Appendix D: Air Quality Emissions Calculations

Supplemental Environmental Impact Statement/

Overseas Environmental Impact Statement

Mariana Islands Training and Testing

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APPENDIX D AIR QUALITY EMISSIONS CALCULATIONS

This appendix discusses emission factor development, calculations, and assumptions used in the air quality analyses presented in the Air Quality section of Chapter 3 (see Section 3.2).

D.1 SURFACE ACTIVITIES EMISSIONS

Surface activities are associated with vessel movements. Fleet training activities use a variety of marine vessels, including cruisers, destroyers, frigates, carriers, submarines, amphibious vessels, and small boats. Testing activities use a variety of marine vessels, including various testing support vessels, work boats, torpedo recovery vessels, unmanned surface vehicles, and small boats. These vessels use a variety of propulsion methods, including marine outboard engines, diesel engines, and gas turbines.

Marine Outboard Engines:

Emission factors for small surface craft involved in amphibious training and testing activities were obtained from the Navy and Military Sealift Command (MSC) Marine Engine Fuel Consumption & Emission Calculator database. Emissions for surface craft using outboard engines were calculated using Navy and MSC emission factors which are provided in terms of emissions per hour, and multiplied by the hours of operation.

Emissions = HR/YR×EF×ENG

Where:

Emissions = surface craft emissions HR/YR = hours per year EF = emission factor for specific engine type ENG = number of engines

To obtain the total criteria pollutant emissions for the Proposed Action, emissions were calculated for each training or testing activity, type of surface vessel, and criteria pollutant. These individual estimates of emissions, in units of tons per year, were then summed by criteria pollutant to obtain the aggregate emissions for surface vessel emissions activities.

Diesel Engines:

Emission factors for small surface craft involved in amphibious training and testing activities were obtained from the Navy and MSC Marine Engine Fuel Consumption & Emission Calculator database. Diesel was assumed to be the primary fuel to ensure a conservative estimate. Calculation methods similar to those described for Marine Outboard Engines were used to obtain emissions estimates for diesel engines.

Emissions = HR/YR×EF×ENG

Where:

Emissions = surface craft emissions HR/YR = hours per year EF = emission factor for specific engine type ENG = number of engines

Diesel engine emission factors were multiplied by the annual hours of operation to calculate the pollutant emissions per year.

D.2 AIR ACTIVITIES EMISSIONS

Fleet training and Naval Air Systems Command testing consists of the activities of various aircraft, including the F/A-18, P-8, SH-60B, MH-53, MH-60S, and Lear jet. Research Development Testing & Evaluation air activities consist of various aircraft, including the 1UH-1N, SH-60B, MH-53, MH-60S, and Cessna-172. Aircraft activities of concern are those that occur from ground level up to 3,000 feet (ft.) above ground level (AGL). The 3,000 ft. AGL ceiling was assumed to be the atmospheric mixing height above which any pollutant generated would not contribute to increased pollutant concentrations at ground level (known as the mixing zone). All criteria pollutant emissions from aircraft generated above 3,000 ft. AGL are excluded from analysis of compliance with National Ambient Air Quality Standards. The pollutant emission rate is a function of the aircraft are calculated by knowing the specific engine pollutant emission factors for each mode of operation.

For this Supplemental Environmental Impact Statement (SEIS)/Overseas EIS (OEIS), emission factors for most military engines were obtained from Navy's Aircraft Environmental Support Office memoranda and previous Navy EIS/OEIS documentation (primarily citing the Federal Aviation Administration's Emissions and Dispersion Modeling System model). For those aircraft for which engine data were unavailable, an applicable surrogate was used. Pollutant emissions for each aircraft/organization were calculated by applying the equation below.

Where:

Emissions = aircraft emissions (pounds [lb.]) (for EF in lb./1,000 gallons [gal.] fuel) TIM = time-in-mode at a specified power setting (hours [hr.]/operation). FF = fuel flow at a specified power setting (gal./hr./engine) EF = emission factor for specific engine type and power setting (lb./1,000 gal. of fuel used) ENG = number of engines on aircraft CF = conversion factor (0.001)

D.3 ORDNANCE AND MUNITIONS EMISSIONS

Available emissions factors (AP-42, *Compilation of Air Pollutant Emission Factors*) were used. These factors were then multiplied by the net weight of the explosive and the number of items that were used per year. This calculation provides estimates of annual emissions.

Where:

Emissions = ordnance emissions EXP/YR = explosives, propellants, and pyrotechnics used per year EF = emissions factor Net Wt = net weight of explosive

D.4 EMISSIONS ESTIMATES SPREADSHEETS

The following spreadsheets show the emissions calculations for ships, aircraft, and ordnance involved in training and testing activities. These spreadsheets were developed for each range complex and testing area. The spreadsheets show the calculations developed for each alternative analyzed in this SEIS/OEIS.

Table D-1: Summary of Emissions Released within 3 NM of the Coast

Source	Emissions by Air Pollutant (TPY)									
	СО	NOx	VOC	<i>SO</i> _X	PM 10	PM 2.5				
Baseline Emissions	211	482	121	296	103	92				
Alternative 1 Emissions	476	554	169	312	131	119				
Alternative 2 Emissions	479	555	169	312	132	120				

¹Table includes criteria pollutant precursors (e.g., volatile organic compounds). Individual values may not add exactly to total values due to rounding.

Notes: NM = nautical miles, CO = carbon monoxide, NO_X = nitrogen oxides, PM_{2.5} = particulate matter \leq 2.5 microns in diameter, PM₁₀ = particulate matter \leq 10 microns in diameter, SO_X = sulfur oxides, TPY = tons per year, VOC = volatile organic compounds

Vessel Mode	Emissions Factors (lb/hr) Propulsion Engines + Generators											
vessermode	со	NOx	HC	SOx	PM10							
CG-3	61.51	79.58	4.32	77.63	2.79							
DDG-3	60.16	114.52	4.01	88.53	3.64							
FFG-3	32.94	47.16	3	34.92	2.31							
TRB-3	6.47	56.22	1.55	7.40	1.18							
AOE-2	109.76	311.31	10.6	119.99	10.41							
USCG	5.74	57.91	0.88	11.55	0.21							
LHA-1	7.38	43.53	5.53	130.97	26.29							
LHD-2	8.08	47.83	5.77	135.50	28.58							
LPD-2	3.48	21.00	2.58	60.82	12.85							
LCAC	18.32	114.53	3.49	54.61	5.14							
LCU	5.06	15.7	1.27	2.91	0.75							
AAV-2	0.76	6.22	0.82	1.25	0.26							
AAAV												
PC-2	37.36	74.17	6.02	23.42	2.6							
MK V-2	3.86	29.49	0.99	4.73	0.40							
RIB-4	0.34	9.14	0.06	1.44	0.15							
CRRC-5		0.15	12.90									
AE-2	2.61	15.84	1.94	45.83	9.67							
BW-3	111.75	1.60	45.89	0.31	0.08							
SSN	0	0.00	0.00	0	0							
SSGN	0	0.00	0.00	0	0							
T-AGO(LFA)	6.67	39.37	5.00	119.43	23.77							
CG-PARTNER	107.79 103.99	47.10	9.90	21 17.9	2.6 2.5							
DDG-PARTNER SS-PARTNER	2.94	49.90 17.32	9.00 2.20	52.11	2.5 10.46							
LCS	727.98	171.04	2.20	67.28	6.94							
LSD	21.25	334.51	10.84	35.04	2.71							

Table D-2: Vessel Emissions Factors

	E	mission In	dices, lb/1	.,000 lb fue	1	Emissions Factors (lb/hr)							
Aircraft	со	NOx	voc	SOx	РМ	со	NOx	voc	SOx	РМ			
AH-1W	11.21	5.44	0.57	0.40	4.20	9.10	4.42	0.46	0.32	3.41			
AV-8B	7.70	8.60	0.54	0.40	3.80	46.20	51.60	3.24	2.40	22.80			
C-130 F/R/T	2.07	8.16	0.47	0.40	3.97	9.32	36.72	2.12	1.80	17.87			
CH-46	17.04	4.12	2.64	0.40	1.78	20.45	4.94	3.17	0.48	2.14			
CH-53	2.13	8.08	0.15	0.40	2.21	9.51	36.07	0.67	1.79	9.87			
E-2/E-2C	2.54	10.04	0.36	0.40	0.94	5.59	22.09	0.79	0.88	2.07			
EA-18G	0.72	14.75	0.12	0.40	6.56	7.44	152.49	1.24	4.14	67.82			
EA-6B	7.99	5.71	1.09	0.40	12.12	51.06	36.49	6.97	2.56	77.45			
EP-3	2.51	7.73	0.58	0.40	3.97	10.57	32.56	2.44	1.68	16.72			
F-15	3.62	46.72	0.65	0.40	8.15	22.43	289.48	4.03	2.48	50.50			
FA-18A/C	2.44	6.74	0.44	0.40	6.36	16.19	44.73	2.92	2.65	42.20			
FA-18E/F	0.72	14.75	0.12	0.40	6.56	7.44	152.49	1.24	4.14	67.82			
HH-60	6.25	6.40	0.55	0.40	4.20	7.50	7.68	0.66	0.48	5.04			
Learjet	22.38	5.90	4.26	0.40	1.27	23.81	6.28	4.53	0.43	1.35			
MH-60R/S	6.25	6.40	0.55	0.40	4.20	7.50	7.68	0.66	0.48	5.04			
P-3C	2.51	7.73	0.58	0.40	3.97	12.05	37.10	2.78	1.92	19.06			
P-8 MMA	1.24	9.26	0.28	0.40	0.56	4.05	30.21	0.91	1.31	1.83			
S-3	14.10	4.07	1.86	0.40	3.62	32.29	9.32	4.26	0.92	8.29			
S-3B	14.10	4.07	1.86	0.40	3.62	32.29	9.32	4.26	0.92	8.29			
SH-60	6.25	6.40	0.55	0.40	4.20	7.50	7.68	0.66	0.48	5.04			
SH-60B	6.25	6.40	0.55	0.40	4.20	7.50	7.68	0.66	0.48	5.04			
SH-60B/F	6.25	6.40	0.55	0.40	4.20	7.50	7.68	0.66	0.48	5.04			
SH-60F	6.25	6.40	0.55	0.40	4.20	7.50	7.68	0.66	0.48	5.04			
UH-1N	3.34	4.72	0.17	0.40	4.20	1.80	2.55	0.09	0.22	2.27			
A-10	4	8.83	0.4	0.4	2.67	12.104	26.71958	1.2104	1.2104	8.07942			
B-1B	0.84	13.12	0.11	0.4	0.14	5.5776	87.1168	0.7304	2.656	0.9296			
E-2	0.65	10.45	0.16	0.4	3.97	2.8847	46.3771	0.71008	1.7752	17.61886			
E-3	2.07	8.45	0.31	0.4	0.26	67.65588	276.1798	10.13204	13.0736	8.49784			
KC-135	1.34	13.5	0.03	0.4	0.13	30.66992	308.988	0.68664	9.1552	2.97544			
MQ-4C						2.1	38.84	0.66	3.54	0.61			
MV-22	19.74	3.94	3.43	0.40	1.78	22.1088	4.4128	3.8416	0.448	1.9936			

Table D-3: Aircraft Emissions Factors

Ordenana Tuma	Ordnance			Emissio	n Factor (I	b per lb)		Emission Factor (Ib/item)							
Ordnance Type	Ordnance	CO ₂	со	NOx	PM ₁₀	PM _{2.5}	SO2	Lead	CO2	со	NOx	PM ₁₀	PM _{2.5}	SO2	Lead
BOMB	CBU MK20 ROCKEYE									0.00					
	GBU32I JDAM		0.1482							57.06					
	LGTR									0.00					
	MK76		0.085							0.26					
	BDU 48		0.085							0.26					
	MK82 HE		0.3184							61					
	GBU12 - Paveway II		0.3184							61					
	MK82 INERT		0.085							0.26					
	BDU 45		0.085							0.26					
	MK83 HE		0.1482							62					
	GBU 16		0.1482							66					
	MK84		0.1482							140					
	MK83 INERT		0.085							0.26					
OTHER ORD	Туре								· · · · · ·						
	EER/IEER AN/SQQ-110	1.2	0.0044	0.011				0.00004		0.02					
	BLASTING														
	CAP MK11								1.80E-03	3.10E-04	4.50E-05	4.60E-04	2.90E-04		1.30E-04
	Detonator														
	FIRING DEVICE														
	FUSE														
	GRENADE SIMULATOR								4.10E-03	0.0004	5.60E-03	0.12		4.70E-04	1.40E-06
	Grenades	6.30E-01	0.021				1.20E-04			0.00					
	Haversacks	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04		0.42					
	K143 Antipersonnel Mine	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04		0.03					
	M1A2 BANGALORE TORP	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04		0.21					
	M7 BANDOLEER MK57 (Claymore mine)		0.15108												

Table D-4: Ordnance Emissions Factors

0. to	On the second	Emission Factor (Ib per Ib)								Emission Factor (Ib/item)							
Ordnance Type	Ordnance	CO2	со	NO _x	PM ₁₀	PM _{2.5}	SO2	Lead	CO2	со	NOx	PM ₁₀	PM2.5	SO2	Lead		
	M112 DEMO CHARGE								7.90E-01	2.60E-02	7.90E-03	2.60E-02	1.90E-02		1.70E-04		
	M700 BLASTING FUSE		0.149						0.0008	0.0003	0.0002	0.00009	0.00009	0.000002	0		
	Flare, Aircraft																
	Parachute																
	Chaff	0.039	0.021	0.054	0.1	0.092	0.00018						0.000259				
	MK36 M0 DEMO CHARGE	0.038	0.021	0.034	0.1	0.092	0.00018			3.512-05	0.000132	0.000282	0.000233	3.072-07			
	MK75 CHARGE MK84 [86]	_															
	EOD Shaped Charge																
	MK120 NONELEC DET (ft)																
	MK123 NONELEC DET (ft)																
	MK138 DEMO CHG ASSEMBLY	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04									
	MK140 FLEXIBLE CHARGE														-		
	PBXN-109 TEST Det Cord																
	SIGNAL MK 18(G950) SMOKE																
	C4 1.25 LB	6.30E-01	0.021		2.10E-02					0.02625	0.007875		0.01875	0.00015			
	C45LB	6.30E-01	0.021		2.10E-02			1.40E-04		0.105	0.0315	0.105	0.075	0.0006			
	C4 15 LB	6.30E-01	0.021		2.10E-02			1.40E-04		0.315	0.0945	0.315	0.225	0.0018	0.0055		
	C4 40 LB C4 100 LB	6.30E-01 6.30E-01	0.021		2.10E-02 2.10E-02			1.40E-04		0.84	0.252	0.84	0.6	0.0048	0.0056		

Table D-4: Ordnance Emissions Factors (continued)

Table D-4	: Ordnance	Emissions	Factors	(continued)	
	· Orananec	Ennosiono	1 400010	(continueu)	

