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National Marine Fisheries Service
Office of Protected Resources

Prepared by:

Department of the Navy

In accordance with the Letters of Authorization
Under the MMPA dated 31 August 2016 and ITS authorization under
the ESA dated 13 September 2017

Annual Unclassified Exercise Report

For Exercises

Conducted in the MITT Study Area

**03 August 2019 through 30 July 2020
(Year 5)**

**For The U.S. Navy's
Mariana Islands Training and Testing (MITT) Study Area**

31 October 2020

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MARIANA ISLANDS TRAINING AND TESTING STUDY AREA

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ANNUAL MARIANA ISLANDS TRAINING AND TESTING UNCLASSIFIED EXERCISE REPORT

INTRODUCTION

The U.S. Navy prepared this Annual Exercise Report covering the period from 03 August 2019 to 30 July 2020 in compliance with the National Marine Fisheries Service (NMFS) Final Rule and Letter of Authorization under the Marine Mammal Protection Act (MMPA) for the Navy’s training activities conducted in the Mariana Islands Training and Testing (MITT) Study Area.

The Letter of Authorization¹ “Monitoring and Reporting” subsection indicates the following must be present within this report:

- (1) Major Training Exercises (MTE)/SINKEX
 - (i) Reporting requirements for Coordinated and Strike Group Exercises and SINKEX
 - (ii) Exercise information for each MTE
 - (iii) Evaluation of mitigation effectiveness
 - (iv) Exercise information for each SINKEX
- (2) Summary of Sources Used
 - (i) Total annual usage of each type of sound source
- (3) Geographic Information Presentation
- (4) 5-Year Close-out Report

The information in this Annual Report represents the best practical data collection for this period. The 5-Year Close-out Report contains final totals of authorized usage for the entire five-year period of the authorization.

The Biological Opinion² “Terms and Conditions” subsection states the Navy will monitor and report annual numbers of ordnance by type expended at Farallon de Medinilla (FDM). This information is present in this report in section (5).

¹MITT: 7(e) of the Letter of Authorization, and 50 CFR §218.95(g)(1) through (g)(3)

²MITT: 8.4 of the Biological Opinion for the MITT Study Area (13 September 2017)

(1) MITT – Major Training Exercises/SINKEX

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

The MITT Study Area Letter of Authorization requires reporting for MTEs and Sinking Exercises (SINKEX) taking place during the reporting period. MTEs that occur in MITT include *Joint Multi-Strike Group Exercise* (Valiant Shield) and *Joint Expeditionary Exercises*. The required reporting items for these exercises are detailed in sections 1-ii through 1-iv below.

(ii) Exercise information for each Major Training Exercise

Table 1-ii-1a. MTEs conducted in the MITT Study Area.

| (A) Exercise designator | (B) Date that exercise began/ended | (C) Location | (D) Number of items or hours of each sound source bin used | | | | | | | | | | | | | | | | | | | | | | | (E) Number and types of US vessels and aircraft participating | | | | | | | | |
|---|------------------------------------|--------------|--|------------------|-------------------|------------------|-----------------|------------------|-------------------|--------------------|------------------|-----------------|------------------|--------------------|---------------------|--------------------|------------------|-------------------|--------------------|---------------------|--------------------|-------------------|--------------------|---------------------|-----------------------|---|------------------|--------------------|----|-----|-----|-----|----------------------------|-------------------------|
| | | | (i) LF4 (hours) | (ii) LF5 (hours) | (iii) LF6 (hours) | (iv) MF1 (hours) | (v) MF2 (hours) | (vi) MF3 (hours) | (vii) MF4 (hours) | (viii) MF5 (items) | (ix) MF6 (items) | (x) MF8 (hours) | (xi) MF9 (hours) | (xii) MF10 (hours) | (xiii) MF11 (hours) | (xiv) MF12 (hours) | (xv) HF1 (hours) | (xvi) HF4 (hours) | (xvii) HF5 (hours) | (xviii) HF6 (hours) | (xix) ASW1 (hours) | (xx) ASW2 (items) | (xxi) ASW3 (hours) | (xxii) ASW4 (items) | (xxiii) TORP1 (items) | (xxiv) TORP2 (items) | (xxv) M3 (hours) | (xxvi) SD1 (hours) | CG | DDG | FFG | LCS | MH-60R/SH-60F dipping helo | MH-60S non-dipping helo |
| No major training exercises were conducted in the MITT Study Area during this reporting period. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 1-ii-1b. MTEs conducted in the MITT Study Area (explosives).

