

Prepared For and Submitted To  
**National Marine Fisheries Service**  
**Office of Protected Resources**

Prepared by  
**Department of the Navy**

# **Annual Range Complex Exercise Report**

## **2010**

In accordance with: 3 June 2010 Letters of  
Authorization for the Virginia Capes,  
Jacksonville, and Cherry Point Range  
Complexes; 50 CFR Part 218, Subparts A, B,  
and C; and the 2010 Annual Biological  
Opinion for Three Navy East Coast Range  
Complexes

**For the U.S. Navy's  
Virginia Capes, Jacksonville, Cherry  
Point, and Northeast Range  
Complexes**

**February 2011**

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# **Annual Range Complex Exercise Report**

**For the U.S. Navy's Virginia Capes,  
Jacksonville, Cherry Point, and Northeast  
Range Complexes**

**2010**

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February 2011

**TABLE OF CONTENTS**

INTRODUCTION ..... 1

SECTION I: Virginia Capes Range Complex ..... 5

SECTION II: Jacksonville Range Complex ..... 6

SECTION III: Cherry Point Range Complex ..... 7

SECTION IV: Annual East Coast Training Frequencies and Locations ..... 8

REFERENCES ..... 24

## INTRODUCTION

(U) The U.S. Navy prepared this Annual Range Complex Exercise Report covering the period from 02 January 2010 to 01 January 2011 pursuant to the National Marine Fisheries Service (NMFS) Marine Mammal Protection Act (MMPA) regulations for the Virginia Capes (VACAPES) (50 C.F.R. Part 218, Subpart A), Jacksonville/Charleston (JAX) (50 C.F.R. Part 218, Subpart B) and Navy Cherry Point (CHPT) (50 C.F.R. Part 218, Subpart C) Range Complexes. The report also provides the information required by NMFS' Biological Opinion on Letter of Authorization for U.S. Navy Training Activities on East Coast Range Complexes 2010-2011 (BO) issued pursuant to the Endangered Species Act. The scope of the NMFS BO includes the same training activities using explosives covered by the above MMPA regulations, non-explosive training conducted in the VACAPES, JAX, and CHPT Operating Areas (OPAREAs), Navy training in the Northeast OPAREAs, and activities associated with the Transit Protection System at Naval Submarine Base Kings Bay, Georgia. Figure 1 illustrates the geographic extent of the VACAPES, JAX, and CHPT OPAREAs. Figure 2 illustrates the Northeast OPAREAs.

(U) In the MMPA regulations<sup>1</sup> and Letters of Authorization (LOA)<sup>2</sup> for the VACAPES, JAX, and CHPT Range Complexes the following reporting requirements were specified and are presented in Sections I-III of this report:

(1) Total annual number of each type of explosive exercise (of those identified as part of the "specified activity" in the regulations) conducted in the VACAPES, JAX and CHPT Range Complexes.

(2) Total annual expended/detonated rounds (missiles, bombs, etc.) for each explosive type.

(U) In NMFS' 2010 BO<sup>3</sup> the following Reasonable and Prudent Measure listed in the Incidental Take Statement was specified and is addressed in Section IV of this report:

The U.S. Navy shall submit reports that identify the general location, timing, number of hours and other aspects of the training activities the U.S. Navy plans to conduct along the Atlantic Coast of the United States over the next twelve months.

(U) In addition, each of the range complex MMPA LOAs and regulations require an update from Navy on the status of its explosive training tracking efforts. While Navy units, such as ships and aircraft, report a variety of information on a routine basis, a specific process for reporting and tracking the required information did not exist when the MMPA authorizations were finalized. The following update describes refinements to the Navy's tracking process since the previous reporting period.

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<sup>1</sup> See 50 C.F.R. §§ 218.5(g) (1) and (2), 218.14(g) (1) and (2), 218.24(g) (1) and (2)

<sup>2</sup> See Section 7(f) of the Letters of Authorization (NMFS 2010, 2010a, 2010b)

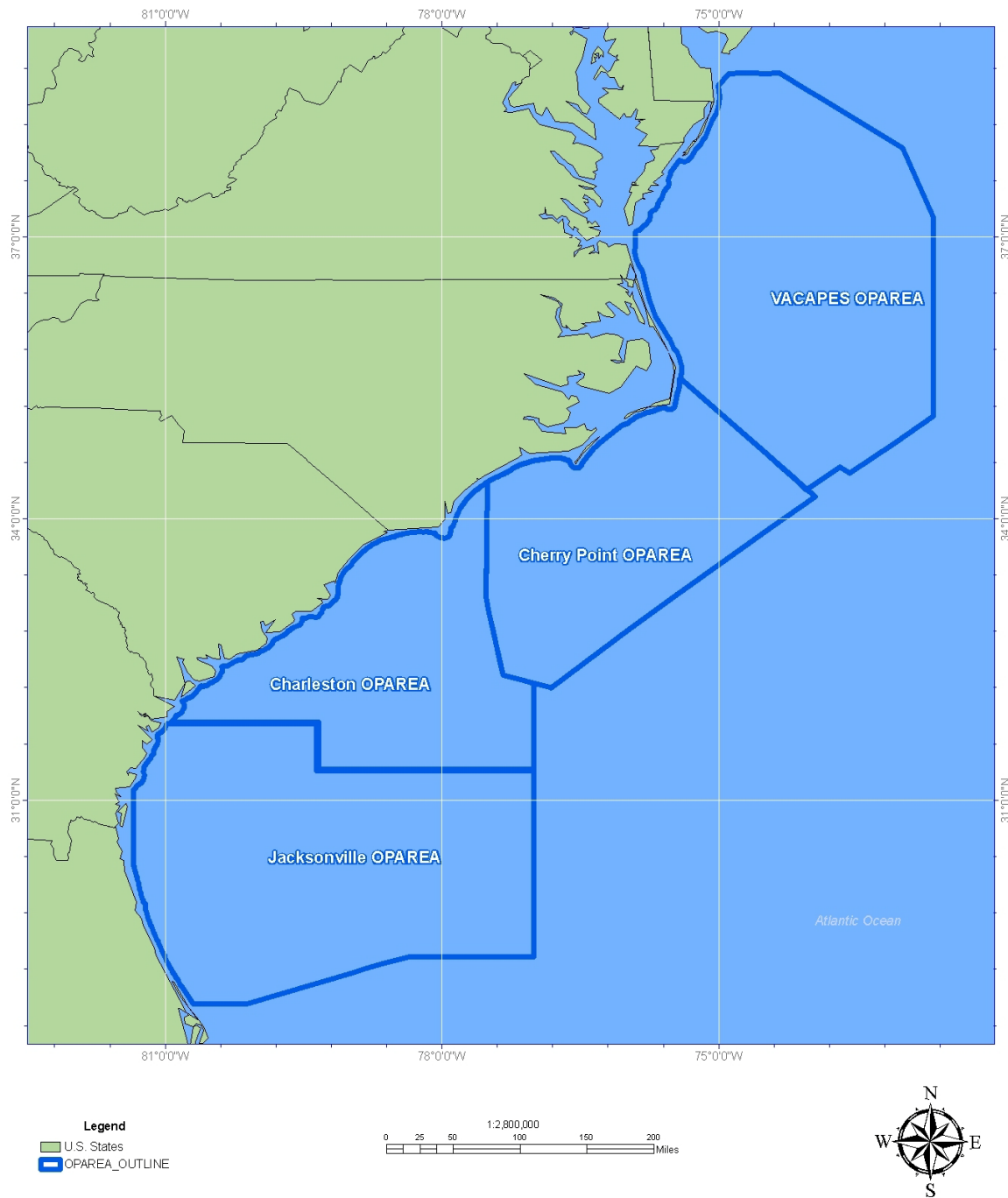
<sup>3</sup> See p. 288 of the NMFS BO (NMFS 2010c)