A			10. Tr	Emissio	n Factor (I	b per lb)		Emission Factor (Ib/item)							
Ordnance Type	Ordnance	CO2	со	NOx	PM ₁₀	PM _{2.5}	SO2	Lead	CO2	со	NOx	PM ₁₀	PM _{2.5}	SO2	Lead
	C4 300 LB	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04		0.021	0.0063	0.021	0.015	0.00012	0.00014
	C4 500 LB	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04		0.021	0.0063	0.021	0.015	0.00012	0.00014
	TNT Blocks 0.5 lbd		0.398												
	DEMO SHEET														
	DETONATING CORD														
	DEMO CHARGE														
	SIMULATED ARTILLERY	6.30E-01	0.021	6.30E-03	2.10E-02	1.50E-02	1.20E-04	1.40E-04		0.002888	0.000866	0.002888	0.002063	1.65E-05	
PROJECTILE (LARGE)	155MM HE	6.51	2.35E+01	1.43E+00	0.496	0.2418		2.26E-03							
	155MM ILL								6.00	8.63	0.087	3.44	0.13	0.002.7	0.029
	5"/54 Inert	2.60E-04	3.50E-04	3.60E-05	2.60E-05	2.30E-05		6.70E-04		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5"/54	5"/54 BLP	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06							
	5"/54 HCVT+32 (EOD)	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		0.16	0	0.0096	0.00744	0	0.000048
	5"/54 HECVT	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		0.1280	0.1600	0.0096	0.0074	î	
	5"/54 HEPD	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		0.16	0	0.0096	0.00744	0	0.000048
	5"/54 HEVT	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
	5"/54 ILL	1.50E-02	1.40E-02	3.60E-04	9.20E-04	7.60E-04		1.30E-06		1.12E-01	2.88E-03	7.36E-03	6.08E-03	0.00E+00	1.04E-05
	5"54/54 VTNF	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
5"/62	5"/62	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
	5%62 HE-MFF	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
	5"/62 HECVT	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
	5"/62 HEET	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
	5762 KEET	1.60E-02	2.00E-02		1.20E-03	9.30E-04		6.00E-06		1.60E-01	0.00E+00	9.60E-03	7.44E-03	0.00E+00	4.80E-05
60mm	60MM								0.4	0.06	0.005	0.062	0.03		0.0004
	60MM WP								0.13	0.154	0.0124	0.221	0.494	0.00014	0.001
76mm	76MM BLP	1.44E-02	1.80E-02		1.08E-03	8.37E-04		5.40E-06							
	81MM HE								1.48	0.14	0.016	0.173	0.096		0.0007
	81MM ILL								1.48	0.14	0.016	0.173	0.096		0.0007
CAS	GALL 17														
PROJECTILE (SMALL)	20MM	0.19	0.38	0.0049	0.0075	0.0053		0.00026	0.016	0.033	0.00043	0.00066	0.00046		0.000023

				Emissio	n Factor (I	b per lb)					Emissi	on Factor	(lb/item)		
Ordnance Type	Ordnance	CO ₂	со	NOx	PM ₁₀	PM _{2.5}	SO ₂	Lead	CO ₂	со	NOx	PM ₁₀	PM2.5	SO ₂	Lead
	25MM								0.11	0.019	0.00067	0.0027	0.0017		0.000055
	30MM EFV Main Gun	0.14	0.028	0.0063	0.13	0.08		0.00037		7.28E-03	1.64E-03	3.38E-02	2.08E-02	0.00E+00	9.62E-05
	40MM	5.70E-01	6.00E-02	1.30E-02	1.10E-01	5.60E-02		6.20E-04	4.90E-02	4.00E-03	1.30E-03	9.50E-03	5.10E-03	0.00E+00	8.00E-05
	40MM HE	5.70E-01	6.00E-02	1.30E-02	1.10E-01	5.60E-02		6.20E-04	4.90E-02	4.00E-03	1.30E-03	9.50E-03	5.10E-03	0.00E+00	8.00E-05
	40MM ILL	7.20E-02	2.40E-02	6.50E-03	1.40E-01	1.20E-01	0.00019	7.90E-04	0.015	0.005	0.0014	0.029	0.025	0.00004	1.60E-04
	40MM PRACTICE	2.60E-01	2.50E-01	9.50E-03	1.40E-02	1.10E-02		1.10E-03	2.70E-03	2.60E-03	9.70E-05	1.40E-04	1.20E-04	0.00E+00	1.10E-05
	.45 CAL	2.80E-01	3.40E-01	1.00E-02	4.70E-02	4.00E-02		1.60E-02	2.20E-04	2.60E-04	8.10E-06	3.70E-05	3.10E-05		1.20E-05
	5.56	2.40E-01	4.40E-01	1.30E-02	9.20E-03	7.60E-03		3.20E-03	8.70E-04	1.60E-03	8.50E-05	3.90E-05	2.80E-05		5.10E-06
	5.56 BLANK	2.60E-01	3.20E-01	2.30E-02	7.80E-03	6.80E-03	0.00011	1.10E-03	2.30E-04	2.80E-04	2.00E-05	6.90E-06	6.00E-06	9.80E-09	9.70E-07
	.50CAL	1.50E-01	3.30E-01	3.60E-02	9.60E-03	5.60E-03		4.00E-04	5.10E-03	1.10E-02	1.20E-03	3.10E-04	1.90E-04		1.30E-05
	.50CAL	1.50E-01	3.30E-01	3.60E-02	9.60E-03	5.60E-03		4.00E-04	5.10E-03	1.10E-02	1.20E-03	3.10E-04	1.90E-04		1.30E-05
	.50CAL BLANK	3.10E-01	2.70E-01	4.10E-03	1.40E-02	1.30E-02		1.70E-03	5.10E-03	1.10E-02	1.20E-03	3.10E-04	1.90E-04		1.30E-05
	7.62	3.50E-01	2.50E-01	1.60E-02	6.10E-03	5.60E-03	0.00013	9.70E-04	1.20E-03	2.30E-03	9.70E-05	5.10E-05	3.80E-05		4.90E-06
	7.62	3.50E-01	2.50E-01	1.60E-02	6.10E-03	5.60E-03	0.00013	9.70E-04	1.20E-03	2.30E-03	9.70E-05	5.10E-05	3.80E-05		4.90E-06
	9MM								2.00E-04	3.10E-04	1.50E-05	2.40E-05	2.00E-05	8.20E-08	6.80E-06
	.300 WIN MAG								1.90E-03	3.00E-03	1.50E-05	9.40E-05	7.30E-05		1.80E-05
	.223 Rifle Rounds									8.00E-05					1.90E-06
	.22 Magnum							()	7.50E-05	8.00E-05	5.00E-06	3.40E-06			1.90E-06
	.22 Long Rifle								7.50E-05	8.00E-05	5.00E-06	3.40E-06	2.60E-06		1.90E-06
	12 Guage Shotgun	5.10E-03			3.10E-04			1.30E-05							
MINE SHAPE	M18A1	1.6	2.00E-02	1.80E-02	4.90E-02	2.60E-02		5.70E-05							
	MK76														
MISSILE	AGM-114B														
	AGM-65														
	Maverick					A 1005									
	AGM-84	0.4		0.06	0.1025	0.1025			140	30.62356	35.574	61.795	61.795		
	AIM-120 AIM-7								<u> </u>				<u> </u>		—
	AIM-7 AIM-9		-	-			-		-						
	BGM-71E								<u> </u>						<u> </u>
	TOW-A														
	GBU-9														

Table D-4: Ordnance Emissions Factors (continued)

Ordnamaa Tuma	Ordnones		Emission Factor (Ib per Ib)								Emission Factor (Ib/item)						
Ordnance Type	Ordnance	CO2	со	NOx	PM ₁₀	PM _{2.5}	SO2	Lead	CO2	со	NOx	PM ₁₀	PM _{2.5}	SO ₂	Lead		
	AGM-88 HARM																
	NSM																
	JSOW																
	Japanese Missile Tests																
	Tactical Tomahawk																
	Seasparrow Missile																
	SLAM ER																
	SM2 or equivalent											-					
ROCKET	2.75" RKT	4.50E-01	5.60E-02	7.10E-03	6.10E-02	3.80E-02		1.20E-03									
	2.75" RKT HE	3.00E-01	1.70E-01	2.40E-03	1.00E-01	5.30E-02		2.60E-04	5.5	0.93	0.0056	0.4	0.29		0.07		
-	2.75" RKT I	4.50E-01	5.60E-02	7.10E-03	6.10E-02	3.80E-02		1.20E-03									
PYROTECHNICS	MK58 Marine Location Marker	1	1.30E-02	1.20E-02	3.20E-02	1.70E-02	6.10E-05	3.80E-05									
	Smoke Grenade AN- M8								3.30E-02	4.60E-02	1.00E-03	6.80E-01	1.10E-01	1.20E-04	4.70E-04		

Table D-4: Ordnance Emissions Factors (continued)

Table D-5: Vessel Emissions – No Action Alternative

				OPERATION	IAL IN	Forma	TION -	VESSE	LS	_	_		_		EMISS	NSN	/EAR (I	<u>ь) вү ј</u>	URISDI	CTION							EMISS	GIONS	YEAR	(Ib) BY	JURIS	DICTIC	DN		_			GHG Er	nissions	(Ib)	
	្ល		Shi	o / Yessel / Boat		_	nge Ti n			ribution	(hr)		Stat		nm offs					ers of U	S (3-12	nm)			In	t Water	rs (> 12 r						Emissio	15		Ē					
Type Training	Training Ops	Number	ship Type	Type	Participatio	PerShip	Time at Each Power	Total	D-3 im from shore	3-12 im from shore	> 12 m from shore	со	NO.	нс	so.	PMu	P M 2.5	со	NO.	нс	so.	PM	PM2.5	со	NO.	нс	so.	PMu	PM2.5	co	NO.	нс	so.	PM	PM2	Fuel Row (GI	Annual Fuel Consumptio n (gal)	CO2	N ₂ O	сн,	CO2-7
ANTI-AIR WARFARE													· · · · · ·																						-				-		
Air Combat Maneuver	4800																																								
Air Defense Exercise	100																																_								
Air Intercept Control	4800																																		_						
Gunnery Exercise, A-A (Medium Caliber)	36																																								
Missile Exercise, A-A	18																																		_						
Gunnery Exercise, S-A (Large Caliber)	5	10	FFG	Guided Missile Frigate	2.00	2.0	100%	20.0	0.0	0.0	20.0	0	0	0	0	0	0	0	0	0	0	0	0	659	943	60	698	46	42	653	943	60	698	46	42	79	1,580	33,265	1	1	33,620
Gunnery Exercise, S-A (Medium Caliber)	12	24	FFG	Guided Missile Frigate	2.00	2.0	100%	48.0	0.0	0.0	48.0	0	0	0	0	0	0	0	0	0	0	0	0	1,581	2,264	14.4	1,676	111	100	1,581	2,264	14.4	1,676	111	100	79	3,792	79,837	3	2	80,687
Missile Exercise, S-A	15	30	FFG	Guided Missile Frigate	2.00	2.0	100%	60.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	0	0	0	0	0
STRIKE WARFARE						_														I																					
Bombing Exercise, A-G	2300																																								
Missile Exercise, A-G	85																																								
Gunnery Exercise, A-G	96																																								
AMPHIBIOUS WARFARE																																									
Fire Support Exercise - Land-Based target	10	10	CG	Cruiser	1	8.0	100%	80.00	80.0	0.0	0.0	4,921	6,366	346	6,210	223	201	0	0	0	0	0	0	0	0	0	0	0	0	4,921	6,366	346	6,210	22	201	184	14,720	309,915	10	э	313,215
Amphibious Rehearsal, No Landing - Marine Air Ground Task Force	12	48	LSD	Cruiser	4	24.0	100%	1152.0	1152.0	0.0	0.0	24,480	385,356	12,488	40,366	3,122	2,810	0	0	0	0	0	0	0	0	0	0	0	0	24,480	385,35	6 12,48	8 40,36	6 3,12	2 2,810	184	1,461,888	30,778,590	998	870	31,106,382
Manne An Ground Fask Force	12	48	LHALHE	Amphib. Assault Ship - T	4	24.0	100%	1152.0	1152.0	0.0	0.0	9,308	55,100	6,647	156,036	32,924	29,632	0	0	0	0	0	0	0	0	0	0	0	0	9,308	55,100	6,64	7 156,03	6 32,3	24 29,63	2 373	1,461,888	30,778,590	998	870	31,106,382
		48	LPD	Amphibious Transport D) 4	24.0	100%	1152.0	1152.0	0.0	0.0	4,009	24,192	2,972	70,065	14,803	13,323	0	0	0	0	0	0	0	0	0	0	0	0	4,009	24,192	2,97	2 70,06	5 14,80	3 13,32	373	1,461,888	30,778,530	998	870	31,106,382
Amphibious Assault - Marine Air Ground Task Force	6	6	CG	Cruiser	1	8.0	100%	48.0	48.0	0.0	0.0	2,952	3,820	207	3,726	134	121	0	0	0	0	0	0	0	0	0	0	0	0	2,952	3,820	207	3,72	5 134	121	184	60,912	1,282,441	42	36	1,296,099
		6		Amphib. Assault Ship - T		8.0	100%	48.0	48.0	0.0	0.0	354	2,089	265	6,287	1,262	1,136	0	0	0	0	0	0	0	0	0	0	0	0	354	2,089					373		1,282,441	42	36	1,296,099
		12		Amphibious Transport D Guided Missile Frigate	2	8.0 8.0	100%	96.0 96.0	96.0 96.0	0.0	0.0	334	2,016	248 288	5,839	1,234	1,110	0	0	0	0	0	0	0	0	0	0	0	0	334	2,016					373		2,564,882		72	2,592,198
		12	FFG	Guided Missile Frigate	2	8.0	100%	36.0	36.0	0.0	0.0	3,162	4,527	200	3,352	222	200	U	U	U	U	U	U	U	U	0	0	0	0	3,162	4,527	200	3,35,	2 222	200	79	121,824	2,564,882	83	72	2,532,136
Amphibious Raid - Special Purpose Marine Air Ground Task Force	6	6	LHA	Amphib. Assault Ship - T	1	6.0	100%	36.0	36.0	0.0	0.0	266	1,567	199	4,715	946	852	0	0	0	0	0	0	0	0	0	0	0	0	266	1,567	193	4,715	: 946	852	373	45,684	961,831	31	27	972,074
	Ů	12	LPD	Amphibious Transport D	2	2.5	100%	30.0	30.0	0.0	0.0	104	630	77	1,825	386	347	0	0	0	0	0	0	0	0	0	0	0	0	104	630	77	1,825	38	347	373	38,070	801,526	26	23	810,062
Non-Combatant Evacuation Operation	5	5	LHA	Amphib. Assault Ship - T	1	80.0	100%	400.0	400.0	0.0	0.0	2,952	17,412	2,212	52,388	10,516	9,464	0	0	0	0	0	0	0	0	0	0	0	0	2,952	17,412	2,21	2 52,38	8 10,5	6 3,46	373	149,200	3,141,257	102	89	3,174,711
		10	LPD	Amphibious Transport D		80.0	100%	800.0		0.0	0.0	2,784	16,800	2,064	48,656	10,280	9,252	0	0	0	0	0	0	0	0	0	0	0	0	2,784	16,800	2,06	4 48,65	6 10,28	0 9,25;	373	298,400	6,282,514	204	178	6,349,422
		5	LCU	Landing Craft Utility	1	80.0	100%	400.0	400.0	0.0	0.0	7,328	45,812	1,396	21,844	2,056	1,850	0	0	0	0	0	0	0	0	0	0	0	0	7,328	45,812	1,39	6 21,84	\$ 2,05	6 1,850	611	244,400	5,145,598	167	145	5,200,398
Humanitarian Assistance/ Disaster Relief Operations	5	5	LHA	Amphib. Assault Ship - T	1	8.0	100%	40.0	40.0	0.0	0.0	295	1,741	221	5,239	1,052	946	0	0	0	0	0	0	0	0	0	0	0	0	295	1,741	221	5,23) 1,05	2 946	373	50,760	1,068,701	35	30	1,080,083
	Ť	10		Amphibious Transport D		8.0	100%	80.0	80.0	0.0	0.0	278	1,680	206	4,866	1,028	925	0	0	0	0	0	0	0	0	0	0	0	0	278	1,680					373		2,137,402	69	60	2,160,165
		5	LCAC	Landing Craft Air Cushid	(1	8.0	100%	40.0	40.0	0.0	0.0	733	4,581	140	2,184	206	185	0	0	0	0	0	0	0	0	0	0	0	0	733	4,581	140	2,184	. 206	185	611	50,760	1,068,701	35	30	1,080,083
Unmanned Aerial Vehicle - Intelligence, Surveillance, and Reconaissance	100																																								

