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Office of Protected Resources

Prepared by:

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In accordance with the Letter of Authorization  
Under the MMPA and ITS authorization under  
the ESA 12 August 2012

# **Annual Range Complex Unclassified Exercise Report**

## **16 February 2012 to 15 February 2013**

**For The U.S. Navy  
Mariana Islands Range Complex (MIRC)**

**15 April 2013**

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# MARIANA ISLANDS RANGE COMPLEX

## INTRODUCTION

The U.S. Navy prepared this Annual Range Complex Exercise Report covering the period from 16 February 2012 to 15 February 2013 in compliance with the National Marine Fisheries Service (NMFS) Final Rule under the Marine Mammal Protection Act (MMPA) for the Mariana Islands Range Complex (MIRC). The annual hours of each type of sonar and explosive source used within the MIRC between 15 February 2012 and 15 February 2013 is classified information and because of this the data is submitted to the National Marine Fisheries Service in a separate classified version of this report.

In the Mariana Islands Range Complex Letter of Authorization "Annual MIRC report", the following report subsections were specified and are present within this report for the MIRC:

- (1) Mid-Frequency Active Sonar (MFAS)/High-Frequency Active Sonar (HFAS) Major Training Exercises for Reporting (MTER).
  - (i) Exercise Information (for each MTER).
  - (ii) Individual Marine Mammal Sighting Information (for each MTER).
  - (iii) Evaluation (based on data gathered during all MTER) of effectiveness of mitigation measures designed to avoid exposing marine mammals to MFAS. This evaluation shall identify the specific observations that support any conclusion the Navy reaches about the effectiveness of the mitigation.
- (2) Anti-submarine Warfare (ASW) Summary
  - (i) Total annual hours of each type of sonar source
  - (ii) Cumulative Impact Report
- (3) Sinking Exercises (SINKEX)
  - (i) Exercise information
  - (ii) Individual marine mammal observation information
- (4) Improved Extended Echo Ranging (IEER)/Advanced Extended Echo Ranging (AEER) Summary
  - (i) Total number of IEER and AEER events
  - (ii) Total expended/detonated rounds (buoys)
  - (iii) Total number of self-scuttled IEER rounds
- (5) Explosives Summary
  - (i) Total annual number of each type of explosive exercise
  - (ii) Total annual expended/detonated rounds for each explosive type

This Annual Report covers the period from 16 February 2012 to 15 February 2013, and the information represents the best practical data collection for this period. The data collection period for monitoring and reporting is not specifically stated in the MIRC Letter of Authorization (LOA) as it was for previous range complexes. In order to provide adequate time to collect, compile, and validate the range data prior to the 15 April 2013 LOA renewal submission date, a data cutoff date of 15 February 2013 was chosen by the Commander, U.S. Pacific Fleet. This amount of time is consistent with other LOAs. In an effort to provide a better representation of annual exercise data for the MIRC, the Navy will in the future combine exercise data from 16 February to 15 February and compare it to the annual allocations provided in the MIRC Letter of Authorization. This representation of annual exercise data shall be repeated in future annual reports. To provide accounting for the entire five year period of the authorization, the Navy will also submit a final report at the end of the five years to provide comprehensive totals of authorized usage.

**(1) MIRC – MFAS/HFAS Major Training Exercise Summary**

This section summarizes authorized sonar use during major training exercises conducted in the Marianas Islands Range Complex (MIRC) during the reporting period.

**(i) Exercise information**

**Table MI-i. MTER conducted in the MIRC.**

(A) Exercise designator	(B) Date exercise began and ended	(C) Locations	(D) # and types of active sources used						(E) # and types of passive sources used						(F) # and types of vessels and aircraft participating						(G) Total hours of observation by watchstanders	(H) Total hours of all active sources	(I) Total hours of each active source						(J) Wave height (high, low, and average) (ft)		
			(D)a SQS-53	(D)b SQS-56	(D)c BQQ-10 or 5	(D)d AQS-22 or 13F	(D)e MK-48	(D)f SSQ-62 Sonobuoys	(E)a SQS-53	(E)b SQS-56	(E)c SQS-19	(E)d BQQ-10 or 5	(E)e AQS-22 or 13F	(E)f TB-16 or 29	(E)g SSQ-53 Sonobuoys	(F)a CG	(F)b DDG	(F)c FFG	(F)d SH-60F\MH-60R dipping helo	(F)e SH-60B non-dipping helo			(F)f Submarines	(F)g MPRA	(F)h Non-ASW surface ships	(F)i USNS	(I)a SQS-53	(I)b SQS-56		(I)c BQQ-10 or 5	(I)d AQS-22 or 13F
JSMG	11-19 Sep 2012	MIRC	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	11,910	*	*	*	*	*	*	6,1,3

JMSG - Joint Multi-Strike Group Exercise

MIRC – Mariana Islands Range Complex

\*Classified data submitted to the National Marine Fisheries Service (NMFS) in the classified version of the annual exercise for MIRC.

