹
E3	>0.5 lb to 2.5 lb NEW	3,020 detonations	305	11%
E4	>2.5 lb to 5 lb NEW	668 detonations	16	3%
E5	>5 lb to 10 lb NEW	8,154 detonations	3,136	39%
E6	>10 lb to 20 lb NEW	538 detonations	97	18%
E7	>20 lb to 60 lb NEW	407 detonations	0	0%
E8	>60 lb to 100 lb NEW	64 detonations	26	41%
E9	>100 lb to 250 lb NEW	16 detonations	16	100%
E10	>250 lb to 500 lb NEW	19 detonations	19	100%
E11	>500 lb to 650 lb NEW	8 detonations	0	0%
E12 ²	>650 lb to 1,000 lb NEW	224 detonations	60	27%
E13	>1,000 lb to 1,740 lb NEW	9 detonations	0	0%

¹E2 detonations during the 5-year period of the authorization are 28% of the permitted cumulative total. This year's overage is also offset by underutilization of Bin E3.

²Bomb detonations (all NEWs) were modeled as E12 and are totaled here.

(C) Total annual airgun use

Airguns were not used within HSTT for training during this reporting period. Airgun use is not an authorized source for training in the HSTT Letter of Authorization or Final Rule, but reporting requirements for this source are specified in the reporting section for training in the HSTT Letter of Authorization.

(D) Improved Extended Echo-Ranging System (IEER) sonobuoy summary

IEER sonobuoys were not used within the HSTT. IEER buoys have been phased out of the inventory for training, and are no longer planned or anticipated to be used during training within the HSTT.

(3) HSTT – Sonar Exercise Notification

The Navy submitted all required information to NMFS for all MTEs during the reporting period, including location of the exercise, beginning and end dates of the exercise, and type of exercise.

(4) HSTT – Geographic Information Representation

The geographic extent of U.S. Navy use of sound sources within the HSTT Study Area from 26 December 2015 to 25 December 2016 is classified and has been forwarded to NMFS in accordance with the HSTT Training Letter of Authorization in the classified version of this report.

(5) HSTT – Special Reporting Requirements

(i) Total Sonar Hours (dense humpback areas)

Hull-mounted mid-frequency active sonar use within the dense humpback areas between 15 December and 15 April of this reporting period has been forwarded to NMFS in the classified version of this report.

(ii) Total Sonar Hours (Humpback Whale Cautionary Area)

Hull-mounted mid-frequency active sonar use was not used within or in the vicinity of the Humpback Whale Cautionary Area between 15 December and 15 April of this reporting period.