Table D-5: Vessel Emissions – No Action Alternative (continued)

ANTI-SURFACE WARFARE																																									
Gunnery Exercise, A-S(Small Caliber) -																																									
Ship	242																																								
Gunnery Exercise, A-S (Medium Caliber) -																																				I —					
Ship	295																																								
Missile Exercise (A-S) - Rocket	3																																								
																																				L					
Missile Exercise (A-S)	20																																								
1 T N	600							-																															_	-	
Laser Targeting	600																																								
Bombing Exercise (A-S)	37																																			 					
Torpedo Exercise (Submarine to Surface)	5																																								
Missile Exercise (S-S)	12	24	FFG	Guided Missile Frigate	2.00	2.0	100%	48.0	0.0	0.0	48.0	0	0	0	0	0	0	0	0	0	0	0	0	1,581	2,264	144	1,676	111	100	1,581	2,264	14.4	1,676	111	100	79	3,792	79,837	3	2	80,687
Gunner Exercise (Surface-to-Surface) Ship - Large-caliber	140	30.8	CG	Cruiser	0.22	2.5	100%	77.00	0.0	21.6	55.4	0	0	0	0	0	0	1,326	1,716	93	1,674	60	54	3,410	4,412	240	4,304	155	139	4,736	6,128	333	5,978	215	193	184	14,168	298,293	10	8	301,470
omp barge camper	140	63	DDG		0.45	25	100%	157.5	0.0	44.1	113.4	0	0	0	0	0	0	2,653	5.050	177	3 904	161	14.4	6.822	12 987	455	10,039	413	371	9.475	18.037	632	13.943	573	516	187	29,453	620,093	20	18	626,637
				Guided Missile Frigate							37.8	0	0	0	0	0	0		693	44	513	34		1,245		400 113		87			2,476		1,833	121	109	79			3		88,251
				US Coast Guard		2.5	100%			11.8		ŏ	0	0	0	0	0	68	681	10	136	2	2		1,751	27	349	6	6	241	2,432	37	485	3	8	66			2	2	58,383
																	-					-	_					-						-		1					
Gunner Exercise (Sulface-to-Sulface)				Caulant	0.00	0.5	100%	EE OC	0.0	15.4	39.6	0	0	0	0	0	0	947	1,226	67	1,196	43	39	2,436	3 154	174	3,074	110	99	3,383	4,377	238	4,270	153	138	184	10,120	213,066	7	6	215,336
Ship - Medium-caliber	100			Cruiser								0	U	v	U	0	U													•	·				100	104	10,120	213,066	· · ·	0	215,336
		45					100%		0.0			0	0	0	0	0	0	1,895			2,789	115					7,171										21,038		14		447,641
		15		Guided Missile Frigate						10.5	27.0	0	0	0	0	0	0	346	495	32	367	24	22	889	1,273	81	943	62	56	1,235	1,769	113	1,310	87	78	79	2,963		2	2	63,037
		1		Amphibious Transport [-	-	0	0	-	0	2	15	2	43	9	8	6	38	5	109	23	21	9	53	6	152	32	29	373		19,633	1	1	19,842
		12	USCG	US Coast Guard	0.12	2.5	100%	30.0	0.0	8.4	21.6	0	0	0	0	0	0	48	486	7	97	2	2	124	1,251	19	249	5	4	172	1,737	26	347	ь	6	66	1,980	41,687	1	1	42,131
Sinking Exercise (SINKEX)	2	10	FFG	Guided Missile Frigate	5.00	16.0	100%	160.0	0.0	0.0	160.0	0	0	0	0	0	0	0	0	0	0	0	0	5,270	7.546	480	5,587	370	333	5,270	7.546	480	5,587	370	333	73	12,640	266,123	9	8	268,957
	-													-	-	-	-	-	-	-	-		-	-,															-		
Gunnery Exercise (S-S) Boat - Medium-		50	EEO.	Guided Missile Frigate	E 00	2.0	100%	150.0	0.0	0.0	150.0	0	0	0	0	0	0	0	0	0	0	0	0	4 9 4 1	7.074	450	5,238	247	949	4 9 4 1	7,074	450	5,238	347	312	79	11,850	249,490	8	7	252,147
caliber	10		ma	Guidea Missile Engate	0.00	3.0	1007.	130.0	0.0	0.0	130.0				0	0	0					•	•	4,041	1,014	400	0,200	341	512	4,341	1,014	430	0,200	341	512	1.0	1,000	243,430		'	202,141
Gunnery Exercise (S-S) Small-caliber				Combat Rubber Raidin			40.08/		0.0	0.0		0				~									~~~	3.096						3.036				<u> </u>	720	15,153			15,320
Gunnery Exercise (S-S) Small-Callber	40	00	CRRC	Compat Rupper Raidin	9 2	3.0	1007.	240.0	0.0	0.0	240.0		0	0	0	0	0	0	0	0	0	0	0	0	36	3,036	0	0	0	0	36	3,036	U	0	0	3	720	10,103	0	0	15,320
Maritime Security Operations (MSO)	40	40	FEG	Guided Missile Frigate	1	8.0	100%	320.0	0.0	0.0	320.0	0	0	0	0	0	0	0	0	0	0	0	0	10,541	15.091	360	11.174	739	665	10.541	15.091	360	11.174	739	665	79	25,280	532,245	17	15	537,914
Manalic occardy operations (Moo)	40	40		Rigid Hulled Inflatable B		8.0	100%	320.0		0.0	320.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0		2924.8		460.8	48.0	43	103	2,325	19	461	48	43	14	4,480		3	3	95,326
				Combat Rubber Raidin			100%			0.0	320.0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	48	4,128	0	0	0	3	960	20,212	1	1	20,427
					-																																				
ANTI-SUBMARINE WARFARE																																									
Tracking Exercise-Helo	62																																								
Torpedo Exercise-Helo	4																																								
Teaching Eventian Maritima Potent					_	_		_	_																										_	I	<u> </u>	<u> </u>			
Tracking Exercise-Maritime Patrol Advanced Extended Echo Ranging																							I													1					
Sonobuoys	11																																								
Tracking Exercise -Maritime Patrol Aircraft	34																																								
						_																													_	I	<u> </u>	<u> </u>	_		
Torpedo Exercise-Maritime Patrol Aircraft	4																																								
Tanaking Europeing - Study	12.2	30	FEG	Guided Missile Frigate	0.23	20	10.0%	60.7	0.0	30.4	30.4	0	0	0	0	0	0	1000	1,432	91	1,060	70	63	1,000	1432	91	1,060	70	63	2,000	2,864	182	2,120	140	126	79	4,797	100,994	3	3	102,069
Tracking Exercise -Surface	132	30		cacaded Missile i rigate		2.0	100%			30.4	30.4		0	0	0	0	0		1,432	371	8,180	336			10.582	371	8,180	336	0	11,118	2,064	741	16,360	673	303	187	34,558		24	21	735,324
		10	LCS			2.0	100%			32.4	32.4	0	0	0	0	0	0	7,207	1,633	28	666	63	62	7,207	1,633	28	666	63	0	14,414	3,387	56	1,332	137	62	66		27,513	1	1	27,806
Torpedo Exercise-Surface	3	3	FFG	Guided Missile Frigate			100%		0.0	3.0	3.0	0	0	0	0	0	0	33	141	3	105	7	6	33	141	3	105	7	6	198	283	18	210	14	12	79		3,380	0	0	10,086
Tracking Exercise- Submarine	12																																								
	I																																			1					
Torpedo Exercise - Submarine	10																																		-		<u> </u>				

Table D-5: Vessel Emissions – No Action Alternative (continued)

MAJOR TRAINING EVENTS																																								
Joint Expeditionary Exercise	1	1.0	CVN Nuclear Carrier (No emis	1	80.0	100%	80.0	0.0	80.0	0.0																														
	·	1.0	CG	1	80.0	100%	80.0	0.0	80.0	0.0	0	0	0	0	0	0	4.921	6,366	346	6,210	223	201	0	0	0	0	0	0	4.921	6,366	346	6,210	223	201	184	14,720	309,915	10	9	313,215
		2.0	FFG	2	80.0	100%	160.0	0.0	160.0	0.0	0	0	0	0	0	0	5,270	7,546	480	5,587	370	333	0	0	0	0	0	0	5,270	7,546	480	5,587	370	333	79	12,640	266,123		8	268,957
		5.0	DDG	5	80.0	100%	400.0	0.0	400.0	0.0	0	0	0	0	0	0	24.064	45.808	1.604	35,412	1.456	1,310	0	0	0	0	0	0	24.064	45,808	1.604	35,412	1,456	1,310	187	74,800	1,574,839	51	45	1,591,611
			LHD/LHA	1	80.0	100%	80.0	0.0	80.0	0.0	1 ů	0	0	0	0	0	530	3,482	442	10.478	2,103	1.893	ů ř	0	0	0	0	0	530	3,482	442	10,478	2,103	1,893	373	29,840	628,251	20	18	634,942
		2.0	LSD	2	80.0	100%	160.0	0.0	160.0	0.0	ň	0	0	0	0	0	3,400	53.522	1.734	5,606	434	390	0	0	0	0	0	0	3,400	53,522	1.734	5,606	434	390	373	59,680	1,256,503	41	36	1,263,884
		1.0	LPD	1	80.0	100%	80.0	0.0	80.0	0.0	ň	0	0	0	0	0	278	1680	206	4.866	1.028	925	0	0	0	0	0	0	278	1.680	206	4.866	1.028	925	373	23,840	628,251	20	18	634,942
		1.0	TAOE	-i-	80.0	100%	80.0	0.0	80.0	0.0	ň	0	0	0	0	0	8 781	24,305	848	3,533	833	750	0	0	0	0	0	0	8 781	24,305	848	3,533	833	750	1.865		3,141,257	102	89	3,174,711
		1.0	SSN Nuclear Carrier (No emic	- i -	80.0	100%	80.0	0.0	80.0	0.0	· ·						4,141			*,***			•	•				•	4,141					100			0,101,001	10.6		*,*,
		1.0	SSGN Nuclear Carrier (No emic	- 1	80.0	100%	80.0	0.0	80.0	0.0																														
			T-AGO(LFA)	2	80.0	100%	160.0	0.0	160.0	0.0		0	0	0	0	0	1067	6 2 9 9	800	19 10 9	3.803	3.423	0	0	0	0	0	0	1067	6 2 9 9	800	19 10 9	3 803	3,423	1.865	238,400	6.282.514	204	178	6.349.422
			CG-PARTNER	1	80.0	100%	80.0	0.0	80.0	0.0	l ő	0	0	0	0	0	8.603	3,768	732	1680	208	187	0	0	0	0	0	0	2602	3,768	732	1680	208	187	184	14,720	303,315	10	3	313,215
			DDG-PARTNER	2	80.0	100%	160.0	0.0	160.0	0.0	- ů	0	0	0	0	0	46 6 20	7 994	1440	2.864	400	360	0	0	0	0	0	0	16 6 20	7 994	1440	2.864	400	360	187	23,320	623,336	20	10	636,644
			SS-PARTNER	- 1	80.0	100%	80.0	0.0	80.0	0.0	- °	0	0	0	0	0	0,000	1,004	176	4 169	837	753	0	0	0	0	0	0	0,000	1,004	176	4 16 9	837	753	373	23,320	628,251	20	18	634,942
			LCAC	5	80.0	100%	400.0	0.0	400.0	0.0	l ő	0	0	0	0	0	7 3 2 9	45.819	1396	4,103	2.056	1,850	0	0	0	0	0	0	7 3 9 9	45.819	1396	4,103	2,056	1,850	611	507,600	10,687,010	347	302	10.800.827
		2.0	LCU	2	80.0	100%	400.0	0.0	400.0	0.0	l ő	0	0	0	0	0	1,020	40,012	558	8.738	822	740	0	0	0	0	0	0	1,020	40,012	558	8,738	2,056	740	611	97,760	2,058,239	67	58	2,080,159
		19.0	CBBC	19	00.0	1007.	1500.0	0.0	1520.0	0.0	, °	0	0	0	0	0	2,001	226	49.640	0,130	022	0	0	0	0	0	0	0	2,001	226	49.640	0,130	022	140	011	4,560	36,006	01	30	97,029
		2.0	RHIB	- 10	00.0	100%	1020.0	0.0	160.0	0.0	- °	0	0	0	0	0	54	4460	10,010	230	24	22	0	0	0	0	0	0	54	1.462	10,010	230	24		373	59,680	1,256,503	41	36	1,269,884
			AAV	14	80.0	100%	1120.0	0.0	1120.0	0.0	, o	0	0	0	0	0	851	6,966	10	1.400	24	262	0	0	0	0	0	0	851	6,966	918	1.400	24	22	010	3,360	70,741	41	2	71,495
		14.0	007	14	00.0	1007.	1120.0	0.0	1120.0	0.0	l °				0	0	051	0,300	310	1,400	201	202		0	0	0			001	0,300	310	1,400	201	202		3,360	10,141	2	٤	1,435
Joint Multi-Strike Group Exercise	1	3.0	CVN	3	80.0	100%	240.0	0.0	0.0	240.0					-																									
	· ·	3.0	CG	3	80.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	14,762	19.099	1.037	18.631	670	603	14,762	19.099	1.037	18.631	670	603	184	44,160	929,745	30	26	939,646
			FFG	3	80.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	7,906	11,318	720	8,381	554	499	7,906	11,318	720	8,381	554	499	79	18,960	399,184	13	11	403,435
		12.0	DDG	12	80.0	100%	960.0	0.0	0.0	960.0	0	0	0	0	0	0	0	0	0	0	0	0	57,754	109,939	3,850	84,989	3,494	3,145	57,754	109,939	3,850	84,989	3,494	3,145	187	179,520	3,779,614	123	107	3,819,867
		3.0	TAOE	3	80.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	26,342	74,714	2,544	28,798	2,498	2,249	26,342	74,714	2,544	28,798	2,498	2,249	1,865		9,423,770	306	266	9,524,134
		5.0	SSN	5	80.0	100%	400.0	0.0	0.0	400.0																														
			T-AGO(LFA)	2	80.0	100%	160.0	0.0	0.0	160.0	0	0	0	0	0	0	0	0	0	0	0	0	1,067	6,299	800	19,109	3,803	3,423	1,067	6,299	800	19,109	3,803	3,423	1,865	298,400	6,282,514	204	178	6,349,422
			SS-PARTNÉR	1	80.0	100%	80.0	0.0	0.0	80.0	0	0	0	0	0	0	0	0	0	0	0	0	235	1,386	176	4,169	837	753	235	1,386	176	4,169	837	753	373	29,840	628,251	20	18	634,942
Marine Air Ground Task Force Exercise (Amphibious)		4.0		1	80.0	100%	320.0	320.0	0.0	0.0	2,362	13,930	1,770	41,910	8,413	7,572	0	0	0	0	0	0	0	0	0	0	0	0	2,362	13,930	1,770	41,910	8,413	7,572	373	119,360	2,513,005	82	71	2,539,769
(rimprine as)	•	4.0	LSD	1	80.0	100%	320.0	320.0	0.0	0.0	2,586	15,306	1,846	43,360	9,146	8,231	0	0	0	0	0	0	0	0	0	0	0	0	2 586	15.306	1.846	43,360	9,146	8,231	373	119,360	2.513.005	82	71	2,539,769
			LPD	1	80.0	100%				0.0	1,114	6,720		19,462		3,701	0	0	0	0	0	0	0	0	0	0	0	0	1,114	6,720	826	19,462			373		2,513,005	82	71	2,533,763
	-	4.0	EFD	•	00.0	10071	020.0	020.0	0.0	0.0	1,114	0,120	020	10,402	4,112	0,101	· ·	· ·	· ·	•	•		- ×	v	· ·	•	· ·	· ·	1,114	0,120	020	10,402	4,112	0,101	0.0	110,000	2,010,000	~~		2,000,100
Special Purpose Marine Air Ground Task		20	LHA Amphib. Assault Ship - T	1	80.0	100%	160.0	52.8	52.8	54.4	390	2,298	292	6,915	1.388	1,249	390	2,298	292	6,915	1,388	1,243	401	2,368	301	7,125	1.430	1,287	1,181	6,365	885	20,955	4,206	3 786	373	59,680	1.256.503	41	36	1,269,884
Force Exercise	2		·																			-															4			
		4.0	LPD Amphibious Transport D	2	80.0	100%	320.0	105.6	105.6	108.8	367	2,218	272	6,423	1,357	1,221	367	2,218	272	6,423	1,357	1,221	379	2,285	281	6,617	1,398	1,258	1,114	6,720	826	19,462	4,112	3,701	373	119,360	2,513,005	82	71	2,539,769
ELECTRONIC WARFARE																																								
Electronic Waifare Operations	480	480	FFG Guided Missile Frigate	1	4	100%	1920.0	0.0	0.0	1920.0	0	0	0	0	0	0	0	0	0	0	0	0	63,245	90,547	5,760	67,046	4,435	3,992	63,245	30,547	5,760	67,046	4,435	3,992	79	151,680	3,193,471	104	90	3,227,481
Flare Exercise	3200																																							
Chaff Exercise - Ship	40	40	FFG Guided Missile Frigate	1	4	100%	160.0	0.0	0.0	160.0	0	0	0	0	0	0	0	0	0	0	0	0	5,270	7,546	480	5,587	370	333	5,270	7,546	480	5,587	370	333	79	12,640	266,123	9	8	268,957
Chaff Exercise - Aircraft	3200						-																																-	