(ii) Individual marine mammal sighting information by exercise

Table M1-ii. MIRC MTER – Individual Marine Mammal Sighting Information:

MIRC	(A) Location of sighting	(B) Species	(C) # of individuals	(D) Calves observed (y/n)	(E) Initial detection sensor	(F) Platform detection from	(G) Length of time observed (min)	(H) Wave height (ft)	(I) Visibility (nm)	(J) Sonar source in use (y/n)	(K) Range (yds)	(L) Mitigation implemented	(M) If hull mounted source in use, true bearing and animal travel	(N) Observed behavior
		dolphin	8	N	VIS	DDG	10	2	10	N	<10	NA	NA	Dolphins closed the ship before opening. Swimming near the surface.

MIRC=Marianas Islands Range Complex, N=No, VIS=Visual, NA=Not Applicable, DDG=Guided Missile Destroyer

**(iii) Evaluation of effectiveness (based on data gathered during all MTER)**

Between 16 February 2012 and 15 February 2013, there was a single major training exercise conducted within the Marianas Island Range Complex. Marine mammals were not sighted during any periods of Mid-Frequency Active Sonar (MFAS) use.

**Mitigation Effectiveness Discussion**

The three categories of mitigation measures (Personnel Training, Lookout and Watchstander Responsibility, and Operating Procedures) outlined in the MIRC EIS/OEIS and approved by NMFS (DoN 2010, NMFS 2009, 2010, 2012) were effective in detecting and appropriately mitigating exposure of marine mammal to mid-frequency active sonar. Fleet commanders 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, and making adjustments based upon the lessons learned. The safety zones were adhered to, and vessels and aircraft applied mitigation measures when marine mammals were visually observed within the requisite zones.

**Table M1-iii-2. Breakdown of marine mammals sighted in the MIRC during MTER at ranges less than 1000 yards concurrent with MFAS use.**

<b>Range of Marine Mammal Sighting</b>		
<b>&lt; 200 yards</b>	<b>200 – 500 yards</b>	<b>500 – 1000 yards</b>
No applicable sightings	No applicable sightings	No applicable sightings

Table M1-iii-3. MIRC MTER where sonar was on during detection of marine mammals at ranges less than 1,000 yards and mitigation conducted.

1) Range [MIRC (M) ]	No applicable sightings
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 [secure (SD); power down (PD); maneuver ship (MAN) <sup>1</sup> ]	
10) Estimate MAX exposure PRIOR to mitigation (dB re 1uPa) <sup>2</sup>	
11) Number of minutes sonar mitigation applied	
12) Estimate exposure AFTER mitigation (dB re 1uPa) <sup>2</sup>	
13) DISTANCE ship would have moved given length of mitigation and nominal 10-knot ship speed (yds)	
14) If hull mounted source in use, true bearing, animal travel	
15) Observed behavior	



**(2) MIRC – ASW Summary**

**(i) Total annual hours of each type of sonar source**

Total annual hours of each type of sonar source used within the MIRC between 16 February 2012 and 15 February 2013 is classified and is presented in the classified annual exercise report for MIRC. However, every sonar source listed in table M2-i was used at a level significantly less than authorized annually.

**Table M2-i. Sonar authorization within the MIRC by source.**

Authorized MFAS sources §218.100 (c)(1) of NMFS MIRC Final Rule	Feb 2012-Feb 2013	Annually Authorized	% Total Used of Total Authorized Annually
(i) AN/SQS-53 surface ship hull-mounted active sonar (hours)	*	2,173 hours	*
(ii) AN/SQS-56 surface ship hull-mounted active sonar (hours)	*	141 hours	*
(iii) AN/SSQ-62 DICASS acoustic sonobuoy (# of buoys)	*	1,654 buoys	*
(iv) AN/AQS-22 or 13 helicopter active dipping sonar (# of dips)	*	592 dips	*
(v) AN/BQQ-10 submarine active sonar (hours)	*	12 hours	*
(vi) Mk-48/Mk-46/Mk-54 torpedoes (# of torpedoes)	*	40 runs	*
(vii) AN/SSQ-110 (IEER) sonobuoy (# of buoys)	*	106 buoys	*
(viii) AN/SSQ-125 (AEER) sonobuoy (# of buoys)	*	106 buoys	*
(ix) Range Pingers	*	280 hours	*
(x) PUTR Transponder	*	280 hours	*

\*Classified data submitted to the National Marine Fisheries Service (NMFS) in the classified version of the annual exercise for MIRC.