(U) As reported in Navy's 2009 report, a protocol has been established to monitor and track the number of events conducted and the type and amount of ordnance used for those activities identified in the MMPA authorizations. To summarize, data collection efforts are a result of a collective team effort between the Fleet Forces Range Complex Support Team (RCST) personnel and Fleet users. RCST personnel receive the weekly operating schedules promulgated by the VACAPES, JAX and CHPT Scheduling Offices. Through this scheduling process and daily coordination with the Scheduling Agencies and Fleet users, RCST personnel are aware of what activities are being requested in the operating areas and receive after-action reporting of high explosive (HE) munitions expenditures. The after-action reporting is accomplished by direct interface with the naval unit upon completion of the event and reviewing the naval unit's Ammunition Transaction Reporting message that reports the type and amount of ordnance expended. The collected data is then entered into a database for analysis and reporting.

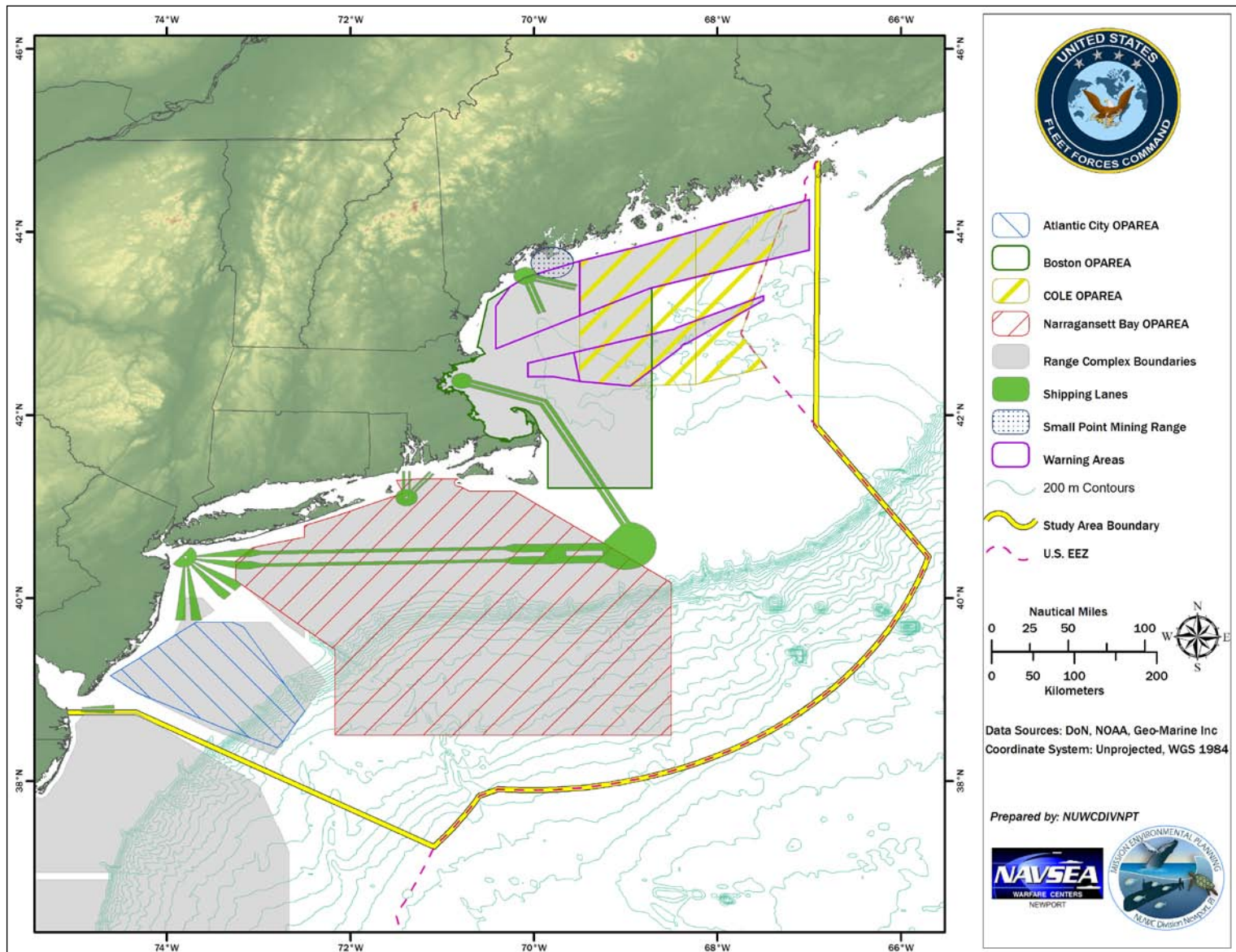
(U) Given that many of the reporting metrics had not been previously collected in the format specified by NMFS, the Navy's Range Complex data gathering process continues to be refined to improve the accuracy of reporting. One refinement that resulted in a change to tracking and reporting was a modification in how underwater detonation (UNDET) for mine exercises in VACAPES are counted. Previously, the level of detail provided for individual UNDET events was conservative and classified all charges detonated as the maximum net explosive weight (NEW) typically used for mine neutralization training (20 lb). However, tracking revealed that not all UNDET events used 20 lb NEW charges; rather, smaller 5 lb or 10 lb NEW charges are sometimes used. The Navy's tracking and reporting protocol now provides more detail and accounts for the various size NEW charges.