| (A) Exercise designator | (B) Date that exercise began/ended | (C) Location | (D) Number of impulsive source detonations | | | | | | | | | | |
|---|------------------------------------|--------------|--|---------|----------|---------|--------|---------|----------|-----------|----------|---------|----------|
| | | | (i) E1 | (ii) E2 | (iii) E3 | (iv) E4 | (v) E5 | (vi) E6 | (vii) E8 | (viii) E9 | (ix) E10 | (x) E11 | (xi) E12 |
| No major training exercises were conducted in the MITT Study Area during this reporting period. | | | | | | | | | | | | | |

(ii) (F) Individual marine mammal sighting information for each sighting when mitigation occurred during each MTE

Table 1-ii-2. MITT MTE – Individual Marine Mammal Sighting Information:

| (1) Date/time/location of sighting | (2) Species | (3) Number of individuals | (4) Initial detection sensor | (5) Indication of specific type of platform the observation was made from | (6) Length of time observers maintained visual contact with marine mammal(s) (min) | (7) Sea state (Beaufort scale) | (8) Visibility (nm) | (9) Sound source in use at time of sighting (Y/N) | (10) Indication of whether animal is <200 yd, 200-500 yd, 500-1000 yd, 1000-2000 yd, or >2000yd | (11) Mitigation implementation – whether operation of sonar sensor was delayed, or sonar was powered down or shutdown, and how long the delay was | (12) If source in use is hull-mounted, relative bearing of animal from ship, and estimation of animal’s motion relative to ship | (13) Observed behavior – Lookouts shall report, in plain language and without trying to categorize in any way, the observed behavior of the animals and if any calves present |
|---|-------------|---------------------------|------------------------------|---|--|--------------------------------|---------------------|---|---|---|---|---|
| No major training exercises were conducted in the MITT Study Area during this reporting period. | | | | | | | | | | | | |

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

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

There were zero major training exercises conducted in the MITT Study Area during this reporting period.

Table 1-iii-1. MITT Study Area MTEs and associated marine mammal and sea turtle mitigation sightings.

| MTE Type | Dates | # of Exercise Days | # of US Ships Involved (MFAS and non-MFAS) | # of Mitigation Sightings | # of Marine Mammals |
|---|-------|--------------------|--|---------------------------|---------------------|
| No major training exercises were conducted in the MITT Study Area during this reporting period. | | | | | |

MITT Study Area Major Training Exercise Marine Mammal Observations

There were zero major training exercises conducted in the MITT Study Area during this reporting period therefore there is no observation data to report.

MITT Study Area Major Training Exercise Mitigations

There were zero major training exercises conducted in the MITT Study Area during this reporting period therefore there is no mitigation data to report.

SUMMARY: Mitigation Effectiveness and Navy Mitigation Zone Adherence

There were zero major training exercises conducted in the MITT Study Area this reporting period therefore there is nothing to report regarding mitigation effectiveness or mitigation zone adherence. The Protective Measures Assessment Protocol (PMAP) is required to be used prior to each activity requiring potential mitigation to ensure proper mitigation and mitigation zones are utilized.

(iv) Exercise Information for each SINKEX

One SINKEX event was conducted in the MITT Study Area during the reporting period, on 01 October 2019.