Table D-5: Vessel Emissions – No Action Alternative (continued)

INE WARFARE																																								
Civilian Port Defense	1	1	RHIB	1	24.0	100%	24.0	24.0	0.0	0.0	8.2	219.4	1.4	34.6	3.6	3	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	8	219	1	35	4	3	14	336	7,074	0	0	7,149
Mine Laying - Aircraft	4																																							
Mine Neutralization - Explosive		60	DUID	3	10.0	10.02/	700.0	720.0	0.0	0.0	044.0	6500.0	43.2	1036.8	108.0	97	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		245	6,581	42	1,037	108	97	14	10,080	212,224	7	6	214,485
Ordnance Disposal	20	60	RHIB	3	12.0	1007.	720.0	720.0	0.0	0.0	244.0	6500.0	43.2	1036.0	100.0	ər	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		240	0,001	43	1,037	100	31	14	10,000	212,224	ſ	•	214,405
Limpet Mine Neutralization System/Shock Wave Generator	40	40	RHIB	1	4.0	100%	160.0	160.0	0.0	0.0	54.4	1462.4	9.6	230.4	24.0	22	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	54	1,462	10	230	24	22	14	2,240	47,161	2	1	47,663
Airborne Mine Countermeasure - Mine Detection	4																																							
Mine Countermeasure Exercise - Towed Sonar (AQS-20,LCS)	4																																							
Mine Countermeasure Exercise - Surface (SMCMEX) Sonar (SQQ-32, MCM)	4																																							
Mine Neutralization - Remotely Operated Vehicle Soanr(ASQ-235 [AQS-20], SLQ-48)	4																																							
Mine Countermeasure - Towed Mine Detection	4														_																									
Underwater Demolition Qualification/Certification	30	30	CRRC	1	8.0	100%	240.0	0.0	240.0	0.0	0	0	0	0	0	0	0	36	3,096	0	0	0	0	0	0	0	0	0	0	36	3,096	0	0	0	3	720	15,159	0	0	15,320
Submarine Mine Exercise	16																																							
AVAL SPECIAL WARFARE															1																			1						
Personnel I&E	240	1200 1440	RHIB	5 6	8.0 8.0	100%		9600.0 11520.0		0.0	3264.0 0	87744. 1,711			1440.0	1,296	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	3,264 0	87,744 1,711	576 148,625	13,824	1,440	1,296	48	460,800 34,560	9,701,683 727,626	315	274	9,805,006 735,375
Parachute Insertion	20																																							
OTHER																																								
Direct Action (Tactical Air Control	18															-																	-							
Party) Intelligence, Surveillance,	16																																							
Reconnaissance Search and Rescue At Sea	0																																							
Sulface Ship Sonar Maintenance	42	42	FFG	1	4.0	100%	168.0	168.0	0.0	0.0	5,534	7,923	504	5,867	388	349	0	0	0	0	0	0	0	0	0	0	0	0	5,534	7,923	504	5,867	388	349	79	13,272	279,429	9	8	282,405
Submarine Sonar Maintenance	48																																							
Small Boat Attack	18	18	CRRC	1	4.0	100%	72.0	0.0	72.0	0.0	0	0	0	0	0	0	0	11	323	0	0	0	0	0	0	0	0	0	0	11	323	0	0	0	3	216	4,548	0	0	4,596
Sub Navigation / Sub Nav Under Ice	8																																							
Precision Anchoring	18	18	FFG	1	4.0	100%	72.0	72.0	0.0	0.0	2,372	3,396	216	2,514	166	150	0	0	0	0	0	0	0	0	0	0	0	0	2,372	3,396	216	2,514	166	150	79	5,688	119,755	4	3	121,031
Underwater Survey	32	96 96	RHIB	3 3	8.0 8.0	100%		768.0 768.0	0.0	0.0	261.1 0	7019.5 114	46.1 9,908	1105.3	115.2	104	0.0	0.0	0.0	0.0	0.0	0	0.0 0	0.0	0.0	0.0	0.0	0	261 0	7,020	46 9,908	1,106 0	115	104 0	48 3	36,864 2,304	776,135 48,508	25 2	22 1	784,400 49,025
Jnmanned Aerial Vehicle Operation	1000																																							
Training	0																																							
OTAL TRAINING (lbs per year)								30,568	5,885	6,97								5 267,917 L 134														1,062,73				9,642,012	2 203,002,91			
)TAL TRAINING (tons per yea	iri 👘										41	36	5 97	7 28	8 5	4 48	54	134	- 13	86	. 9	8	118	207	11	157	11	10	213	706	i 130	53	1 7	4 61	r I		101,5	л :	3 3	102.5

					OP	ERATIO	onal II	VFORM	ATION	- AIRCI	RAFT							MISSIO		AR (Ib)	By Jui	RISDIC	TION						E	MISSI	DNSIYI	EAR (Ib) BY J	URISDI	ICTION				Traini	ing Pla	atform		Fuel Use		CHC E-	issions ((II-)
			Aircra	t	Ti	ne	Alti	itude	Die	stributio	n (%)	Dis	tributio	n (hr)		Sta	ite (0-3	nm offsh	ore)			Vate	rs of U	S (3-12	nm)			Int	Water:	s (> 12 i)))			т	otal E	nission	s		Inf	ormati	on	(to	tal)	· ·	ING CO	issions	юј
Type Training	Training Ops 🕅	Distribution	AC Sortes	adAt	Ave Thre of Range (11)	Total Time of Range (11)	Thre < 3,000 ft (%)	Thre < 3,000 ft (01)	0-3 im from shore	3-12 m from Shore	>12 m from Shore	Total Time D- 3 um from s hore	Total Time 3- 12 im from shore	Total Time > 12 Im from shore	со	NOx	нс	SOr	РМ	PMz.s	со	NOx	нс	SOI	PM P	Mz.s	со	NOx	нс	SOI	РМ	PM2.5	со	NOx	нс	SOx	PM	PM 2.5	Engine Model	Engines (#)	Fuel Row (IbArr)	Pounds	Gallons	CO1	NzO) сн.	CO2.,
ANTI-AIR WAR	FARE																					. <u> </u>	i											· · · ·										-			
Air Combat Mane	uv 4800	1	4800	10515	1.0	4800.0	0%	0.0	0%	0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-GE	2 2	10,338	49622400	7297412	153639707	/ 4984	4342	155,275,969
		1	4800	AV-8B	1.0	4800.0	0%	0.0	0%	0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-RF	1	6,000	28800000	4235294	89169882	2893	3 2520	90,119,541
Air Defense Exer	:is 100	2	200	F A- 40E1E	1.0	200.0	50%	100.0	0%	0%	100%	0.00	0.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	744	15243	124	414	6782	6104	744	15243	124	414	6782	6104	F414-GE	2	10,338	2067600	304059	6401654	208	181	6,469,832
Air Intercept Con	tre 4800	2	9600	F A- 40E1E	1.0	9600.0	50%	4800.0	0%	0%	100%	0.00	0.00	4800.00	0	0	0	0	0	0	0	0	0	0	0	0	35728	731930	5955	19849	325523	292971	35728	731930	5955	19849	325523	292971	F414-GE	2	10,338	99244800	14594824	307279415	5 9968	; 8684	310,551,939
Gunnery Exercis A-A (Medium	*, 36	1	36	AV-8B	1.0	36.0	0%	0.0	0%	0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-RF	3 1	6,000	216000	31765	668774	22	19	675,897
A-A Medium		1	36	Г А- 40 стас	1.0	36.0	0%	0.0	0%	0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-GE	E 2	10,338	372168	54731	1152298	37	33	1,164,570
Missile Exercise,	A- 18	1	18	AV-8B	10	18.0	0%	0.0	0%	0%	100%	0.00	0.00	0.00		0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	F402-RF	- 1	6.000	108000	15882	334387	- 11	- 9	337,948
Phoble Exercise,		i	18	FA- toele	1.0	18.0	0%	0.0	0%	0%	100%	0.00			ŏ	0	Ő	0	Ő	0	0	0	0	0	Ő	0	0	0	Ő	Ő	0	0	Ő	0	0	0	Ő	0	F414-GE		10,338	186084	27365	576149	19	16	582,285
Gunnery Exercise S-A(Large Calibo	*, 5 ei)																																														
Gunnery Exercis S-A (Medium	*, 12																																														
Missile Exercise, A	^{S-} 15																																														
STRIKE WAR	ARE																																														
Bombing Exercis A-G	^{5,} 2300	1	2300	FA- 18E/F	1.0	2300.0	10%	230.0	0%	0%	100%	0.00	0.00	230.00	0	0	0	0	0	0	0	0	0	0	0	0	1712	35072	285	951	15598	14038	1712	35072	285	951	15598	14038	F414-GE	: 2	10,338	23777400	3496676	73619026	2388	; 2081	74,403,069
Missile Exercise, G	A- 85	0.5	43	FA- 18E/F	2.0	85.0	10%	8.5	0%	0%	100%	0.00	0.00	8.50	0	0	0	0	0	0	0	0	0	0	0	0	63	1296	11	35	576	519	63	1296	11	35	576	519	F414-GE	2	10,338	878730	129225	2720703	88	77	2,749,679
_	-	0.5	43	SH-60B	2.0	85.0	100%	85.0	0%	0%	100%	0.00	0.00	85.00	0	0	0	0	0	0	0	0	0	0	0	0	638	653	56	41	428	386	638	653	56	41	428	386	T700-G8	5 2	1200	102000	15000	315810	10	9	319,173
Gunnery Exercis A-G	°, 96	0.5	48	FA- 18E/F	2.0	96.0	10%	9.6	0%	0%	100%	0.00	0.00	9.60	0	0	0	0	0	0	0	0	0	0	0	0	71	1464	12	40	651	586	71	1464	12	40	651	586	F414-GE	: 2	10,338	332448	145948	3072794	100	87	3,105,519
		0.5	48	SH-60B	2.0	96.0	100%	96.0	0%	0%	100%	0.00	0.00	36.00	0	0	0	0	0	0	0	0	0	0	0	0	720	737	63	46	484	435	720	737	63	46	484	435	T700-GE	2	1200	115200	16941	356680	12	10	360,478
																																										(