(U) The information contained in this report represents the best practical data collection as of 02 January 2011. The report provides an accounting of a full year of training from 2 January 2010 to 1 January 2011. The report also includes the cumulative amount of events and ordnance expended since the start of the authorizations (5 June 2009 – 1 January 2011). The data provided in the following tables indicates that as of 1 January 2011 the Navy is not exceeding the 5-year estimate of training events specified in the MMPA authorizations. However, it should be noted that Navy training events are variable within any given year based on the availability of strike groups undergoing training certification, logistics and fiscal considerations as they impact scheduling, and real-world commitments to other regional locations (North Atlantic and Mediterranean deployments, counter-piracy operations, disaster relief, etc.). Therefore, the data on the amount of annual training may vary on an annual basis, possibly resulting in higher or lower amounts of reported training events in future annual exercise reports.

### VACAPES, Jacksonville, Cherry Point Study Area



**(U) Figure 1. Geographic extent of the VACAPES, JAX, and CHPT OPAREAs. Activities within the Charleston OPAREA are combined with those activities conducted within the JAX OPAREA for purposes of the MMPA authorization and this report.**



(U) Figure 2. Geographic extent of the Northeast OPAREAs.



## SECTION I: Virginia Capes Range Complex

(U) The summary for explosive use within the VACAPES Range Complex is presented in Table 1.

**(U) Table 1. Total annual number of each type of explosive exercise and associated ordnance listed at 50 C.F.R. §218.1 conducted in the VACAPES Range Complex. Current reporting period is 02 January 2010 through 01 January 2011. Cumulative total includes activity from 5 June 2009 through 01 January 2011.**

Training Event	Ordnance Used	Number of Events Conducted		Number of Expended/Detonated Rounds	
		Current Reporting Period	Cumulative Total	Current Reporting Period	Cumulative Total
Mine Exercise	Airborne Mine Neutralization System	0	0	0	0
	5-lb charge	1	1	1	1
	10-lb charge	33	42	33	42
	20-lb charge	11	21	11	21
Bombing Exercise (Air-to-Surface)	MK-83/GBU-32 (1,000 lb bomb)	0	0	0	0
	Mk-82 (500 lb bomb)	7	10	29	41
Missile Exercise (Air-to-Surface)	AGM-114 (Hellfire missile)	8	8	8	8
	AGM-65 (Maverick missile)	0	0	0	0
	AGM-88 (HARM missile)	0	0	0	0
Firing Exercise (FIREX with IMPASS)	5" explosive Naval gunfire	17	24	387	459

## SECTION II: Jacksonville Range Complex

(U) The summary for explosive use within the JAX Range Complex is presented in Table 2 below.

**(U) Table 2. Total annual number of each type of explosive exercise and associated ordnance listed at 50 C.F.R. §218.10 conducted in the JAX Range Complex. Current reporting period is 02 January 2010 through 01 January 2011. Cumulative total includes activity from 5 June 2009 through 01 January 2011.**

Training Event	Ordnance Used	Number of Events Conducted		Number of Expended/Detonated Rounds	
		Current Reporting Period	Cumulative Total	Current Reporting Period	Cumulative Total
Mine Exercise	5-lb charge	0	0	0	0
	10-lb charge	0	0	0	0
	20-lb charge	0	0	0	0
Missile Exercise (Air-to-Surface)	AGM-114 (Hellfire missile)	7	9 <sup>4</sup>	7	9
	AGM-65 (Maverick missile)	2	5	2	5
Firing Exercise (FIREX with IMPASS)	5" explosive Naval gunfire	5	6	64	64
Small Arms Training	MK3A2 grenade	0	0	0	0

<sup>4</sup> The 2009 report listed one Hellfire event with 2 missiles expended. The Navy's reporting protocol now considers that training scenario as two events since two missiles were expended. Therefore, the cumulative total includes 2 events from 2009 and 7 events from 2010 for a total of 9 events.

### SECTION III: Cherry Point Range Complex

(U) The summary for explosive use within the CHPT Range Complex is presented in Table 3 below.

**(U) Table 3. Total annual number of each type of explosive exercise and associated ordnance listed at 50 C.F.R. §218.20 conducted in the CHPT Range Complex. Current reporting period is 02 January 2010 through 01 January 2011. Cumulative total includes activity from 5 June 2009 through 01 January 2011.**

Training Event	Ordnance Used	Number of Events Conducted		Number of Expended/Detonated Rounds	
		Current Reporting Period	Cumulative Total	Current Reporting Period	Cumulative Total
Mine Exercise	5-lb charge	0	0	0	0
	10-lb charge	0	0	0	0
	20-lb charge	0	0	0	0
Missile Exercise (Air-to-Surface)	AGM-114 (Hellfire missile)	0	0	0	0
	AGM-65 (TOW missile)	0	0	0	0
Firing Exercise (FIREX with IMPASS)	5" explosive Naval gunfire	0	0	0	0

## **SECTION IV: Annual East Coast Training Frequencies and Locations**

Tables 4 - 6 summarize the platforms, systems, ordnance, training frequencies, and locations of training events within the VACAPES, CHPT, and JAX OPAREAs estimated to occur for the 12 month period January 2011 to January 2012. As the majority of the events listed are unit level training (ULT) and not typically scheduled one-year in advance, specific dates or time periods for when these events will be carried out are not available. The frequency of each type of training exercise is captured as the number of individual events or sorties, as opposed to number of hours, to provide the most realistic picture of training frequency and to be consistent with Navy's VACAPES, CHPT, and JAX Environmental Impact Statements, Biological Evaluation (BE), Marine Mammal Protection Act Authorization, and NMFS BO. All training events, platforms, systems, ordnance, and locations are described in detail in the Navy's 2008 BE (DoN 2008) and BE Addendum (DoN 2009) and are not repeated in this report.

The type, manner, and frequency of training in the Northeast OPAREAs for the next 12 months is described in the Navy's BE Addendum and not repeated in this report. Similarly, activities associated with the Transit Protection System at Naval Submarine Base Kings Bay, Georgia have not changed, are described in Navy's BE Addendum, and not repeated in this report.