Table 1-iv-1. SINKEX information for event on 01 October 2019.

| |
|---|
| (A) Vessels and aircraft involved |
| * |
| (B) Location (operating area) |
| Mariana Islands Range Complex |
| (C) Chronological list of events |
| * |
| (D) Visibility/weather |
| Visibility – Unrestricted Wind – 270T at 5 KTS Wave height – 2 FT, sea state 2 Cloud Cover – scattered at 8,000 FT |
| (E) Aircraft surveys |
| 2x P-8; cleared surface to 10,000 FT; speed 300 KTS; 12,000 square miles surveyed 2x S-70B; cleared surface to 1,000 FT; speed 100 KTS; 400 square miles surveyed 2x B-52H; cleared surface to 20,000 FT; speed 350 KTS; 12,000 square miles surveyed 3x MH-60S; cleared surface to 800 FT; speed 120 KTS; 1,225 square miles surveyed 1x P-8; cleared surface to 10,000 FT; speed 300 KTS; 1,225 square miles surveyed 2x B-52H; cleared surface to 20,000 FT; speed 350 KTS; 1,225 square miles surveyed |
| (F) Passive acoustic monitoring |
| 17 passive sonobuoys were deployed at ranges directly adjacent to the hulk out to 5,600 YDS. No passive acoustic biological detections were reported. |
| (G) Individual marine mammal sighting information |

| |
|--|
| No marine mammals were reported during the event. |
| (H) Ordnance used and net explosive weight (NEW) |
| 4x AGM-114 (15 lb NEW) 4x GBU-12 (192 lb NEW) 3x Harpoon (215 lb NEW) 1x Mk-48 (666 lb NEW) 1x Naval Strike Missile (275 lb NEW) |
| Total NEW: 2,414 lbs |

* This information is classified and has been forwarded to NMFS in accordance with the MITT Letter of Authorization in the classified version of this Annual Exercise Report.

(2) MITT – Summary of Sources Used

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

This section summarizes total annual usage of each type of non-impulsive and impulsive source used within the MITT Study Area during the reporting period. All sound sources were used less than authorized by NMFS.

Table 2-i-1. Training and Testing source usage within the MITT Study Area by source bin.

| Authorized sound sources 50 CFR §218.95 and NMFS MITT LOA | | Authorized Amount (03Aug19- 30Jul20) | Actual Usage (03Aug19- 30Jul20) | % Used of Authorized Amount |
|---|--|--|---------------------------------------|-----------------------------------|
| (A) Annual Non-impulsive Sources Used During Training and Testing | | | | |
| LF4 | Low-frequency sources from 180 dB up to 200 dB | 123 hours | * | * |
| LF5 | Low-frequency sources from 160 dB up to 180 dB | 11 hours | * | * |
| LF6 | Variable depth sonars and other LF systems | 40 hours | * | * |
| MF1 | Hull-mounted sonars (e.g. AN/SQS-53) | 1,872 hours | * | * |
| MF2 | Hull-mounted sonars (e.g. AN/SQS-56) | 625 hours | * | * |
| MF3 | Hull-mounted submarine sonar (e.g. AN/BQQ-10) | 192 hours | * | * |
| MF4 | Helicopter dipping sonar (e.g. AN/AQS-22) | 214 hours | * | * |
| MF5 | Acoustic sonobuoys (e.g. AN/SSQ-62) | 2,588 items | * | * |
| MF6 | Active underwater sound signal devices (e.g. MK-84 SUS) | 33 items | * | * |
| MF8 | Other MF sources greater than 200 dB | 123 hours | * | * |
| MF9 | Other MF sources from 180 dB up to 200 dB | 47 hours | * | * |
| MF10 | Other MF sources from 160 dB up to 180 dB | 231 hours | * | * |
| MF11 | High duty cycle hull-mounted sonars (e.g. AN/SQS-53 HDC) | 324 hours | * | * |
| MF12 | High duty cycle variable depth sonars | 656 hours | * | * |
| HF1 | Hull-mounted submarine sonar (e.g. AN/BQQ-10) | 113 hours | * | * |
| HF4 | Mine detection, classification, and neutralization sonars (e.g. AN/AQS-20, AN/SQQ-32) | 1,060 hours | * | * |
| HF5 | Other active sources greater than 200 dB | 336 hours | * | * |
| HF6 | Other active sources from 180 dB up to 200 dB (e.g. UUV sensors) | 1,173 items | * | * |
| ASW1 | Mid-frequency active systems (e.g. DWADS) | 144 hours | * | * |
| ASW2 | Mid-frequency Multi-static Active Coherent sonobuoy (e.g AN/SSQ-125) | 660 items | * | * |
| ASW3 | Mid-frequency towed acoustic countermeasure (e.g. AN/SLQ-25) | 3,935 hours | * | * |
| ASW4 | Mid-frequency expendable acoustic device countermeasure (e.g. ADC/NAE) | 32 items | * | * |
| TORP1 | Lightweight torpedo (e.g. MK-46/54) | 115 items | * | * |
| TORP2 | Heavyweight torpedo (e.g. MK-48) | 62 items | * | * |