Table D-6: Aircraft Emissions – No Action Alternative

AMPHIBIOUS ¥	ARFARE	E																																												
Fire Support																																														
Exercise - Land-	10														1																															
Based target											_																					_														
								_	_		_	_			I											_						_	_	_	_				_	_					_	
Amphibious Rehearsal, No															1																															
Landing - Marine	12	4	48.0	CH-53	18.0	864.0	100%	864.0	100%	0%	0%	864.00	0.00	0.00	8215	31164	579	1543	8524	7671	0	0	0	0	0 0		0	0	0 0	0	0	8215	5 31164	\$ 579	1543	8524	7671	T64-GE	- 3	4,464	3856896	567191	11941631	387	337	12,068,809
Air Ground Task															1																															
Force																											-	-											-							
		10		MV-22	18.0	2160.0				0%	0%	2160.00			47755		8298	968	4306		0	0	0	0	0 0		-	0	0 0	0	0	4775	5 9532	2 8298		4306			2				14980540			15,140,083
		2	24.0		18.0	432.0	100%	432.0	100%	0%	0%	432.00			779		40	93	980	882	0	0	0	0	0 0		•	0	0 0	0	0	779	1101	40	93	980	882	T400-C	-	540	233280	34306	722276	23		729,968
		4	48.0		18.0	864.0	100%	864.0	100%		0%	864.00			7865		400	281	2947	2652	0	0	0	0	0 0		0	0	0 0	0	0	786	5 3817	400	281	2947	2652	T700-G		812	701568	103172	2172178	70		2,195,312
		4	48.0	AV-8	18.0	864.0	0%	0.0	100%	0%	0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0 0		0	0	0 0	0	0	0	0	0	0	0	0	F402-R	R 1	6,000	5184000	762353	16050579	521	454	16,221,517
Amphibious Assault - Marine																																														
Air Ground Task	•	4	24.0	CH-53	18.0	432.0	100%	432.0	100%	0%	0%	432.00	0.00	0.00	4108	15582	289	771	4262	3836	0	0	0	0	0 0	' '	0	0	0 0	0	0	4108	8 15582	2 289	771	4262	3836	T64-GE	- 3	4,464	1928448	283595	5970815	194	169	6,034,404
-		10	60.0	MV-22	18.0	1080.0	100%	1080.0	100%	0%	0%	1080.00	0.00	0.00	23878	4766	4143	484	2153	1938	0	0	0	0	0 0		0	0	0 0	0	0	2387	8 4766	5 4149	484	2153	1938		2	2240	2419200	355765	7490270	243	212	7,570,041
		2	12.0		18.0	216.0	100%	216.0	100%	0%	07.	216.00		0.00	390	551	20	404	490	441	0	0	0	0	0 0		~	0	0 0	0	0	390	551	20	404	490	441	T400-C		540	116640	17153	361138	12		364,984
		4	24.0		18.0	432.0	100%	432.0	100%	0%	0%	432.00		0.00	3932		200	140	1473	1326	0	0	0	0	0 0		0	0	0 0	0	0	393	2 1908	200	14.0	1473	1326	T700-G	-	812	350784	51586	1086089	35		1,097,656
		4		AV-8	18.0	432.0		0.0	100%	0%	0%	432.00	0.00	0.00	0002	0	0	0	0	0	0	0	0	0	0 0		0	0	0 0	0	0	0000	0	0	0	0	0	F402-R		6,000			8025289			8,110,759
		4	24.0	01.0	10.0	402.0		0.0	1007.		07.	0.00	0.00	0.00	Ľ						•	•	•	•		/ L `	•	•	0 0		· ·				· ·			1402-6	<u> </u>	0,000	2002000	301110	0023203	200	221	0,110,1100
Amphibious Raid -																					-					_								_				I								
Special Purpose																																														
Marine Air Ground	6	4	24.0	H-53	12.0	288.0	100%	288.0	100%	0%	0%	288.00	0.00	0.00	2738	10388	193	514	2841	2557	0	0	0	0	0 0		0	0	0 0	0	0	273	8 10388	8 193	514	2841	2557	T64-GE	- 3	4,464	1285632	189064	3980544	129	112	4,022,936
Task Force																																														
		10		MV-22	12.0	720.0	100%	720.0	100%	0%	0%	720.00	0.00	0.00	15918		2766	323	1435	1292	0	0	0	0	0 (0	0	0 0	0	0	1591	8 3177	2766	323	1435	1292		2	2240		237176	4993513	162	141	5,046,694
		2	12.0	UH-1	12.0	144.0	100%	144.0	100%	0%	0%	144.00	0.00	0.00	260	367	13	31	327	294	0	0	0	0	0 (0	0	0 0	0	0	260	367	13	31	327	294	T400-C	P 2	540	77760	11435	240759	8	7	243,323
		4	24.0	AH-1	12.0	288.0	100%	288.0	100%	0%	0%	288.00	0.00	0.00	2622	1272	133	94	982	884	0	0	0	0	0 0		0	0	0 0	0	0	262	2 1272	2 133	94	982	884	T700-G	E 2	812	233856	34391	724059	23	20	731,771
		4	24.0	AV-8	12.0	288.0	0%	0.0	100%	0%	0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0 0		0	0	0 0	0	0	0	0	0	0	0	0	F402-R	R 1	6,000	1728000	254118	5350193	174	151	5,407,172
Non-Combatant																																												-		
Evacuation	5	10	50	MV-22	20.0	1000.0	100%	1000.0	100%	0%	0%	1000.00	0.00	0.00	22109	4413	3842	448	1994	1794	0	0	0	0	0 0		0	0	0 0	0	0	2210	9 4413	3842	448	1994	1794		2	2240	2240000	329412	6935435	225	196	7,009,298
Operation																									-		-																			
		4	20	H-53	20.0	400.0	100%	400.0	100%	0%	0%	400.00		0.00	3803		268	714	3946	3552	0	0	0	0	0 0) (0	0	0 0	0	0	380	3 14428	8 268	714	3946	3552	T64-GE		4,464		262588	5528533	179		5,587,412
		2	10	UH-1	20.0	200.0	100%	200.0	100%	0%	0%	200.00		0.00	361	510	18	43	454	408	0	0	0	0	0 0	· ·	0	0	0 0	0	0	361	510		43	454	408	T400-C		540	108000	15882	334387	11		337,948
		4	20	AH-1	20.0	400.0	100%	400.0	100%		0%	400.00		0.00	3641		185	130	1364	1228	0	0	0	0	0 (0	0	0 0	0	0	364		185	130	1364	1228	T700-G		812	324800		1005638	33		1,016,348
		4	20	AV-8	20.0	400.0	0%	0.0	100%	0%	0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0 () (0	0	0 0	0	0	0	0	0	0	0	0	F402-R	R 1	6,000	2400000	352941	7430824	241	210	7,509,962
															L																	_	_													
Humanitarian															1																															
Assistance/ Disaster Relief	5	10	50	MV-22	20.0	1000.0	100%	1000.0	100%	0%	0%	1000.00	0.00	0.00	22103	4413	3842	448	1994	1794	0	0	0	0	0 0		0	0	0 0	0	0	2210	9 4413	3842	448	1994	1794		2	2240	2240000	329412	6335435	225	196	7,009,298
Operations															1																															
		4	20	H-53	20.0	400.0	100%	400.0	100%	0%	0%	400.00	0.00	0.00	3803	14428	268	714	3946	3552	0	0	0	0	0 0		0	0	0 0	0	0	380	3 144.28	8 268	714	3946	3552	T64-GE	. 3	4.464	1785600	262588	5528533	179	156	5,587,412
		2	10	UH-1	20.0	200.0	100%	200.0	100%	0%	0%	200.00		0.00	361	510	18	43	454	408	0	0	0	0	0 1		0	0	0 0	0	0	361	510	18	43	454	408	T400-C		540	108000	15882	334387	11		337,948
		-	20	AH-1	20.0	400.0	100%	400.0	100%	0%	0%	400.00			3641		185	130	1364	1228	0	0	0	0	0 1		0	0	0 0	0	0	364			130	1364	1228	T700-G		812	324800		1005638	33		1,016,348
		4	20		20.0	400.0		0.0	100%		0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0 0		ů l	0	0 0	0	0	0	0	0	0	0	0	F402-R		6.000			7430824			7,509,962
		-			20.0	400.0	***	0.0		***		0.00	0.00	0.00	Ť	Ť	Ť	~	Ť			~	~	~	~ '					Ť	Ť	Ť	Ť	-	- Ť	Ť	Ť		-	0,000	2400000					. 10001005
Unmanned Aerial				-		-									<u> </u>											_								-	-		-		-					+	-	
Vehicle -															1																															
Intelligence,	100	1	100.0	MQ-4C	4.0	400.0	100%	400.0	100%	0%	0%	400.00	0.00	0.00	840	15536	264	1416	244	220	0	0	0	0	0 0		0	0	0 0	0	0	840	15536	6 264	1416	244	220	AE3007	ት 1	2,532	1012800	148941	3135808	102	89	3,169,204
Surveillance, and															1																															
Reconaissance						_		_		_	_	_	_													_									_				_							
																																						1								

ANTI-SURFACE	VAREA	RE																																											
Gunnery Exercise, A-S(Small Caliber) -		0.25	60.5 F.		2.0	121.0	10%	12.1	0%	0%	100%	0.00	0.00	12.10	0	0	0	0	0	0			0	0		30	1845	15	50	821	739	90 18	45 1	5 50	821	739	F414-G	F 2	10,338	1250898	183956	3873001	126	103	3,914,248
Ship			10												, ,	°	, v	°.		-			-		, ,																				
		0.75	181.5 S	1-60B	2.0	363.0	100%	363.0	0%	0%	100%	0.00	0.00	363.00	0	0	0	0	0	0	0 0	0	0	0		2723	2788	240	174	1830	1647 2	2723 27	/88 24	174	1830	1647	T700-C	iE 2	1200	435600	64053	1348694	44	38	1,363,058
Gunnery Exercise, A-S (Medium	295	0.05	73.75 F.	۱.	2.0	147.5	10%.	14.8	0%	0.4	100%	0.00	0.00	14.75				~				0		0		110	2249	18	61	1000	900	110 22	249 1	8 61	1000	900	F414-G	E 2	10,338	1524855	224243	4721220	153	133	4,771,501
Caliber) - Ship	235									07.					Ů	Ů	Ů	Ů	•	0	0 0	· ·			Ů																				
		0.75	221.3 S	1-60B	2.0	442.5	100%	442.5	0%	0%	100%	0.00	0.00	442.50	0	0	0	0	0	0	0 0	0	0	0	0	3319	3398	292	212	2230	2007 :	3319 33	38 2	92 212	2 2230	2007	T700-C	έE 2	1200	531000	78088	1644070	53	46	1,661,579
Missile Exercise (A-	- 3	0.33	0.99 F.		2.0	2.0	10%	0.2	0%	0%	100%	0.00	0.00	0.20	0	0	0	0	0	0	0 0	0	0	0	0	1	30	0	1	13	12	1 3	0) 1	13	12	F414-G	E 2	10,338	20469.24	3010	63376	2	2	64,051
S) - Rocket			18 1.98 S	E/F	2.0	4.0	100%	4.0	0%	0%	100%	0.00	0.00	3.96	0	0	0	0	0	0	0 0	0	0	0	0	30	30	3	2	20	18	30 3	0 :	3 2		18	T700-C		1200	4752	699	14713	0	0	14,870
Minelle (5. 1944)			-																																_										
Missile Exercise (A- S)	20	0.5		E/F	2.0	20.0	10%	2.0	0%	0%	100%	0.00	0.00	2.00	0	0	0	0	0	0	0 0	0	0	0	0	15	305	2	8		122	15 3		2 8		122	F414-G		10,338		30406	640165	21		646,983
		0.5	10 S	H-60B	2.0	20.0	100%	20.0	0%	0%	100%	0.00	0.00	20.00	0	0	0	0	0	0	0 0	0	0	0	0	150	154	13	10	101	91	150 19	54 1	3 10	101	91	T700-C	iE 2	1200	24000	3529	74308	2	2	75,100
Laser Targeting	600	0.5	300		1.0	300.0	10%	30.0	0%	0%	100%				0	0	0	0	0	0	0 0	0	0	0	0		4575	37						7 124			F414-G		10,338		456088	9602482			9,704,748
		0.5	300 S	1-60B	1.0	300.0	100%	300.0	0%	0%	100%	0.00	0.00	300.00	0	0	0	0	0	0	0 0	0	0	0	0	2250	2304	198	144	1512	1361 2	2250 23	304 13	18 144	1512	1361	T700-C	έE 2	1200	360000	52941	1114624	36	32	1,126,494
Bombing Exercise (A-S)	37	0.5	19 F.		1.0	18.5	10%	1.9	0%	0%	100%	0.00	0.00	1.85	0	0	0	0	0	0	0 0	0	0	0	0	14	282	2	8	125	113	14 2	82 ;	2 8	125	113	F414-G	E 2	10,338	191253	28125	532153	19	17	598,459
[A-S]		0.5	18 19 P	E/F	1.0	18.5	10%	1.9	0%	0%	100%	0.00	0.00	1.85	0	0	0	0	0	0	0 0	0	0	0	0	22	69	5	4				9 9	5 4		32	T56-A-		4,800		13059	274940	9		277,869
Torpedo Exercise (Submarine to	5																																												
Surface)																																		_											
Missile Exercise (S-	12																																												
<u>ा</u>																																													
Sinking Exercise (SINKEX)	2	2	4 F.	k- E/F	8.0	32.0	10%	3.2	0%	0%	100%	0.00	0.00	3.20	0	0	0	0	0	0	0 0	0	0	0	0	24	488	4	13	217	195	24 4	88 4	L 13	217	195	F414-G	E 2	10,338	330816	48649	1024265	33	29	1,035,173
(onnex)		1	2 P	3	8.0	16.0	10%	1.6	0%	0%	100%	0.00	0.00	1.60	0	0	0	0	0	0	0 0	0	0	0	0	19	59	4	3	30		19 5		L 3		27	T56-A-		4,800		11294	237786	8	7	240,319
		1	2 8	1-60B	8.0	16.0	100%	16.0	0%	0%	100%	0.00	0.00	16.00	0	0	0	0	0	0	0 0	0	0	0	0	120	123	11	8	81	73	120 12	23 1	1 8	81	73	T700-C	έE 2	1200	19200	2824	59447	2	2	60,080
Gunnery Exercise																							-															-							
(S-S) Boat - Medium-caliber	10																																												
Gunnery Exercise (S-S) Small-caliber	40																																												
Maritime Security																																													
Operations (MSO)	40	1	40 S	1-60B	4.0	160.0	100%	160.0	100%	0%	0%	160.00	0.00	0.00	1200	1229	106	77	806	726	0 0	0	0	0	0	0	0	0	0	0	0 1	1200 12	29 10	6 77	806	726	T700-C	iΕ 2	1200	192000	28235	594466	19	17	600,797
ANTI-SUBMARI		FADE																							_													-							
Tracking Exercise-		3	186 🔊	H-60B	4.0	744.0	100%	744.0	0%	100%	0%	0.00	744.00	0.00	0	0	0	0	0	0 55	80 57	14 491	357	3750	3375	0	0	0	0	0	0 5	5580 57	714 4	91 35	7 3750	3375	T700-C	iЕ 2	1200	892800	131294	2764266	90	78	2,793,706
Helo		-										0.00			-	-	-	-	-							-	-	-	-	-	-														
Torpedo Exercise- Helo	4	3	12 S	H-60B	4.0	48.0	100%.	48.0	0%	100%	0%	0.00	48.00	0.00	0	0	0	0	0	0 3	60 36	3 32	23	242	218	0	0	0	0	0	0	360 3	59 3	2 23	242	218	T700-C	iE 2	1200	57600	8471	178340	6	5	180,239
Tracking Exercise- Maritime Patrol																																													
Advanced Extended Echo	11	1	11 P	3	6.0	66.0	75%	49.5	0%	100%	0%	0.00	49.50	0.00	0	0	0	0	0	0 5	96 183	37 138	95	943	849	0	0	0	0	0	0	596 18	37 13	8 95	943	849	T56-A-	14 4	4,800	316800	46588	980869	32	28	991,315
Ranging																																													
Tracking Exercise -																																		-		-									
Maritime Patrol Aircraft	34	1	34 P	3	6.0	204.0	75%	153.0	0%	100%	0%	0.00	153.00	0.00	0	0	0	0	0	0 18	43 56	77 426	294	2916	2624	0	0	0	0	0	0 1	1843 56	77 43	26 23	\$ 2916	2624	T56-A-	14 4	4,800	979200	144000	3031776	98	86	3,064,064
All Clark																																													
Torpedo Exercise- Maritime Patrol	4	1	4 P	3	6.0	24.0	75%	18.0	0%	100%	0%	0.00	18.00	0.00	0	0	0	0	0	0 2	17 66	8 50	35	343	309	0	0	0	0	0	0	217 6	58 5	0 35	343	309	T56-A-	14 4	4,800	115200	16941	356680	12	10	360,478
Aircraft			• •	•											ľ	•	•	•	•							•	Ť		•	•								·· ·	4,000						
Tracking Exercise	132																																_		-		-						+		
-Suface	132												_																																
Torpedo Exercise-	3																						-		-+										-	-							+		
Surface	-																																										+		
Tracking Exercise- Submarine	12																																												
Gabaranne																																													
						- T										_	- T						_	- T														_						1 E	
Torpedo Exercise - Submarine	10																																												