**(U) Table 4. Summary of platforms, systems, ordnance, training frequencies, and locations of training events within the VACAPES OPAREA for the 12 month period January 2011 to January 2012.**

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
<b>MINE WARFARE (MIW)</b>					
Mine Countermeasures (MCM)	MH-53E	MK-103 <sup>5</sup>	200 sorties <sup>6</sup>		W-50A/C
	MH-53E	SPU-1W	70 sorties		Lower Chesapeake Bay
	MH-53E	MK-104	120 sorties		Lower Chesapeake Bay
	MH-53E	MK-105	120 sorties		Lower Chesapeake Bay
	MH-53E	AQS-24A	550 sorties		W-386, W-72
	MH-60S	OASIS	370 sorties		Lower Chesapeake Bay
	MH-60S	AQS-20A	670 sorties		W-386, W-72
	MH-60S	ALMDS	110 sorties		W-50C
	DDG 91+ (Remote Mine-hunting System [RMS])	AQS-20A	12 events		W-386, W-72
Mine Neutralization	MH-53E	AMNS	70 sorties		W-50C
	MH-60S	AMNS	140 sorties	30 HE rounds	W-50C
	MH-60S	RAMICS	110 sorties	2,750 rounds	W-50C
	Explosive Ordnance Disposal	5-lb charges	9 events	9 detonations	Surface Danger Zone (W-50C)
			10-lb charges	150 events	150 detonations
	20-lb charges	160 events	160 detonations		
<b>SURFACE WARFARE (SUW)</b>					
Bombing Exercise (BOMBEX) (air-to-surface)	F/A-18	MK-83/GBU-32 or similar ordnance (1,000 lbs High Explosive [HE])	0 events	0 bombs	W-386, (Air-K)
	F/A-18	MK-82 or similar ordnance (500 lbs High Explosive [HE])	10 events	40 bombs	

<sup>5</sup> Shaded rows signify "High-Explosive (HE)" rounds.

<sup>6</sup> Sortie is defined here as a single operational training or testing event conducted by one aircraft in a range or operating area. A sortie is one complete flight (one take-off and one full stop landing). In this table "events" are non-aircraft training or testing platforms.

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
	F/A-18	MK-20 (non-explosive practice munitions [NEPM])	34 sorties	68 bombs	W-72A/B
	F/A-18	MK-76 (NEPM)	28 sorties	142 bombs	W-72A/B
	F/A-18	MK-82 (NEPM)	75 sorties	150 bombs	W-72A/B
	F/A-18	MK-83 (NEPM)	25 sorties	50 bombs	W-72A/B
	F/A-18	BDU-45 (NEPM)	22 sorties	50 bombs	W-72A/B
	F/A-18, F-35 (Joint Strike Fighter [JSF])	BDU-33, GBU-12, JDAM, JSOW, MK-76, MK-82, MK-84 (all NEPM)	77 sorties	77 bombs	W-386 (Air-K)
Missile exercise (MISSILEX) (air-to-surface)	MH-60R/S, HH-60H	AGM-114 (Hellfire missile; HE)	60 sorties	60 missiles	W-386 (Air-K) (75%) W-72A (25%)
	F/A-18, P-3C and P-8	AGM-65 E/F (Maverick; HE)	20 sorties	20 missiles	W-386 (Air-K)
	F/A-18, F-35 JSF, H-60	AGM-114 (Hellfire), AGM-88 (HARM), AGM-65 LSR (Maverick), AGM-84 (Harpoon)	23 sorties		W-386 (Air-K)
Gunnery exercise (GUNEX) (air-to-surface)	MH-53E	.50 cal machine gun	27 sorties	54,000 rounds	W-72A (Air-1A) (75%) W-50C (25%)
	MH-60R/S, HH-60H	2.75 inch rockets	97 sorties	3,700 rounds	W-386 (Air-K) (75%) W72A (25%)
	MH-60R/S, HH-60H	.50 cal machine gun	330 sorties	264,000 rounds	W-72A (Air-1A) (75%) W-50C (25%)
	MH-60R/S	M-240 (7.62 mm machine gun)	165 sorties	264,000 rounds	W-72A (Air-1A) (75%) W-50C (25%)
	F/A-18, F-35 (JSF)	20 mm cannon (NEPM)	11 sorties	7,000 rounds	W-386 (Air-K)
GUNEX (surface-to-surface) (boat)	Vessels such as small unit river craft, combat rubber raiding craft, rigid hull inflatable boats, and patrol craft	.50 cal, 7.62 mm	36 events	220,000 small cal rounds	W-50C (90%) R-6606 (10%)
	Vessels such as small unit river craft, combat rubber raiding craft, rigid hull inflatable boats, and patrol craft	40 mm grenades	36 events	600 rounds	W-50C (90%) R-6606 (10%)
GUNEX (surface-to-surface) (ship) <sup>7</sup>	CG, DDG	5-inch gun	115 events	2,430 rounds	W-386 (80%) W-72 (20%)
	FFG	76 mm gun	22 events	370 rounds	W-386 (80%) W-72 (20%)

<sup>7</sup> CG: Cruiser; DDG: Guided Missile Destroyer; FFG Guided Missile Frigate; LHA: Amphibious Assault Ship, general purpose; LHD: Multipurpose Amphibious Assault Ship; LPD: Amphibious Assault Ship, Transport Dock; LSD: Dock Landing Ship; all rounds are non-explosive practice munitions (NEPM).

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
	CG,DDG, FFG, LHA, LHD, LPD, LSD	.50 cal machine gun	120 events	261,600 rounds	W-386 (80%) W-72 (20%)
	CG,DDG, FFG, LHA, LHD, LPD, LSD	25 mm machine gun	120 events	137,400 rounds	W-386 (80%) W-72 (20%)
Laser targeting	F/A-18	Maverick missile laser designation system	136 sorties		W-386 (Air-K), W-72A
	H-60	Hellfire missile laser designation system	136 sorties		W-386 (Air-K), W-72A
Maritime Security Operations to include VBSS/MIO	Rigid Hull Inflatable Boat (RHIB) or similar small boat and CG, DDG, FFG, LPD or LSD	No ordnance used	92 events		VACAPES OPAREA
VBSS/MIO- Helo	H-60	No ordnance used	44 events (3 sorties/event)		VACAPES OPAREA
<b>AIR WARFARE (AW)</b>					
Air Combat Maneuver (ACM)	F/A-18	Captive-carry missile or telemetry pod	5,800 sorties		W-72A (Air-2A/B, 3A/B)
GUNEX (air-to-air)	F/A-18	20 mm cannon (NEPM)	60 sorties	15,000 rounds	W-72A
MISSILEX (air-to-air)	F/A-18	AIM-7, AIM-9, AIM-120	160 sorties	48 HE and 112 NEPM missiles	W-72A
	F/A-18, F-35 (JSF)	AIM-7, AIM-9, AIM-120, AIM-132 (ASRAAM)	33 sorties	33 missiles	W-386 (Air D, G, H, K)
GUNEX (surface-to-air)	CG, DDG	5-inch gun	15 events	290 rounds	W-386 (80%) W-72 (20%)
	FFG	76 mm gun	3 events	72 rounds	W-386 (80%) W-72 (20%)
	CG, DDG, FFG, CVN, LHA, LHD, LPD, LSD	20 m Close-in Weapons System	30 events	64,000 rounds	W-386 (80%) W-72 (20%)
MISSILEX (surface-to-air)	AOE, LHD, CVN	NATO Sea Sparrow	33 RDT&E events		W-386 (Air D, G, H, K)
	CG, LHA, AOE	Evolved NATO Sea Sparrow	33 RDT&E events		W-386 (Air D, G, H, K)
	CVN, FFG, LHA, LHD, LSD, LPD	Rolling Airframe Missile	33 RDT&E events		W-386 (Air D, G, H, K)
	CG, DDG	SM-2	33 RDT&E events		W-386 (Air D, G, H, K)
	CF, DDG, LHA, LHD, LSD, LPD	SM-2 (20 missiles); Sea Sparrow (2 missiles); RAM (2 missiles)	24 events	24 missiles	VACAPES OPAREA