| | | | | |
|---|-------------------------------|--------------------|-------|------|
| M3 | Mid-frequency acoustic modems | 112 hours | * | * |
| SD1 | Swimmer detection sonars | 2,341 hours | * | * |
| (B) Annual Number of Impulsive Source Detonations During Training and Testing | | | | |
| E1 | 0.1 lb to 0.25 lb NEW | 10,140 detonations | 2,115 | 21% |
| E2 | 0.26 lb to 0.5 lb NEW | 106 detonations | 0 | 0% |
| E3 | >0.5 lb to 2.5lb NEW | 932 detonations | 85 | 9% |
| E4 | >2.5 lb to 5 lb NEW | 420 detonations | 0 | 0% |
| E5 | >5 lb to 10 lb NEW | 684 detonations | 47 | 7% |
| E6 | >10 lb to 20 lb NEW | 76 detonations | 3 | 4% |
| E8 | >60 lb to 100 lb NEW | 16 detonations | 1 | 6% |
| E9 | >100 lb to 250 lb NEW | 4 detonations | 4 | 100% |
| E10 | >250 lb to 500 lb NEW | 12 detonations | 2 | 17% |
| E11 | >500 lb to 650 lb NEW | 6 detonations | 0 | 0% |
| E12** | >650 lb to 1,000 lb NEW | 184 detonations | 13 | 7% |

* This information is classified and has been forwarded to NMFS in accordance with the MITT Letter of Authorization in the classified version of this Annual Exercise Report.

** Bomb and missile detonations from E9 were modeled as E12 and are totaled here.

Table 2-i-2. 5-year cumulative source usage within the MITT Study Area by source bin.

| Sound Source Bin | Year 1 Actual Usage (03Aug15-02Aug16) | Year 2 Actual Usage (03Aug16-02Aug17) | Year 3 Actual Usage (03Aug17-02Aug18) | Year 4 Actual Usage (03Aug18-02Aug19) | Year 5 Actual Usage (03Aug19-30Jul20) | 5-yr Authorized Amount (03Aug15-30Jul20) | 5-yr Cumulative Usage (03Aug15-30Jul20) | % Used of 5-yr Authorized Amount |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|---|----------------------------------|
| (A) Non-impulsive Sources Used During Training and Testing | | | | | | | | |
| LF4 | * | * | * | * | * | 615 hours | * | * |
| LF5 | * | * | * | * | * | 55 hours | * | * |
| LF6 | * | * | * | * | * | 200 hours | * | * |
| MF1 | * | * | * | * | * | 9,360 hours | * | * |
| MF2 | * | * | * | * | * | 3,125 hours | * | * |
| MF3 | * | * | * | * | * | 960 hours | * | * |
| MF4 | * | * | * | * | * | 1,070 hours | * | * |
| MF5 | * | * | * | * | * | 12,940 items | * | * |
| MF6 | * | * | * | * | * | 165 items | * | * |
| MF8 | * | * | * | * | * | 615 hours | * | * |
| MF9 | * | * | * | * | * | 235 hours | * | * |
| MF10 | * | * | * | * | * | 1,155 hours | * | * |
| MF11 | * | * | * | * | * | 1,620 hours | * | * |
| MF12 | * | * | * | * | * | 3,280 hours | * | * |
| HF1 | * | * | * | * | * | 565 hours | * | * |
| HF4 | * | * | * | * | * | 5,300 hours | * | * |
| HF5 | * | * | * | * | * | 1,680 hours | * | * |
| HF6 | * | * | * | * | * | 5,865 items | * | * |
| ASW1 | * | * | * | * | * | 720 hours | * | * |
| ASW2 | * | * | * | * | * | 3,300 items | * | * |
| ASW3 | * | * | * | * | * | 19,675 hours | * | * |
| ASW4 | * | * | * | * | * | 160 items | * | * |
| TORP1 | * | * | * | * | * | 575 items | * | * |
| TORP2 | * | * | * | * | * | 310 items | * | * |
| M3 | * | * | * | * | * | 560 hours | * | * |
| SD1 | * | * | * | * | * | 11,705 hours | * | * |