MAJOR TRAINI	NG EVEP	NTS																																											
Joint	1	48	48	FA-18E/F	8.0	384.0	10%	38.4	0%	100%	. 0%	0.0	0 38.4	0 0.00	0	0	0	0	0	0	286	5855	48	159 20	604 234	44 (0 0	0	0	0	0	286 5	5855 4	8 153	2604	2344	F414-GE	2	10,338	3969792	583793	12291177	399	347	12,422,078
Expeditionary		4	4	EA-6B	8.0	32.0	10%	3.2	0%	100%	. 0%	0.0	0 3.2		0	0	0	0	0	0	14.8	165	10		73 6		0 0	0	0	0	0	14.8	165 1	n 8	73	66	F402-RR		6.000	192000	28235	594466	19	17	600,797
		4		E-2	8.0	32.0	10%	3.2	0%	100%		0.0			- ů	0	0	0	0	0	18	71	3	-	7 6		0 0	0	0	0	0	18	71 3	3	7	6	T56-A-42		1,100	35200	5176	108985	4	3	110,146
		3		P-3	8.0	24.0	10%	2.4	0%	100%		0.0			0	0	0	0	0	0	29	89	7	5 4	46 4	1 0	0 0	0	0	0	0	29	89 7	5	46	41	T56-A-14		4,800	115200	16941	356680	12	10	360,478
		6	6	AV-8B	8.0	48.0	10%	4.8	0%	100%	. 0%.	0.0			0	0	0	0	0	0	222	248	16	12 1	109 94	3 (0 0	0	0	0	0	222	248 1	5 12	109	98	F402-RR		6,000	288000	42353	891699	29	25	901,195
		2	2	C-130	8.0	16.0	10%	1.6	0%	100%	. 0%.	0.0	0 1.60	0.00	0	0	0	0	0	0	15	59	3	3 3	29 20	5 (0 0	0	0	0	0	15	59 3	3	29	26	T56-A-42	4	4,500	72000	10588	222925	7	6	225,299
		4	4	A-10	8.0	32.0	10%	3.2	0%	100%	. 0%.	0.0	0 3.2	0.00	0	0	0	0	0	0	39	86	4	4 3	26 23	3 (0 0	0	0	0	0	39	86 4	4	26	23		2	6,052	193664	28480	599618	19	17	606,004
		1	1	E-3	8.0	8.0	10%	0.8	0%	100%	. 0%.	0.0	0.8	0.00	0	0	0	0	0	0	54	221	8	10	7 6		0 0	0	0	0	0	54	221 8	; 10	7	6		4	130,736	1045888	153807	3238254	105	32	3,272,741
		1	1	KC-135	8.0	8.0	10%	0.8	0%	100%	. 0%.	0.0	0.8	0.00	0	0	0	0	0	0	25	247	1	7	2 2	2 (0 0	0	0	0	0	25	247	7	2	2		4	91,552	732416	107708	2267689	74	64	2,291,840
		15	15	SH-60B	8.0	120.0	100%	120.0	0%	100%	. 0%	0.0	0 120.0	0.00	0	0	0	0	0	0	900	922	79	58 6	505 54	4 (0 0	0	0	0	0	900	922 7	9 58	605	544	T700-GE	2	1200	144000	21176	445849	14	13	450,598
		4	4	CH-53	8.0	32.0	100%	32.0	0%	100%	. 0%	0.0	0 32.0	0 0.00	0	0	0	0	0	0	304	1154	21	** *	316 28	4 (0 0	0	0	0	0	304	1154 a	1 57	316	284	T64-GE-		4,464	142848	21007	442283	14	12	446,993
		12	12	CH-46	8.0	96.0	100%	96.0	0%	100%		0.0			0	0	0	0	0	0	2454	593	380		256 23		0 0	0	0	0	0		593 38		256	231	T58-GE-			144000	21176	445849	14	13	450,598
		4	4	AH-1	8.0	32.0	100%		0%	100%		0.0	0 32.0		0	0	0	0	0	0	291	141	15		109 98			0	0	0	0		141 1	5 10		98	T700-GE		812	25984	3821	80451	3	2	81,308
		2		UH-1	8.0	16.0	100%	16.0	0%	100%		0.0			0	0	0	0	0	0	29	41	1		36 33		~ ~	0	0	0	0		41	3	36	33	T400-CP		540	8640	1271	26751	1	1	27,036
		10	10	MV-22	8.0	80.0	100%	80.0	0%	100%	. 0%.	0.0	0.08	0 0.00	0	0	0	0	0	0	1769	353	307	36 1	159 14	4 (0 0	0	0	0	0	1769	353 30	7 36	159	144		2	2240	179200	26353	554835	18	16	560,744
Joint Multi-Strike	1	14.4	144	FA-18E/F	- 8.0	1152.0	10%	115.2	0%	0%	100%	· 0.0	0.0) 115.20	0	0	0	0	0	0	0	0	0	0	0 0) 85	57 17566	143	476	7813	7031	857 1	7566 14	3 476	5 7813	7031	F414-GE	2	10,338	11909376	1751379	36873530	1196	1042	37,266,233
Group Exercise		12	12	EA-6B	8.0	96.0	10%	9.6	0%	0%	1007	· 00	0.0	0.60	0	0	0	0	0	0	0	0	0	0	0 0	44	44 495	31	23	219	197	444	495 3	1 23	219	197	F402-BB	1	6.000	576000	84706	1783398	58	50	1.802.391
		12	12	E-2	8.0	36.0	10%	3.6	0%	0%	1007				- ů	0	0	0	0	0	0	0	0	-	0 0	5		8	8	20	18	54	212 8	8	20	18	T56-A-42		1,100	105600	15529	326956	11	3	330,438
		5		P-3	8.0	40.0	10%	4.0	0%	0%	100%				0	0	0	0	0	0	0	0	0	0	0 0	4		11	8	76	69	48	148 1	1 8	76	69	T56-A-14		4,800	192000	28235	594466	19	17	600,797
		1	1	E-3	8.0	8.0	10%	0.8	0%	0%	100%				0	0	0	0	0	0	0	0	0	0	0 0	5	4 221	8	10	7	6	54	221 8	10	7	6		4	130,736			3238254	105	92	3,272,741
		2	2	KC-135	8.0	16.0	10%	1.6	0%	0%	100%				0	0	0	0	0	0	0	0	0	0	0 0	4	9 494	1	15	5	4	49	494	15	5	4		4	91,552	1464832		4535378	147		4,583,680
		6	6	B-1B	8.0	48.0	10%	4.8	0%	0%	100%	. 0.0			0	0	0	0	0	0	0	0	0	0	0 0	2	27 418	4	13	4	4	27	418 4	13	4	4		4	26,560	1274880	187482	3947253	128	112	3,989,292
		24	24	F-15	8.0	192.0	10%	19.2	0%	0%	100%	· 0.0	0.0) 19.20	0	0	0	0	0	0	0	0	0	0	0 0	4	31 5558	77	48	970	873	431 \$	5558 7	7 48	970	873	F100-PW	2	6196	1189632	174946	3683311	119	104	3,722,538
		45	45	SH-60B	8.0	360.0	100%	360.0	0%	0%	100%	· 0.0	0.0	360.0) 0	0	0	0	0	0	0	0	0	0	0 0	27	2765	238	173	1814	1633	2700 2	2765 23	8 173	1814	1633	T700-GE	2	1200	432000	63523	1337548	43	38	1,351,793
Marine Air Ground									_	_		_		_	_											_																	<u> </u>		
Task Force Exercise	4	1	4	C-130	8.0	32.0	10%	3.2	50%	50%	. 0%.	1.6	0 1.60	0.00	15	59	3	3	29	26	15	59	3	3	29 21	5 (0 0	0	0	0	0	30	118 7	6	57	51	T56-A-42	4	4,500	144000	21176	445849	14	13	450,598
(Amphibious)		2	8	SH-60B	8.0	64.0	100%	64.0	50%	50%	. 0%.	32.	00 32.0	0 0.00	240	246	21	15	161	145	240	246	21	15 1	161 14	5 (0 0	0	0	0	0	480	492 4	2 31	323	290	T700-GE	2	1200	76800	11294	237786	8	7	240,319
		4	16	CH-53	8.0	128.0	100%	128.0	50%		. 0%	64.0			603		43	114	631	568	609	2308	43	114 6	631 56	8 (0 0	0	0	0	0	1217	4617 8	6 223	1263	1136	T64-GE-		4,464	571392	84028	1769130	57	50	1,787,972
		12	48	CH-46	8.0	384.0	100%	384.0	50%	50%	. 0%.	192.			392	5 3926	608	92	410	369	3926	949	608	92 4	410 36	9 (0 0	0	0	0	0	7852	4875 12	17 184	820	738	T58-GE-	2	1200	460800	67765	1426718	46	40	1,441,913
		4	16	AH-1	8.0	128.0	100%	128.0	50%	50%	. 0%.	64.0			583	283	30	21	218	196	583	283	30	21 2	218 19	6 (0 0	0	0	0	0	1165	565 5	9 42	437	393	T700-GE	2	812	103936	15285	321804	10	9	325,231
		2	8	UH-1	8.0	64.0	100%	64.0	50%	50%	. 0%.	32.0	00 32.0	0 0.00	58	82	3	7	73	65	58	82	3	7	73 6	5 (0 0	0	0	0	0	115	163 6	14	145	131	T400-CP	2	540	34560	5082	107004	3	3	108,143
		10	40	MV-22	8.0	320.0	100%	320.0	50%	50%	. 0%	160.	.00 160.0	0.00	353	7 706	615	72	319	287	3537	706	615	72 3	319 28	7 (0 0	0	0	0	0	7075	1412 12	29 143	638	574		2	2240	716800	105412	2219339	72	63	2,242,975
Special Purpose				C-130	8.0	16.0	10%	16	50%	50%	. 0%	0.8	30 0.8	0.00	7	29	2		14	13	7	29			14 13		0 0		0	0		45	59 (3	29		T56-A-42		4.500	72000	10588	222925	7	6	005.000
Marine Air Ground Task Force	٤	I '	2	C-130	0.0	16.0	107.	1.0	502	. 50%	• • • • • • • • • • • • • • • • • • • •	0.0	0.0	0.00	1 '	20	2	'	14	13	'	20	2	·	14 15	' I '	0 0	0		°		15		' '	20	26	150-A-42	4	4,500	72000	10500	222325	ſ	0	225,299
Exercise		4	8	CH-53	8.0	64.0	100%	64.0	50%	50%	. 0%.	32.0	00 32.0	0 0.00	304	1154	21	57	316	284	304	1154	21	57 3	316 28	4 (0 0	0	0	0	0	609 2	2308 4	3 114	631	568	T64-GE-	3	4,464	285696	42014	884565	29	25	893,986
		12	24	CH-46	8.0	192.0	100%	192.0	50%	50%	. 0%.				196	3 1963	304	46	205	185	1963	475	304	46 2	205 18	5 (0 0	0	0	0	0	3926 2	2438 60	8 92	410	369	T58-GE-	2	1200	230400	33882	713359	23	20	720,956
		4	8	AH-1	8.0	64.0	100%	64.0	50%	50%	. 0%.	32.0	00 32.0	0 0.00	291	141	15	10	109	98	291	141	15	10 1	109 98	3 (0 0	0	0	0	0	583	283 3	0 21	218	196	T700-GE	2	812	51968	7642	160902	5	5	162,616
		2	4	UH-1	8.0	32.0	100%	32.0	50%	50%	. 0%.	16.0	00 16.0	0.00	29	41	1	3	36	33	29	41	1	3 :	36 33	3 (0 0	0	0	0	0	58	82 (7	73	65	T400-CP	2	540	17280	2541	53502	2	2	54,072
		10	20	MV-22	8.0	160.0	100%	160.0	50%	50%	. 0%	80.	00 80.0	0 0.00	176	353	307	36	153	144	1769	353	307	36 1	159 14	4 (0 0	0	0	0	0	3537	706 6	5 72	319	287		2	2240	358400	52706	1103670	36	31	1,121,488
ELECTRONIC	ADEAD	F													_																													<u> </u>	
Electronic Waffar			480	FA-18E/F	- 20	960.0	0%	0.0	0%	0%	1002	. 0.0		0.00		0	0	0	0	0	0	0	0	0	0 0		0 0	0	0	0	0	0	0 (0	0	0	EAN OF		10.228	9904490	4459490	30727941	997	040	21.055.194
Operations	400	<u> </u>	400	F A-10E7	2.0	360.0	07.	0.0	07.	07.	1002	• 0.0	0.0	0.00	l °	0		0	•	0	•	0	•	0	0 0	· ·	0 0			0	•	•	0 (F 4 14-GC	٤	10,330	3324400	1453402	30727341	331	000	31,035,134
Flare Exercise	3200	0.9	2880	F-15	3.0	8640.0	0%	0.0	0%	0%	100%	. 0.0	0.0	0.00	0	0	0	0	0	0	0	0	0	0	0 0) (0 0	0	0	0	0	0	0 0	0	0	0	F100-PW	2	6136	53533440	7872565	165748977	5377	4684	167,514,203
		0.06		FA-18E/F	3.0	576.0		0.0	0%						0	0	0	0	0	0	0	0	0	0	0 0		0 0	0	0	0	0	0	0 0	0	0	0	F414-GE			5954688		18436765	598		18,633,116
				SH-60B		384.0) 0	0	0	0	0	0	0	0	0	0	0 0	28	80 2949	253	184	1935	1742	2880 2	2949 25			1742	T700-GE		1200	460800	67765	1426718			1,441,913
Chaff Exercise - SI	40										_			_												_																	$ \longrightarrow $		
	. +0																																												
Chaff Exercise - Aircraft	3200	0.9	2880	F-15	3.0	8640.0	0%	0.0	0%	0%	100%	· 0.0	0.0	0.00	0	0	0	0	0	0	0	0	0	0	0 0		0 0	0	0	0	0	0	0 0	0	0	0	F100-PW	2	6196	53533440	7872565	165748977	5377	4684	167,514,203
1		0.06	192	FA-18E/F	3.0	576.0	0%	0.0	0%	0%	1007	• 0.0	0.0	0.00	0	0	0	0	0	0	0	0	0	0	0 0		0 0	0	0	0	0	0	0 0	0	0	0	F414-GE	2	10,338	5954688	875689	18436765	598	521	18,633,116
		0.04	128	SH-60B	3.0	384.0	100%	384.0	0%	0%	100%	· 0.0	0.0	384.0) 0	0	0	0	0	0	0	0	0	0	0 0	28	80 2949	253	184	1935	1742	2880 2	2949 25	3 184	1935	1742	T700-GE	2	1200	460800	67765	1426718	46	40	1,441,913

MINE WARFAR	ξE																																									
Mine Laying -	4	0.5	2 FA-1	8E/ 0.5	1.0	0% 0	.0 0;	% 07	% 100%	. 0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	2 10,338	10338	1520	32008	1	1	32,349
Aircraft			2 P-3			0% 0				6 0.00			0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	4 4,800		1412	29723	1	1	30,040
		0.0	- P-0							. 0.00	0.00	0.00	Ť	, v		Ť		Ť		•	÷			Ť			÷	•	, v	•	•		•	, v	, v	4 4,000	0	0	0		0.00	0
Mine Neutralization - Explosive	20																																									
Limpet Mine				-				-								-																										
Neutralization System/Shock Wave Generator	40																																									
NAVAL SPECIA		RFARE						_				_				_																										
	240		360 H-60	8.0	7680.0	100% 768	0.0 100	0% 07	% 0%	7680.0	0.00	0.00	57600	58982	5063	3686	38707	34836	0	0	0	0	0 0	0	0	0	0	0	0	57600	58382	5063	3686	38707	34836	2 1200	3216000	1355294	28534362	326	806	28,838,253
		2	480 MV-2	22 8.0	3840.0	100% 384	0.0 100	0% 07	% 0%	3840.0	00.00	0.00	84898	16945	14752	2 1720	7655	6890	0	0	0	0	0 0	0	0	0	0	0	0	84898	16945	14752	1720	7655	6890	2 2240	8601600	1264941	26632072	864	753	26,915,703
Parachute	20	1	20 C-13	0 4.0	80.0	100% 80	0.0 100	0% 07	7. 0%.	80.00	0.00	0.00	745	2938	163	14.4	1429	1286	0	0	0	0	0 0	0	0	0	0	0	0	745	2938	169	14.4	1429	1286	4 4,500	360000	52941	1114624	36	32	1,126,494
nsertion			20 CH-4			100% 80			% 0%				1636	0	253	38	171	154	0	0	0	0	0 0	0	0	0	0	0	0	1636	0	253	38	171	154	2 1200	96000	14118	297233	10	8	300,398
		1	20 H-60	4.0	80.0	100% 80	0.0 100	0% 07	% 0%	80.00	0.00	0.00	600	614	53	38	403	363	0	0	0	0	0 0	0	0	0	0	0	0	600	614	53	38	403	363	2 1200	96000	14118	297233	10	8	300,398
OTHER					<u> </u>																																					
Surface Ship	42					_																																			1	
Sonar	42			_				_	_		_																															
Submarine Sonar	48																																									
sonar																																										
Small Boat	18																																									
Attack																																										
Sub Navigation/ Sub Nav Under	8								_	_	_				_		_																									
Precision	18						_			-	-													-																		
Anchoring																																										
Unmanned Aerial Vehicle	1000																																									
Direct Action TAC-P)	18																																									
ntelligence, Surveillance, Reconnaissance	16	1	16.0 MQ-	4C 4.0	64.0	100% 64	0;	% 50)% 50%	. 0.00	32.0	0.00	0	0	0	0	0	0	67	1243	21	113	20 18	0	0	0	0	0	0	67	1243	21	113	20	18	1 2,532	162048	23831	501729	16	14	507,073
Underwater	16	1	16 ST-	2.0	32.0	100% 32	2.0 100	0% 07	×. 0%.	32.00	0.00	0.00	240	246	21	15	161	145	0	0	0	0	0 0	0	0	0	0	0	0	240	246	21	15	161	145	2 1200	38400	5647	118893	4	3	120,159
Survey												_																														
Unmanned Underwater Vehicle Training	0																																									
TOTAL TRAINI	NG (Ib<	s per er	ear)										339.37	6 233,63	9 48,36	5 15.57	3 98.494	88.644	28,576	32,577	4.034	.827 1	5,278 13,75	51 59,21	0 838,87	6 8.378	23,339	375.026	337,524	426.855	1.103.604	60,736	40.611	488.618	439,756		436,107.25	1 64.133.425	1,349,644,51	1 43,783	38,142	1.364.018 21
TOTAL TRAINI													17				3 4:										20,000	188				30						64,133,425			19	