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
Air intercept control (AIC)27	F/A-18, E-2C, CVN, CG, DDG, LHA, LHD	Air search & fire control radars	370 events		W-386 and W-72
Detect to engage (DTE)	CG, DDG, FFG, LHA, LHD, LPD, LSD, CVN	Air search & fire control radars	225 events		W-386 and W-72
<b>STRIKE WARFARE (STW)</b>					
HARM missile exercise (HARMEX) (air-to-surface)	F/A-18	AGM-88 (HARM)	26 sorties	26 missiles	W=386, (Air E, F, I, J)
<b>AMPHIBIOUS WARFARE (AMW)</b>					
FIREX with IMPASS	CG, DDG	5 inch gun (IMPASS)	22 events	1,540 rounds	(Preferred Areas W-386 7C/D, 8C/D, W-72 [1C1/2]), (Secondary Areas W-386 [5C/D])
<b>ELECTRONIC COMBAT (EC)</b>					
Chaff Exercise	F/A-18	RR-144A/AL defensive chaff	1,950 sorties	19,500 canisters	W-72 (85%) W-386 (15%)
	MH-60R/S	RR-144A/AL defensive chaff	17 sorties	510 canisters	W-386 (Air-K)
	F/A-18, MH-60R/S, F-35 (JSF)	RR-144A/AL defensive chaff	14 sorties	140 canisters	W-396 (85%) W-72 (15%)
	CG, DDG, FFG, LCC, LHA, LHD, LPD, LSD	MK-214 or MK-216 Super Rapid Bloom Off-board Chaff (SRBOC) defensive chaff	MK-214 28 events	168 canisters	W-396 (85%) W-72 (15%)
	CG, DDG, FFG, LCC, LHA, LHD, LPD, LSD	MK-214 or MK-216 Super Rapid Bloom Off-board Chaff (SRBOC) defensive chaff	MK-216 9 events	54 canisters	W-396 (85%) W-72 (15%)
Flare Exercise	F/A-18	Defensive flares	55 sorties	275 flares	W-396 (85%) W-72 (15%)
	MH-60R/S	Defensive flares	17 sorties	510 flares	W-386 (Air-K)
	F/A-18, MH-60R/S, F-35 (JSF)	Defensive flares	8 sorties	40 flares	W-396 (85%) W-72 (15%)
Electronic Combat (EC) Operations	F/A-18 F-35 (JSF)	ALE-50/55 electronic jammer	10 sorties		W-386 (15%) W-72 (85%)
	F/S-18		110 sorties		W-386 (15%) W-72 (85%)
	AOE, CG, CVN, DDG, FFG, LHA, LHD, LPD, LSD	SLQ-32	182 events		VACAPES OPAREA
<b>TEST AND EVALUATION</b>					
Shipboard Electronic Systems Evaluation Facility Utilization	All Hampton Roads-based ships	Radio and radar only	3,800 tests		VACAPES OPAREA (SESEF ULM-4 Range and RCS Range)



<b>Training Event</b>	<b>Platform</b>	<b>System or Ordnance</b>	<b>Frequency</b>	<b>Ordnance Amount</b>	<b>Location</b>
(SESEF)					

**(U) Table 5. Summary of platforms, systems, ordnance, training frequencies, and locations of training events within the CHPT OPAREA for the 12 month period January 2011 to January 2012.**

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
<b>MINE WARFARE (MIW)</b>					
Mine Countermeasure (MCM)	MH-53E (Navy)	MK-103	54 sorties		ESG COMPTUEX & JTFEX: Onslow Bay MIW Training Area, (Onslow Beach out to 12 nm, in portion of Area 15) CSG COMPTUEX: Carrier OPAREA North
	MH-53E (Navy)	MK-105	54 sorties		ESG COMPTUEX & JTFEX: Onslow Bay MIW Training Area, (Onslow Beach out to 12 nm, in portion of Area 15) CSG COMPTUEX: Carrier OPAREA North
	MH-53E (Navy)	AQS-24A	228 sorties		ESG COMPTUEX & JTFEX: Onslow Bay MIW Training Area, (Onslow Beach out to 12 nm, in portion of Area 15) CSG COMPTUEX: Carrier OPAREA North
	MH-60S (Navy)	OASIS	75 sorties		ESG COMPTUEX & JTFEX: Onslow Bay MIW Training Area, (Onslow Beach out to 12 nm, in portion of Area 15) CSG COMPTUEX: Carrier OPAREA North
	MH-60S (Navy)	AQS-20A	165 sorties		ESG COMPTUEX & JTFEX: Onslow Bay MIW Training Area, (Onslow Beach out to 12 nm, in portion of Area 15) CSG COMPTUEX: Carrier OPAREA North
	MH-60S (Navy)	ALMDS	84 sorties		ESG COMPTUEX & JTFEX: Onslow Bay MIW Training Area, (Onslow Beach out to 12 nm, in portion of Area 15) CSG COMPTUEX: Carrier OPAREA North
Mine Neutralization	MH-60S (Navy)	AMNS (Non-explosive Practice Munitions [NEPM])	27 sorties		UNDET Area Onslow Bay (3-12 nm from Onslow Beach)
	MH-60S (Navy)	RAMICS	27 sorties	675 rounds	UNDET Area Onslow Bay (3-12 nm from Onslow Beach)
	Explosive Ordnance Disposal (EOD) (Navy)	20 lb NEW charges	20 events	20 detonations	UNDET Area Onslow Bay (3-12 nm from Onslow Beach)
<b>SURFACE WARFARE (SUW)</b>					