| (B) Impulsive Source Detonations During Training and Testing | | | | | | | | |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|---|----------------------------------|
| Sound Source Bin | Year 1 Actual Usage (03Aug15-02Aug16) | Year 2 Actual Usage (03Aug16-02Aug17) | Year 3 Actual Usage (03Aug17-02Aug18) | Year 4 Actual Usage (03Aug18-02Aug19) | Year 5 Actual Usage (03Aug19-30Jul20) | 5-yr Authorized Amount (03Aug15-30Jul20) | 5-yr Cumulative Usage (03Aug15-30Jul20) | % Used of 5-yr Authorized Amount |
| E1 | 0 | 500 | 0 | 4,960 | 2,115 | 50,700 detonations | 7,575 | 15% |
| E2 | 0 | 0 | 0 | 0 | 0 | 530 detonations | 0 | 0% |
| E3 | 7 | 7 | 93 | 96 | 85 | 4,660 detonations | 288 | 6% |
| E4 | 0 | 1 | 7 | 0 | 0 | 2,100 detonations | 8 | 1% |
| E5 | 0 | 0 | 0 | 0 | 47 | 3,420 detonations | 47 | 1% |
| E6 | 3 | 5 | 3 | 3 | 3 | 380 detonations | 17 | 4% |
| E8 | 0 | 0 | 0 | 6 | 1 | 80 detonations | 7 | 9% |
| E9 | 0 | 6 | 3 | 4 | 4 | 20 detonations | 17 | 85% |
| E10 | 0 | 10 | 0 | 9 | 2 | 60 detonations | 21 | 35% |
| E11 | 0 | 0 | 0 | 4 | 0 | 30 detonations | 4 | 13% |
| E12** | 0 | 1 | 49 | 137 | 13 | 920 detonations | 200 | 22% |

* This information is classified and has been forwarded to NMFS in accordance with the MITT Letter of Authorization in the classified version of this Annual Exercise Report.

** Bomb and missile detonations from E9 were modeled as E12 and are totaled here.

(2)(C) Improved Extended Echo-Ranging System (IEER) sonobuoy summary

IEER sonobuoys were not used within the MITT Study Area. IEER buoys have been phased out of the training inventory and are no longer planned or anticipated to be used during training in MITT. However, they could possibly be used during testing activities in future years.

(3) MITT – Geographic Information Presentation

The geographic extent of U.S. Navy use of sound sources within the MITT Study Area during the reporting period is classified and has been forwarded to NMFS in accordance with the MITT Letter of Authorization in the classified version of this report.

(4) MITT – 5-Year Close-out Report

In accordance with section 7(f) of the Letter of Authorization, this report serves as the 5-Year Close-out Report. The annual totals of each sound source bin with a comparison to the 5-year allowance are presented in section 2 and in the classified version of this report.

(5) MITT – Farallon de Medinilla (FDM) Ordnance Expenditures

In accordance with section 8.4 of the Biological Opinion, this section includes numbers of ordnance by type expended at FDM from 03 August 2019 to 30 July 2020.

Table 5-1. FDM Ordnance Expenditures by Sound Source Bin.

| Sound Source Bin | FDM Ordnance Expenditures |
|------------------|---------------------------|
| E1 | 1,200 |
| E2 | 0 |
| E3 | 0 |
| E4 | 0 |
| E5 | 142 |
| E6 | 0 |
| E8 | 0 |
| E9 | 224 |
| E10 | 2 |
| E11 | 0 |
| E12 | 38 |

There were no observed ricochets and 1 observed miss (1 GBU-12 bomb, bin E9) that landed in waters surrounding FDM during the reporting period.

The Navy did not observe any in-water effects to corals resulting from detonations of high-explosive ordnance during the reporting period.