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Appendix D Air Quality Emissions Calculations

MEM Category	Location	Training MEM	Testing MEM		Emi	ssions Traini	(Ib/year) ng				Er	nissions Test		r)	
		#/yr	#/yr	CO	NOx	VOC	SOx	PM10	PM2.5	CO	NOx	VOC	SOx	PM10	PM2.5
BOMBS	1														
Bombs (H-E)	МПТ	6,454	0	394,551.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombs (N-E)	МПТ	3,038	0	774.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROJECTILES															
Small Caliber	МПТ	138,640	0	318.9	13.4	0.0	0.0	7.1	5.3	0.0	0.0	0.0	0.0	0.0	0.0
Medium Caliber (H-E)	МПТ	25,500	2040	102.0	33.2	0.0	0.0	242.3	130.1	8.2	2.7	0.0	0.0	19.4	10.4
Medium Caliber (N-E)	мпт	179,650	2040	467.1	17.4	0.0	0.0	25.2	21.6	5.3	0.2	0.0	0.0	0.3	0.2
Large Caliber (H-E)	МПТ	2,500	3290	320.0	400.0	0.0	0.0	24.0	18.6	421.1	526.4	0.0	0.0	31.6	24.5
Large Caliber (N-E)	МПТ	7,038	2310	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missiles (H-E)	МПТ	210	12	6,430.9	7,470.5	0.0	0.0	12,977.0	12,977.0	367.5	426.9	0.0	0.0	741.5	741.5
Missiles (N-E)	МПТ	0	12	0.0	0.0	0.0	0.0	0.0	0.0	367.5	426.9	0.0	0.0	741.5	741.5
Rockets (H-E)	МПТ	2,114	8	1,966.0	11.8	0.0	0.0	845.6	613.1	7.4	0.0	0.0	0.0	3.2	2.3
Rockets (N-E)	МПТ	0	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COUNTERMEASURES															
Chaff	МПТ	25,840	0	1.5	3.9	0.0	0.0	7.3	6.7	0.0	0.0	0.0	0.0	0.0	0.0
Flares	МПТ	25,600	0	1.5	3.9	0.0	0.0	7.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0
TARGETS															
Airborne targets	МПТ	12	0												
Surface targets	МПТ	200	0												
Expendable sub-surface targets	МПТ	87	0												
TOTAL EMISSIONS (Ibs	per year)			404,934	7,954	0	0	14,136	13,779	1,177	1,383	0	0	1,538	1,521
TOTAL EMISSIONS (ton	s per year)			202.5	4.0	0.0	0.0	7.1	6.9	0.6	0.7	0.0	0.0	0.8	0.8

Table D-7: Emissions from Ordnance – No Action Alternative

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Table D-8: Vessel Emissions – Alternative 1

Image: Probability Image:					OPERATIONA	L INFO	BMATI	ION - V	ESSEL	S						EMISS	NONSA	'EAR (II	ывүј	URISD	ICTION							EMISSI	ONSAY	EAR (II) BY J	URISD	ICTION						GHG Em	nissions (ы	
Name Name Name Name Na		8		S			-			_	tribution	n (hr)		Sta								S (3-12	nm)			Int									s		H					
Mode Mode <	TypeTraining	Training Ops	NIMITER	Ship Type	atyt	Participatio	PerShp	Time at Eact Power	Total	0-3 im from shore	3-12 III from shore	> 12 mm from shore	со	NO.	нс	so.	PM 11	PM2.5	со	NO.	нс	so.	PM 11	P M 2.5	со	NO.	нс	SO.	РМа	P M 2.5	со	NO.	нс	so.	PM 11	PM2.5	How (Annual Fuel Consumptio n (gal)	co,	NzO	СН4	CO 2.,
Additional lists Additeral lists	ANTI-AIR WARFARE																																									
Abis and the state Abis an	Air Combat Maneuver	3600																																								
Concrepance Antibolization of the state of the	Air Defense Exercise	100																																								
Image: Antione state st	Air Intercept Control	5300																																								
	Gunnery Exercise, A-A (Medium Caliber)	r) 36																																								
Lamic series of the series Lamic series <thlamic series<="" th=""> <thl< td=""><td>Missile Exercise, A-A</td><td>18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thl<></thlamic>	Missile Exercise, A-A	18																																								
Image: State	Gunnery Exercise, S-A (Large Caliber)	6	12	FFG	Guided Missile Frigate	2.00	2.0	100%	24.0	0.0	0.0	24.0	0	0	0	0	0	0	0	0	0	0	0	0	791	1,132	72	838	55	50	791	1,132	72	838	55	50	79	1,896	39,918	1	1	40,344
Image: And the series of the series	Gunnery Exercise, S-A (Medium Caliber)	r) 13	26	FFG	Guided Missile Frigate	2.00	2.0	100%	52.0	0.0	0.0	52.0	0	0	0	0	0	0	0	0	0	0	0	0	1,713	2,452	156	1,816	120	108	1,713	2,452	156	1,816	120	108	73	4,108	86,430	3	2	87,411
Basic Description Single D	Missile Exercise, S-A	18	36	FFG	Guided Missile Frigate	2.00	2.0	100%	72.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	0	0	0	0	0
Basic Description Single D	STRIKE WARFARF																																							_	<u> </u>	
Convery Energies, All and Bard Converse Converse <th< td=""><td></td><td>2300</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		2300																																								
Appendix Market Appendix M	Missile Exercise, A-G	115																																								
Inc. State Inc. St	Gunnery Exercise, A-G	96							_																																	
target target i or or or or reg or or	AMPHIBIOUS WARFARE																																		1					<u> </u>		
Matrix Air Ground Tack Force A Matrix Air Ground Tack Force A Matrix Air Ground Tack Force A A A B <td></td> <td>10</td> <td>10</td> <td>CG</td> <td>Cruiser</td> <td>1</td> <td>8.0</td> <td>100%</td> <td>80.00</td> <td>80.0</td> <td>0.0</td> <td>0.0</td> <td>4,921</td> <td>6,366</td> <td>346</td> <td>6,210</td> <td>223</td> <td>201</td> <td>0</td> <td>4,921</td> <td>6,366</td> <td>346</td> <td>6,210</td> <td>223</td> <td>201</td> <td>184</td> <td>14,720</td> <td>309,915</td> <td>10</td> <td>9</td> <td>313,215</td>		10	10	CG	Cruiser	1	8.0	100%	80.00	80.0	0.0	0.0	4,921	6,366	346	6,210	223	201	0	0	0	0	0	0	0	0	0	0	0	0	4,921	6,366	346	6,210	223	201	184	14,720	309,915	10	9	313,215
Image: Second	Amphibious Rehearsal, No Landing - Marine Air Ground Task Force	12													12,488				0	0	0	0	0	0	0	0	0	0	0	0							-				870 870	31,106,382 31,106,382
Analybic Action Arrive Arriv				1.00	Amphibious Transport Dock										2,972				0	0	0		-	-	·		0	0	0	0											870	31,106,382
Index Index <th< td=""><td>Amphibious Assault - Marine Air Ground</td><td>d 12</td><td>12</td><td></td><td>· ·</td><td>1</td><td>8.0</td><td>100%</td><td>. 96.0</td><td>96.0</td><td>0.0</td><td>0.0</td><td>5,905</td><td>7,640</td><td>415</td><td>7,452</td><td>268</td><td>241</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>5,905</td><td>7,640</td><td>415</td><td>7,452</td><td>268</td><td>241</td><td>184</td><td>121,824</td><td>2,564,882</td><td>83</td><td>72</td><td>2,532,138</td></th<>	Amphibious Assault - Marine Air Ground	d 12	12		· ·	1	8.0	100%	. 96.0	96.0	0.0	0.0	5,905	7,640	415	7,452	268	241	0	0	0	0	0	0	0	0	0	0	0	0	5,905	7,640	415	7,452	268	241	184	121,824	2,564,882	83	72	2,532,138
Image: And State Vace Vac	Task Force		12	LHA	Tarawa		8.0	100%	96.0	96.0	0.0	0.0	708	4,179	531	12,573	2,524	2,271	0	0	0	0	0	0	0	0	0	0	0	0	708	4,179	531	12,573	2,524	2,271	373	121,824	2,564,882	83	72	2,592,198
Amplibious Radie Special Purple in the formation of the second state of the second			24	LPD	Amphibious Transport Dock · Wasp	2	8.0	100%	192.0	192.0	0.0	0.0	668	4,032	495	11,677	2,467	2,220	0	0	0	0	0	0	0	0	0	0	0	0	668	4,032	495	11,677	2,467	2,220	373	243,648	5,129,765	166	145	5,184,397
Marine Air Ground Task Force 6 6 LM Tarkwa 1 6.0 0.0 9.0 0.0 9.0 0.0 <th< td=""><td></td><td></td><td>24</td><td>FFG</td><td>Guided Missile Frigate</td><td>2</td><td>8.0</td><td>100%</td><td>192.0</td><td>192.0</td><td>0.0</td><td>0.0</td><td>6,324</td><td>9,055</td><td>576</td><td>6,705</td><td>444</td><td>399</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>6,324</td><td>9,055</td><td>576</td><td>6,705</td><td>444</td><td>399</td><td>79</td><td>243,648</td><td>5,129,765</td><td>166</td><td>145</td><td>5,184,397</td></th<>			24	FFG	Guided Missile Frigate	2	8.0	100%	192.0	192.0	0.0	0.0	6,324	9,055	576	6,705	444	399	0	0	0	0	0	0	0	0	0	0	0	0	6,324	9,055	576	6,705	444	399	79	243,648	5,129,765	166	145	5,184,397
And Price And Price <t< td=""><td></td><td>6</td><td>6</td><td>LHA</td><td>Amphib. Assault Ship - Tarawa</td><td>1</td><td>6.0</td><td>100%</td><td>36.0</td><td>36.0</td><td>0.0</td><td>0.0</td><td>266</td><td>1,567</td><td>199</td><td>4,715</td><td>946</td><td>852</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>266</td><td>1,567</td><td>199</td><td>4,715</td><td>946</td><td>852</td><td>373</td><td>45,684</td><td>961,831</td><td>31</td><td>27</td><td>972,074</td></t<>		6	6	LHA	Amphib. Assault Ship - Tarawa	1	6.0	100%	36.0	36.0	0.0	0.0	266	1,567	199	4,715	946	852	0	0	0	0	0	0	0	0	0	0	0	0	266	1,567	199	4,715	946	852	373	45,684	961,831	31	27	972,074
And bit is a state of			12	LPD	Amphibious Transport Dock - Wasp	2	2.5	100%	30.0	30.0	0.0	0.0	104	630	77	1,825	386	347	0	0	0	0	0	0	0	0	0	0	0	0	104	630	77	1,825	386	347	373	38,070	801,526	26	23	810,062
And bit is a state of the state of	Non-Combatant Evacuation Operation		5	LHA	Amphib. Assault Ship - Tarawa	1	80.0	100%	400.0	400.0	0.0	0.0	2,952	17,412	2,212	52,388	10,516	9,464	0	0	0	0	0	0	0	0	0	0	0	0	2,952	17,412	2,212	52,388	10,516	3,464	373	149,200	3,141,257	102	89	3,174,711
Image: Second		5	-		Amphibious Transport Dock -	- 2	80.0	100%	800.0	800.0	0.0	0.0	2,784	16,800	2,064	48,656	10,280	9,252	0	0	0	0	0	0	0	0	0	0	0	0	2,784	16,800	2,064	48,656	10,280	9,252	373	298,400	6,282,514	204	178	6,349,422
Relief Operations 5 5 LINA Tarawa 1 0.0 100. 40.0 0.0 235 1,741 221 5,233 1,052 346 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 235 1,741 221 5,233 1,052 346 373 50,760 1,056,701 35			5	LCU		1	80.0	100%	400.0	400.0	0.0	0.0	7,328	45,812	1,396	21,844	2,056	1,850	0	0	0	0	0	0	0	0	0	0	0	0	7,328	45,812	1,396	21,844	2,056	1,850	611	244,400	5,145,598	167	145	5,200,398
10 LPD Amphibious Transport Dock- 2 8.0 100% 80.0 80.0 0.0 0.0 278 1,680 206 4,866 1,028 325 0 0 0 0 0 0 0 0 0 0 0 0 0 278 1,680 206 4,866 1,028 325 373 101.520 2,137.402 69	Humanitarian Assistance' Disaster Relief Operations	5	5	LHA	Amphib. Assault Ship - Tarawa	1	8.0	100%	40.0	40.0	0.0	0.0	295	1,741	221	5,239	1,052	946	0	0	0	0	0	0	0	0	0	0	0	0	295	1,741	221	5,239	1,052	946	373	50,760	1,068,701	35	30	1,080,083
wash			10	LPD	Amphibious Transport Dock · Wasp	2	8.0	100%	80.0	80.0	0.0	0.0	278	1,680	206	4,866	1,028	925	0	0	0	0	0	0	0	0	0	0	0	0	278	1,680	206	4,866	1,028	325	373	101,520	2,137,402	69	60	2,160,165
S LCAC Landing Craft Air Cushioned 1 8.0 100% 40.0 0.0 7.33 4,58 140 2,184 206 185 0 <td></td> <td></td> <td>5</td> <td>LCAC</td> <td>Landing Craft Air Cushioned</td> <td>1</td> <td>8.0</td> <td>100%</td> <td>40.0</td> <td>40.0</td> <td>0.0</td> <td>0.0</td> <td>733</td> <td>4,581</td> <td>140</td> <td>2,184</td> <td>206</td> <td>185</td> <td>0</td> <td>733</td> <td>4,581</td> <td>140</td> <td>2,184</td> <td>206</td> <td>185</td> <td>611</td> <td>50,760</td> <td>1,068,701</td> <td>35</td> <td>30</td> <td>1,080,083</td>			5	LCAC	Landing Craft Air Cushioned	1	8.0	100%	40.0	40.0	0.0	0.0	733	4,581	140	2,184	206	185	0	0	0	0	0	0	0	0	0	0	0	0	733	4,581	140	2,184	206	185	611	50,760	1,068,701	35	30	1,080,083
Umanned Aerial Vehicle - Intelligence, and Reconsistance 100		. 100																																								