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
Bombing Exercise (BOMBEX) (Air-to-Surface)	F/A-18 (Navy or USMC)	MK-82 or BDU-45 (NEPM)	25 events	98 bombs	W-122
	AV-8B (USMC)	MK-82 or BDU-45 (NEPM)	12 events	96 bombs	W-122
	F/A-18 (Navy or USMC)	MK-83 (NEPM)	13 events	52 bombs	W-122
	F/A-18 (Navy)	MK-76 (25 lb NEPM)	14 events	142 bombs	W-122
	F/A-18 (USMC)	MK-76 (NEPM)	12 events	290 bombs	W-122
	AV-8B (USMC)	MK-76 (NEPM)	12 events	133 bombs	W-122
Missile Exercise (MISSILEX) (Air-to-Surface)	AH-1W (USMC)	AGM-114 Hellfire	8 sorties	6 HE; 2 NEPM missiles	W-122 (Area 16, 17)
	AH-1W (USMC)	TOW Missile (all HE)	8 sorties	8 missiles	W-122 (Area 16, 17)
Gunnery Exercise (GUNEX) (Air-to-Surface)	AH-1W (USMC)	20 mm cannon	40 sorties	12,000 rounds	W-122 (Area 1, 2, 3, 8, 9, 10, 15, 16, 17)
	UH-1N (USMC)	.50 cal machine gun	40 sorties	60,000 rounds	W-122 (Area 1, 2, 3, 8, 9, 10, 15, 16, 17)
	UH-1N (USMC)	7.62 mm machine gun	40 sorties	60,000 rounds	W-122 (Area 1, 2, 3, 8, 9, 10, 15, 16, 17)
	F/A-18 (USMC)	20 mm cannon	10 sorties	2,400 rounds	W-122
	AV-8B (USMC)	25 mm cannon	10 sorties	2,400 rounds	W-122
GUNEX (Surface-to-Surface)(Ship)	LHA, LHD, LSD, and LPD	.50 cal machine gun	18 events	43,200 rounds	Cherry Pt OPAREA
	LHA, LHD, LSD, and LPD	25 mm machine gun	28 events	28,800 rounds	Cherry Pt OPAREA
	CG and DDG (Navy)	5" guns (NEPM)	27 events	1,140 rounds	Cherry Pt OPAREA
	FFG (Navy)	76 mm (NEPM)	7 events	190 rounds	Cherry Pt OPAREA
GUNEX (Surface-to-Surface)(USMC small	LHA, LHD, LSD, and LPD (Navy)	9 mm pistol	30 events	12,000 rounds	Cherry Pt OPAREA

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
arms training)	LHA, LHD, LSD, and LPD (Navy)	9 mm/.45 cal pistol, M-16, M-4, M-249 squad Automatic Weapon, MK-19, 40 mm TP, M-240G machine gun, .50 cal machine gun (5.56/7.62 mm/.50 cal rounds)	30 events	12,000 rounds	Cherry Pt OPAREA
	LHA, LHD, LSD, and LPD (Navy)	M-40 sniper rifle (308 cal)	4 events	40 rounds	Cherry Pt OPAREA
Maritime Security Operations (MSO) to include Visit, Board, Search & Seizure/maritime Intercept Operations (VBSS/MIO)-Ship	Rigid Hull Inflatable Boat (RHIB) or smaller boat and CG, DDG, FFG, LPD, or LSD (Navy)	No ordnance Used	60 events		Cherry Pt OPAREA
MSO to include VBSS/MIO-Helo	MH-60 and CG, DDG, FFG, LPD, or LSD (Navy)	No ordnance Used	8 events/24 sorties		Cherry Pt OPAREA
<b>AIR WARFARE (AW)</b>					
Air Combat maneuvers (ACM)	F/A-18, AV-8B, F-15 and F-16 (Navy, USMC, & USAF)	captive carry missile or telemetry pod	770 sorties		W-122 (Areas 1, 8, 15 & 16)
GUNEX (Air-to-Air)	F/A-18 (USMC)	20 mm cannon	10 sorties	2,400 rounds	W-122 (Areas 9, 10, 11, 12)
	AV-8B (USMC)	25 mm cannon	10 sorties	2,400 rounds	W-122 (Areas 9, 10, 11, 12)
MISSILEX (Air-to-Air)	F/A-18 (USMC)	AIM-7 Sparrow (NEPM)	4 sorties	4 missiles	W-122 (Areas 9, 10, 11, 12)
	AV-8B (USMC)	AIM-7 Sparrow (NEPM)	4 sorties	4 missiles	W-122 (Areas 9, 10, 11, 12)
	F/A-18 (USMC)	AIM-9 Sidewinder (HE)	4 sorties	4 missiles	W-122 (Areas 9, 10, 11, 12)
	AV-8B (USMC)	AIM-9 Sidewinder (HE)	4 sorties	4 missiles	W-122 (Areas 1, 2, 3, 8, 9, 10, 15, 16, 17)
	AH-1W (USMC)	AIM-9 Sidewinder (HE)	4 sorties	4 missiles	W-122 (Areas 1, 2, 3, 8, 9, 10, 15, 16, 17)

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
MISSILEX (Surface-to-Air)	CG, DDG, LHA, LHD	SM-2 (HE) Sea Sparrow (HE)	8 events	8 missiles	Cherry Pt OPAREA
Air Intercept Control	F/A-18 (Navy and USMC)	Air search and fire control radars	54 sorties		W-122
<b>ELECTRONIC COMBAT (EC)</b>					
EC Operations	AOE, CG, CVN <sup>8</sup> , DDG, FFG, LHA, LHD, LPD, LSD	SLQ-32	50 events		Cherry Pt OPAREA
	EA-6B, F/A-18G (Navy)	AN/ALQ-218, AN/ALQ-99, and AN/USQ-113	120 sorties		W-122
	All Navy and Marine Corps Fixed-wing aircraft	Multiple fixed and mobile SA, ZSU and EW threat emitters	2,450 sorties		W-122
Chaff Exercise	MH-60S (Navy)	RR-144A/AL	72 sorties	2,160 canisters	W-122 (mostly areas 1, 8, 15 & 16)
	F/A-18, AV-8B (Navy and USMC)	RR-144A/AL	500 sorties	5,000 canisters	W-122 (mostly areas 1, 8, 15 & 16)
	CG, DDG, FFG, LCC, LHA, LHD, LPD, LSD (Navy)	MK-214 (seduction chaff)	56 events	336 canisters	Cherry Pt OPAREA
	CG, DDG, FFG, LCC, LHA, LHD, LPD, LSD (Navy)	MK-216 (distraction chaff)	18 events	108 canisters	Cherry Pt OPAREA
Flare Exercise	MH-60S (Navy)	MK-46 MOD 1C, MJU-8A/B, MJU-27A/B, MJU-32B, MJU-53B, SM-875/ALE	72 sorties	2,160 flares	W-122 (Areas 1, 8, 15, 16)