**(ii) Cumulative Impact Report**

From NMFS Final Rule: *“To the extent practical, the Navy, in coordination with NMFS, shall develop and implement a method of annually reporting non-major training (i.e. ULT) utilizing hull mounted sonar. The report shall present an annual (and seasonal where practicable) depiction of non-major training exercises geographically across MIRC. The Navy shall include (in the MIRC annual report) a brief annual progress update on the status of the development of an effective and unclassified method to report this information until an agreed-upon (with NMFS) method has been developed and implemented.”*

The precise locations and frequency of ASW training is classified. There is currently no method to declassify the sensitivity of this data in order to publish this type of information in an unclassified report. For this reason the only method available for this information to be disseminated for the foreseeable future is in the classified version of the MIRC annual exercise report.

**(3) MIRC – Sinking Exercises (SINKEX)**

**(i) Exercise information**

Table M3-i. Summary of SINKEX conducted in MIRC.

MIRC	(A) Location	12 Sep 2012	(B) Date and time exercise began and ended	*	(C) Total hours of observation before, during, and after exercise	*	(D) Total number and types of rounds expended/explosives detonated	*	(E) Number and types of passive acoustic sources used in exercise	*	(F) Total hours of passive acoustic search time	*	(G) Number and types of vessels and aircraft participating	High: 3 Low: 1 Average: 2	(H) Wave height in ft (High, Low, Avg)	(I) Narrative description of sensors and platforms used for marine mammal detection and timeline illustrating how marine mammal detection was conducted
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\*Classified data submitted to the National Marine Fisheries Service (NMFS) in the classified version of the annual exercise for MIRC.

No sightings of wildlife/marine mammals were reported in the vicinity of the impact area or mitigation zone during this exercise.

**(ii) Individual marine mammal observation information**

**Table M3-ii-1. Mammal sighting information for SINKEX.**

(A) Location	(B) Species	(C) Number of individuals	(D) Calves observed (y/n)	(E) Initial detection sensor	(F) Length of observation (min)	(G) Wave height	(H) Visibility	(I) Sighted before/during/after exercise, and time (min)	(J) Distance of mammal from detonation	(K) Observed behavior	(L) Mitigation implementation	(M) If observation occurs during detonation, indicate munitions type
No sightings of wildlife/marine mammals were reported in the vicinity of the impact area or mitigation zone during this exercise.												

**(4) MIRC – IEER/AEER Summary**

Improved Extended Echo-Ranging System (IEER) and Advanced Extended Echo-Ranging System (AEER) sonobuoy use data is classified and is forwarded in the classified version of the MIRC annual exercise report.

**Table M4-1. IEER/AEER events conducted and buoys expended, detonated, and self-scuttled.**

Period	# Events (i)	# Expended(ii)	# Detonated (ii)	# Self-scuttled (iii)
16 Feb 2012 to 15 Feb 2013	*	*	*	*
<b>Total Annual</b>	*	*	*	*

\*Classified data submitted to the National Marine Fisheries Service (NMFS) in the classified version of the annual exercise for MIRC.

**(5) MIRC – Explosives Summary**

**Table M5-1. Explosives use in the MIRC.**

<b>(i) Total annual number of each type of explosive exercise</b>			
<b>Authorized Exercise</b>	<b>Total Exercise Amount Feb12-Feb13</b>	<b>Amount Authorized Annually</b>	<b>% Total Used To Total Authorized</b>
(A) Gunnery Exercises (S-S GUNEX)	*	12	*
(B) Bombing Exercise (BOMBEX)	*	4	*
(C) Sinking Exercises (SINKEX)	*	2	*
(D) Extended Echo Ranging and Improved Echo Ranging (IEER/AEER) Systems	*	106	*
(E) Demolitions (Underwater Demolition)	*	50	*
(F) Air to Surface Missile Exercises (A-S MISSILEX)	*	2	*
<b>(ii) Total annual expended/detonated rounds for each explosive type</b>			
<b>Category</b>	<b>Authorized Quantity/Year</b>	<b>Total Amount Used Feb 2012-Feb 2013</b>	
(A) 5" and 76 mm naval gunfire rounds	440	*	
(B) Bombs (MK-82,83, 84, GBU-38, 32, 31)	4	*	
(C) SINKEX	HARPOON (10), 5" Rounds (800), HELLFIRE (4), MAVERICK (16), GBU-12 (20), GBU-10 (8), MK-48 (2), Underwater Demolitions (4)	*	
(D) IEER/AEER Systems	106	*	
(E) Demolitions	50	*	
(F) Maverick missiles	2	*	

\*Classified data submitted to the National Marine Fisheries Service (NMFS) in the classified version of the annual exercise for MIRC.