<sup>8</sup> Fast Combat Support Ship (AOE); nuclear-powered aircraft carrier (CVN)

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
	F/A-18, AV-8B (Navy and USMC)	MK-46 MOD 1C, MJU-8A/B, MJU-27A/B, MJU-32B, MJU-53B, SM-875/ALE	35 sorties	175 flares	W-122 (Areas 1, 8, 15, 16)
<b>STRIKE WARFARE (STW)</b>					
HARM Missile Exercise (HARMEX) (Air-to-Surface)	F/A-18 (USMC)	AGM-88 HARM <sup>9</sup> (HE)	8 sorties	8 missiles	W-122 (Areas 18, 19, 20, 21)
<b>AMPHIBIOUS WARFARE (AMW)</b>					
FIREX (Land) <sup>10</sup>	CG, DDG (Navy)	5" guns (HE)	30 events	3,000 rounds	Cherry Pt OPAREA (Firing point Area 15B; impact point is inland range at MCB Camp Lejeune Area G-10)
FIREX (IMPASS) <sup>11</sup>		5" guns	2 events	140 rounds [78 HE, 62 NEPM]	Cherry Pt OPAREA (Area 4/5, 13/14)
Amphibious Assault	1 LHA or LHD, 1 LPD, 1 LSD, 1 CG, up to 3 DDG & 2 FFG with tailored MAGTF <sup>12</sup>	11-14 Amphibians (AAV/EFV or LAV/LAR); 4-8 landing craft (3-5 LCACs; 1-3 LCU); 22 aircraft (4 MH-53, 12 H-46/MV-22, 4 AH-1, 2 UH-1, 4 AV-8) <sup>13</sup>	4 assaults (52 AAVs AND LAVs, 144 LCAC, 96 LCUs, 36 MH-53, 64 H-46 or MV-22, 36 AH-1, 24 UH-1, 16 AV-8)		Onslow Bay (90% of operations occur in ESG operations box, extending from Onslow Beach seaward 25 nm into OPAREA 15)

<sup>9</sup> High-speed Anti-Radiation Missile (HARM)

<sup>10</sup> Normally referred to as Firing Exercise (FIREX)

<sup>11</sup> Integrated Maritime Portable Acoustic Scoring and Simulator (IMPASS)

<sup>12</sup> Marine Air Ground Task Force (MAGTF)

<sup>13</sup> Amphibious Assault Vehicle (AAV); Expeditionary Fighting Vehicle (EFV); Light Armored Vehicle (LAV); Light Amphibious Reconnaissance (LAR); Landing Craft Air Cushion (LCAC); Landing Craft Utility (LCU)

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
	1-3 amphibious ships (1 LHA or LHD, 1 LPD, 1 LSD), partial MAGTF	4-14 AAV/EFV or LAV/LAR; 2-8 LCAC/LCU; 22 aircraft (4 MH-53, 12 H-46/MV-22, 4 AH-1, 2 UH-1, 4 AV-8) <sup>10</sup>	6 assaults (42 AAVs and LAVs; 28 LCACs, 8 LCUs, 18 MH-53, 32 H-46, or MV-22, 18 AH-1, 12 UH-1, 8 AV-8)		Onslow Bay (90% of operations occur in ESG operations box, extending from Onslow Beach seaward 25 nm into OPAREA 15)
Amphibious Raid	1-3 amphibious ships (1 LHA or LHD, 1 LPD, 1 LSD), reinforced company (100-150 Marines)	4-14 AAV/EFV or LAV/LAR; 2-8 LCAC/LCU; 22 aircraft (4 MH-53, 12 H-46/MV-22, 4 AH-1, 2 UH-1, 4 AV-8) <sup>10</sup>	24 raids (72 AAV/EFV or LAV/LAR; 120 LCACs; 24 LCUs; 36 MH-53, 36 H-46 OR MV-22, 36 AH-1, 36 UH-1, 36 AV-8)		Onslow Bay (90% of operations occur in ESG operations box, extending from Onslow Beach seaward 25 nm into OPAREA 15)

**(U) Table 6. Summary of platforms, systems, ordnance, training frequencies, and locations of training events within the JAX OPAREA for the 12 month period January 2011 to January 2012.**

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
<b>MINE WARFARE (MIW)</b>					
Mine Laying	P-3C	BDU-45, MK-76 OR BDU-48 (NEPM)	10 sorties	40 Bombs	Lake George Range
Mine Countermeasures	MH-53E	MK-103	40 sorties		Amber Strait and Kaiser Carrier OPAREA
	MH-53E	MK-105	40 sorties		Amber Strait and Kaiser Carrier OPAREA
	MH-53E	AQS-14A & AQS-24A	160 sorties		Amber Strait and Kaiser Carrier OPAREA
	MH-60S	OASIS	54 sorties		Amber Strait and Kaiser Carrier OPAREA
	MH-60S	AQS-20A	162 sorties		Amber Strait and Kaiser Carrier OPAREA
Mine Neutralization	MH-60S	AMNS (NEPM)	27 sorties		Charleston OPAREA (10L and 12I)
	MH-60S	RAMICS	27 sorties		Charleston OPAREA (10L and 12I)
	EOD	20 pounds (Lbs) charges	10 events	10 detonations	Charleston OPAREA (10L and 12I)
<b>SURFACE WARFARE (SUW)</b>					
MISSILEX (A-S)	P-3C and P-8A	AGM-65 Maverick (HE)	10 sorties	10 missiles	W-157A and W-159A (Missile Laser Training Area)
	MH-60R/S, SH-60B, HH60-H	AGM-114 Hellfire (HE)	70 sorties	70 missiles	W-157A and W-159A (Missile Laser Training Area)
GUNEX (A-S)	H-60 (all models)	.50 cal machine gun	70 sorties	112,000 rounds	W-132, W-133, W-134, W-157, W-158
	H-60 (all models), MH-68 (U.S. Coast Guard)	M-240 (7.62 mm) machine gun	84 sorties	192,000 rounds	W-132, W-133, W-134, W-157, W-158,
	SH-60B, MH-60R, MH-68 (USCG)	.50 cal rifle	14 sorties	140 rounds	W-157, W-158



Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
GUNEX (Surface-to-Surface) (Boat)	Harbor Defense Boats (Boston Whalers)	.50 cal guns	96 events	44,000 rounds	Charleston OPAREA UNDET North and South
	Harbor Defense Boats (Boston Whalers)	M-60 and M-240 (7.62mm)	96 events	49,300 rounds	Charleston OPAREA UNDET North and South
	Harbor Defense Boats (Boston Whalers)	M-19 (40 mm NEPM)	96 events	12,700 rounds	Charleston OPAREA UNDET North and South
GUNEX (Surface-to-Surface) (FAC/FIAC)	CG, DDG, FFG	None	9 events		JAX and Charleston OPAREAs
GUNEX (Surface-to-Surface) (Ship)	CG, DDG	5" gun	31 events	810 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
	FFG	76 mm gun	58 events	960 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
	CG, DDG, FFG	.50 cal machine gun	44 events	105,800 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
	CG, DDG, FFG	25 mm machine gun	44 events	26,400 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
Bombing Exercise (BOMBEX) (A-S)	P-3C, P-8A	MK-82(1), BDU-45 (500 lbs NEPM)	36 events	144 bombs	W-157A/B, W-158A/B
	F/A-18	MK-82(1), BDU-45 (500 lbs NEPM)	90 events	360 bombs	W-157A/B, W-158A/B
	F/A-18	MK-83(1) (1,000 lbs NEPM)	3 events	12 bombs	W-158A (31J), W-157A/B, W-158A/B
	F/A-18	MK-20 (cluster bomb, NEPM)	13 events	51 bombs	W-157A/B, W-158A/B
	F/A-18	MK-76 (25 lbs NEPM with small smoke charge)	13 events	129 bombs	W-157A/B, W-158A/B
Laser Targeting	H-60	Hellfire Laster Fire Control System	275 sorties		W-132, W-133, W-134, W-157, W-158
	P-3C	Maverick Laser Fire Control System	28 sorties		W-132, W-133, W-134, W-157, W-158
Maritime Security (MS) to include Visit, Board, Search, and Seizure/Maritime Interception	Rigid Hull Inflatable Boat or similar small boat, and CG, DDG,	None	90 events		JAX and Charleston OPAREAs

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
Operations (VBSS/MIO)-Ship and Helo; anti-piracy operations; and special operations forces	FFG, LPD or LSD				
MS to include VBSS/MIO-Helicopter	H-60	None	60 events		W-157A (Area 4X) and W-159A (Area 5X)
<b>AIR WARFARE (AW)</b>					
Air Combat Maneuvers (ACM)	F/A-18	Captive carry missiles or telemetry pods	1,245 sorties		W-157A (Area 3X, 4X)
MISSILEX (A-A)	F/A-18	AIM-7, AIM-9, AIM-120 (30% HE, 70% NEPM)	22 sorties	7 HE, 15 NEPM missiles	W-132, W-133, W-134, W-157, W-158
MISSILEX (Surface-to-Air)	CG, DDG, LHA, LHD	SM-2 (HE), Sea Sparrow (HE)	8 events	8 missiles	JAX and Charleston OPAREAs
Air Intercept Control	F/A-18, E-2C, CVN, CG, DDG, LHA, LHD	Air Search and fire control radars	32 events	150 sorties	W-132, W-133, W-134, W-157, W-158
Detect-to-Engage	CG, DDG, FFG, LHA, LHD, LPD, LSD, CVN	Air Search and fire control radars	85 events		W-132, W-133, W-134, W-157, W-158
GUNEX (S-A)	CF, DDG	5" gun (inert)	5 events	100 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
	FFG20	76 mm gun (inert)	8 events	192 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
	CG, DDG, FFG	20 mm Close-in Weapons System	11 events	20,800 rounds	JAX OPAREA (Surface Gunnery Areas AA, BB, CC)
GUNEX (A-A)	F/A-18	20 mm cannon	47 sorties	8,250 rounds	W-157A/W-133 (Area 2X)
<b>STRIKE WARFARE (STW)</b>					
BOMBEX (A-G)	F/A-18	MK-76, BDU-45, BDU-48, MK-106 (NEPM)	25 sorties	100 bombs	Rodman Range
CSAR and Convoy Operations	SH-60F, HH-60H, MH-60S	Blank MG ammunition, chemical lights	146 events		Rodman Range
<b>AMPHIBIOUS WARFARE (AMW)</b>					
FIREX (Surface-to-Surface) with IMPASS	CG, DDG	5" gun (IMPASS)	10 events	390 HE rounds; 310 NEPM	JAX OPAREA (Surface Gunnery Areas BB and CC, Deepwater)

Training Event	Platform	System or Ordnance	Frequency	Ordnance Amount	Location
				rounds	IMPASS Site)
<b>ELECTRONIC COMBAT (EC)</b>					
EC Operations	EA-6B, F/A18G	AN/ALQ-218, AN/ALQ-99, AN/USQ-113	120 sorties		W-132, W-133, W-134, W-157, W-158
	CG, DDG, FFG, CVN, LHD, LPD, LSD	SLQ-32	61 events		JAX and Charleston OPAREAS
Chaff Exercise	CF, DDG, FFF, LCC, LHA, LHD, LPD, LSD	MK-214 (seduction chaff)	56 events	336 canisters	JAX and Charleston OPAREAS
	CF, DDG, FFF, LCC, LHA, LHD, LPD, LSD	MK-216 (distraction chaff)	18 events	108 canisters	JAX and Charleston OPAREAS
	H-60	RR-181/AL	9 events	9 canisters	JAX and Charleston OPAREAS
	F/A-18	R-144, R-129	415 sorties	4,150 canisters	W-157A (Area 3X, 4X)
Flare Exercise	F/A-18	MK-46 MOD 1C, MJU-8A/B, MJU- 27A/B, MJU-32B, MJU-53B, SM- 875/ALE	14 sorties	70 flares	W-157A (Area 3X, 4X)
	H-60	MK-46 MOD 1C, MJU-8A/B, MJU- 27A/B, MJU-32B, MJU-53B, SM- 875/ALE	80 sorties	2,400 flares	Lake George Range
<b>OTHER EVENTS</b>					
Shipboard Electronic Systems Evaluation Facility Utilization (SESEF)	CG, DDG, FFG	Radio and radar only	2,130 tests		5-15 nm east of NS Mayport
Precision Anchoring	CG, DDG, FFG	None	168 anchorages		3 nm offshore at NS Mayport
Small Arms	Harbor Defense Boats	MK3A2 Concussion anti-swimmer grenades (8 oz HE)	96 events	80 rounds	Charleston OPAREA UNDET North and South

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