ANTI-SURFACE WARFARE																																									
Gunnery Exercise, A-S (Small Caliber) -																																									
Ship	321																																								
Gunnery Exercise, A-S(Medium Caliber) - Ship	120																																								
Missile Exercise (A-S) - Rocket	110																																								
Missile Exercise (A-S)	10																																								
Laser Targeting	600																	_																							
Bombing Exercise (A-S)	37																																								
Torpedo Exercise (Submarine to Surface)		I																																		-					
Torpedo Exercise (Submarine to Surface)	0																																								
Missile Exercise (S-S)	19	38	FFG	Guided Missile Frigate	2.00	2.0	100%	76.0	0.0	0.0	76.0	0	0	0	0	0	0	0	0	0	0	0	0	2,503	3,584	228	2,654	176	158	2,503	3,584	228	2,654	176	158	79	6,004	126,408	4	4	127,754
Gunner Exercise (Surface-to-Surface)		30.8	00	Cruiser	0.22	2.5	100%	77.00	0.0	21.6	55.4	0	0	0	0	0	0	1,326	1.716	93	1674	60	54	3,410	4.412	240	4.304	155	139	4.736	6.128	333	5.978	215	193	184	14,168	298,293	10	8	301,470
Ship - Large-caliber	140	63	DDG	Cruiser				157.5				• •	0	0		, , , , , , , , , , , , , , , , , , ,	0				401.0					455	10.039	100	371		18.037										626,697
					0.45		100%		0.0	44.1	113.4	0	0	0	0	0	0	2,653	633	1111	3,904	161 34	144	6,822	12,987	455	10,033	413	79	9,475		632 158	13,943	573	516	187	29,453 4,148	620,093 87,321	20	18	88,251
		21		Guided Missile Frigate	0.15		100%	52.5 42.0	0.0	14.7	37.8 30.2	0	0	0	0	0	0	404 68	633	44	136	34	31	1,245	1,783		1,320	or e	(3 6	1,729	2,476	37	485	121	109	79 66	2,772	58,362		2	58,983
		10.0	0304	US Coast Guard	0.12	2.0	1007.	42.0	0.0	11.0	30.2	0	0				0	00	001	10	130	<u>د</u>	2	114	1,101	27	343	0	0	241	2,432	51	405	3	0	00	2,112	50,302	2	2	30,303
Gunner Exercise (Sufface-to-Sufface) Ship - Medium-caliber	100	22		Cruiser	0.22	2.5	100%	55.00	0.0	15.4	39.6	0	0	0	0	0	0	947	1,226	67	1,196	43	39	2,436	3,151	171	3,074	110	99	3,383	4,377	238	4,270	153	138	184	10,120	213,066	7	6	215,336
		45	DDG		0.45	2.5	100%	112.5	0.0	31.5	81.0	0	0	0	0	0	0	1,895	3,607	' 126	2,789	115	103	4,873	9,276	325	7,171	295	265	6,768	12,884	451	9,960	410	369	187	21,038	442,924	14	13	447,641
		15	FFG	Guided Missile Frigate	0.15	2.5	100%	37.5	0.0	10.5	27.0	0	0	0	0	0	0	346	495	32	367	24	22	889	1,273	81	943	62	56	1,235	1,769	113	1,310	87	78	79	2,963	62,372	2	2	63,037
		1	LPD	Amphibious Transport Dock - Wasp	0.01	2.5	100%	2.5	0.0	0.7	1.8	0	0	0	0	0	0	2	15	2	43	э	8	6	38	5	109	23	21	э	53	6	152	32	29	373	933	19,633	1	1	19,842
		12		US Coast Guard	0.12	2.5	100%	30.0	0.0	8.4	21.6	0	0	0	0	0	0	48	486	7	97	2	2	124	1,251	19	249	5	4	172	1,737	26	347	6	6	66	1,980	41,687	1	1	42,131
Sinking Exercise (SINKEX)	21	105	FFG	Guided Missile Frigate	5.00	16.0	100%	1680.0	0.0	0.0	1680.0	0	0	0	0	0	0	0	0	0	0	0	0	55,339	79,229	5,040	58,666	3,881	3,493	55,339	79,229	5,040	58,666	3,881	3,493	79	132,720	2,794,287	91	79	2,824,046
Gunnery Exercise (S-S) Boat - Medium- caliber	20	100	FFG	Guided Missile Frigate	5.00	3.0	100%	300.0	0.0	0.0	300.0	0	0	0	0	0	0	0	0	0	0	0	0	9,882	14,148	900	10,476	693	624	9,882	14,148	900	10,476	693	624	79	23,700	498,980	16	14	504,294
Gunnery Exercise (S-S) Small-caliber	43	86	CRRC	Combat Rubber Raiding Craft	2	3.0	100%	258.0	0.0	0.0	258.0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	3,329	0	0	0	0	38	3,329	0	0	0	3	774	16,296	1	0	16,469
Maritime Security Operations(MSO)	40	40	FFG	Guided Missile Frigate	1	8.0	100%	320.0	0.0	0.0	320.0	0	0	0	0	0	0	0	0	0	0	0	0	10,541	15,091	960	11,174	739	665	10,541	15,091	960	11,174	739	665	79	25,280	532,245	17	15	537,914
				Rigid Hulled Inflatable Boat	1	8.0	100%	320.0	0.0	0.0	320.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	108.8	2924.8	19.2	460.8	48.0	43	109	2,925	19	461	48	43	14	4,480	94,322	3	3	95,326
		40	CRRC	Combat Rubber Raiding Craft	1	8.0	100%	320.0	0.0	0.0	320.0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	4,128	0	0	0	0	48	4,128	0	0	0	3	960	20,212	1	1	20,427

ANTI-SUBMARINE WARFARE																																						
Tracking Exercise-Helo	65								_																													
Torpedo Exercise-Helo	4																																					
Tracking Exercise-Maritime Patrol																																						
Advanced Extended Echo Ranging																																						
Sonobuoys	0																															_		'				
Tracking Exercise -Maritime Patrol Aircraft	36																										-			-								
Fracking Exercise -Mantime Patrol Aircrart	- 30																																					
Torpedo Exercise-Maritime Patrol Aircraft	4																																					
-																																						
Tracking Exercise -Surface	91	91 FFG Guided Missile Frigate	1	2.0	100%	182.0	0.0	91.0	91.0	0	0	0	0	0	0	2,998	4,292	273	3,178	210	189	2,998	4,292	273 3,1	78 210	189	5,335	8,583	546	6,355	420	378	79	14,378	302,714	10	9	305,938
Tracking Exercise -Suirace																																						
		4 FFG Guided Missile Frigate	1	2.0	100%	8.0	0.0	4.0	4.0	0	0	0	0	0	0	132	189	12	140	9	8	132	189	12 14	.o 9	8	264	377	24	279	18	17	79	632	13,306	0	0	13,448
Torpedo Exercise-Surface	4	4 III G Galded Hissile I figate	· ·	2.0	10071	0.0	0.0	4.0	4.0	, v	Ť	•		Ů	Ů	102	100		140	· ·	Ť	1012	100				204	•		210	10				10,000			10,440
Tracking Exercise- Submarine	4																										_											
Tracking Exercise- Submanne	4																																					
Torpedo Exercise - Submarine	6																																	<u> </u>				
Small Joint Coordinated ASW exercise																																						
(Multi-Sail/GUAMEX)	2																																					
MAJOR TRAINING EVENTS																					_													<u> </u>		<u> </u>	<u> </u>	
		1.0 CVN Nuclear Carrier (No		80.0	100%	80.0		80.0	0.0										_		_	_	-		_	_	-	-										
Joint Expeditionary Exercise	1	emissions)	1				0.0																															
		1.0 CG	1	80.0	100%	80.0	0.0	80.0	0.0	0	0	0	0	0	0	4,921	6,366	346	6,210	223	201	0	0	0) 0	0	4,921	6,366	346	6,210	223	201	184	14,720	309,915	10	9	313,215
		2.0 FFG	2	80.0	100%	160.0	0.0	160.0	0.0	0	0	0	0	0	0	5,270	7,546	480	5,587	370	333	0	0	0	0 0	0	5,270	7,546	480	5,587	370	333	79	12,640	266,123	9	8	268,957
		5.0 DDG	5	80.0	100%	400.0	0.0	400.0	0.0	0	0	0	0	0	0	24,064	45,808	1,604	35,412	1,456	1,310	0	0	0	· ·	0	24,064	45,808	1,604	35,412	1,456	1,310	187	74,800	1,574,839	51	45	1,591,611
		1.0 LHD/LHA	1	80.0	100%	80.0	0.0	80.0	0.0	0	0	0	0	0	0	590	3,482	442	10,478	2,103	1,893	0	0	0	· ·	0	590	3,482	442	10,478	2,103	1,893	373	29,840	628,251	20	18	634,942
		2.0 LSD 1.0 LPD	2	80.0 80.0	100%	160.0 80.0	0.0	160.0 80.0	0.0	0	0	0	0	0	0	1,293 278	7,653	923 206	21,680 4,866	4,573 1.028	4,116 325	0	0	0	0 0	0	1,293	7,653	923 206	21,680 4,866	4,573 1,028	4,116	373 373	59,680 29,840	1,256,503 628,251	41 20	36	1,269,884 634,942
		1.0 TAOE	1	80.0	100%	80.0	0.0	80.0	0.0	0	0	0	0	0	0	8,781	24,305	848	4,000	833	750	0	0	0		0	8,781	24,305		4,000	833	750	1,865		3,141,257	102	89	3,174,711
										U	0	0	0	0	0	0,101	24,305	040	3,533	033	750	0	0	0	, ,	0	0,101	24,305	040	3,533	000	190	1,005	143,200	3,141,257	102	03	3,174,711
		1.0 SSN Nuclear Carrier (No emissions)	1	80.0	100%	80.0	0.0	80.0	0.0																													
		1.0 SSGN Nuclear Carrier (No	1	80.0	100%	80.0	0.0	80.0	0.0																													
		emissionsj																																				
		2.0 T-AGO(LFA)	2	80.0	100%	160.0	0.0	160.0	0.0	0	0	0	0	0	0	1,067	6,299	800	19,109	3,803	3,423	0	0	0		0	1,067	6,299	800	19,109	3,803	3,423	1,865		6,282,514	204	178	6,343,422
		1.0 CG-PARTNER	1	80.0	100%	80.0	0.0	80.0	0.0	0	0	0	0	0	0	8,623	3,768	792	1,680	208	187	0	0	0		0	8,623	3,768	792	1,680	208	187	184	14,720	309,915	10	9	313,215
		2.0 DDG-PARTNER	2	80.0	100%	160.0 80.0	0.0	160.0 80.0	0.0	0	0	0	0	0	0	16,638	7,984	1,440	2,864	400 837	360 753	0	0	0	0 0	0	16,638	7,984	1,440	2,864	400	360	187 373	29,920	629,936	20	18 18	636,644 634,942
		1.0 SS-PARTNER 5.0 LCAC	5	80.0 80.0	100%	400.0	0.0	400.0	0.0	0	0	0	0	0	0	7.328	45.812	1.396	21.844	2.056	1,850	0	0	0	, ,	0	7,328	45,812	1,396	21,844	837 2,056	753	611	29,840 507,600	628,251 10,687,010	20	302	10,800,827
		2.0 LCU	2	80.0	100%	400.0	0.0	160.0	0.0	0	0	0	0	0	0	2,931	45,012	558	21,044	822	740	0	0	0		0	2,931	18.325	558	8,738	822	740	611	97,760	2,058,239	67	58	2,080,159
		19.0 CRRC	19	80.0	100%	1520.0	0.0	1520.0	0.0	0	0	0	0	0	0	2,001	226	19,610	0,100	022	0	0	0	0) 0) 0	0	2,001	226	19,610	0,100	022	0	3	4,560	36,006	3	3	97,029
		2.0 RHIB	2	80.0	100%	160.0	0.0	160.0	0.0	0	0	0	0	0	ů 0	54	1.462	10	230	24	22	0	ů.	0		0	54	1,462	10,010	230	24	22	373	53.680	1,256,503	41	36	1,269,884
		14.0 AAV	14	80.0	100%	1120.0	0.0	1120.0	0.0	0	0	0	0	0	0	851	6,366	918	1.400	291	262	0	0	0		0	851	6,966	918	1,400	291	262	3	3,360	70,741	2	2	71,495
														-	-									-														
Joint Multi-Strike Group Exercise	1	3.0 CVN	3	80.0	100%	240.0	0.0	0.0	240.0																													
· · · · ·		3.0 CG	3	80.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	14,762	19,099	1,037 18,	631 670	0 603	14,762	19,099	1,037	18,631	670	603	184	44,160	929,745	30	26	939,646
		3.0 FFG	3	80.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	7,906	11,318	720 8,3	81 554	4 499	7,906	11,318	720	8,381	554	499	79	18,960	399,184	13	11	403,435
		12.0 DDG	12	80.0	100%	960.0	0.0	0.0	960.0	0	0	0	0	0	0	0	0	0	0	0	0			3,850 84,		4 3,145	57,754	109,939	3,850	84,989	3,494	3,145	187	179,520	3,779,614	123	107	3,819,867
		3.0 TAOE	3	80.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	26,342	74,714	2,544 28,	798 2,49	8 2,245	26,342	74,714	2,544	28,798	2,498	2,249	1,865	447,600	9,423,770	306	266	9,524,134
		5.0 SSN	5	80.0	100%	400.0	0.0	0.0	400.0																													
		2.0 T-AGO(LFA)	2	80.0	100%	160.0	0.0	0.0	160.0	0	0	0	0	0	0	0	0	0	0	0	0	1,067	6,233		109 3,80			6,299	800	19,109	3,803		1,865			204	178	6,349,422
		1.0 SS-PARTNER	1	80.0	100%	80.0	0.0	0.0	80.0	0	0	0	0	0	0	0	0	0	0	0	0	235	1,386	176 4,1	69 837	7 753	235	1,386	176	4,163	837	753	373	29,840	628,251	20	18	634,942
Marine Air Ground Task Force Exercise																										_	-						——					
(Amphibious)	4	4.0 LHD/LHA	1	80.0	100%	320.0	320.0	0.0	0.0	2,362	13,930	1,770	41,910	8,413	7,572	0	0	0	0	0	0	0	0	0	0 0	0	2,362	13,930	1,770	41,910	8,413	7,572	373	119,360	2,513,005	82	71	2,539,769
		4.0 LSD	1	80.0	100%	320.0	320.0	0.0	0.0	2,586	15,306	1,846	43,360	9,146	8,231	0	0	0	0	0	0	0	0	0) 0	0	2,586	15,306	1,846	43,360	9,146	8,231	373	119,360	2,513,005	82	71	2,539,769
		4.0 LPD	1	80.0	100%	320.0	320.0	0.0	0.0	1,114	6,720	826	19,462	4,112	3,701	0	0	0	0	0	0	0	0	0	0 0	0	1,114	6,720	826	19,462			373		2,513,005	82	71	2,539,769
Special Purpose Marine Air Ground Task Force Exercise	L , T	2.0 LHA Amphib. Assault Ship -	1	80.0	100%	160.0	52.8	52.8	54.4	390	2,298	292	6,915	1,388	1,249	390	2,298	292	6,915	1,388	1,249	401	2,368	301 7,1	25 1,43	0 1,287	1,181	6,965	885	20,955	4,206	3,786	373	59,680	1,256,503	41	36	1,269,884
i orce Exercise	2	Tarawa									-			-	-				-		-		-															
		4.0 LPD Amphibious Transport Dock - Wasp	2	80.0	100%	320.0	105.6	105.6	108.8	367	2,218	272	6,423	1,357	1,221	367	2,218	272	6,423	1,357	1,221	379	2,285	281 6,6	1,39	8 1,258	1,114	6,720	826	19,462	4,112	3,701	373	119,360	2,513,005	82	71	2,539,769
		Wasp									1																											

Appendix D Air Quality Emissions Calculations

ELECTRONIC WARFARE																																								
Electronic Waifare Operations	522	522	FFG Guided Missile Frigate	1	4	100%	2088.0	0.0	0.0	2088.0	0	0	0	0	0	0	0	0	0	0	0	0	68,779	9 98,470	6,264	72,913	4,823	4,341	68,775	98,470	0 6,264	72,91	3 4,823	3 4,34	1 79	164,952	3,472,893	113	98	3,509,886
Flare Exercise	2200																																							
Chaff Exercise - Ship	41	41	FFG Guided Missile Frigate	1	4	100%	164.0	0.0	0.0	164.0	0	0	0	0	0	0	0	0	0	0	0	0	5,402	7,734	492	5,727	379	341	5,402	7,734	492	5,727	379	341	79	12,956	272,776	э	8	275,681
Chaff Exercise - Aircraft	2200																																							
MINE WARFARE									1																1	1														
Civilian Port Defense	1	1	RHIB Rigid Hulled Inflatable Boat	1	24.0	100%	24.0	24.0	0.0	0.0	8.2	219.4	1.4	34.6	3.6	3	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	8	219	1	35	4	3	14	336	7,074	0	0	7,149
Mine Laying - Aircraft	4																																							
Mine Neutralization - Explosive Ordnance Disposal	20	60	RHIB Rigid Hulled Inflatable Boat	3	12.0	100%	720.0	720.0	0.0	0.0	244.8	6580.8	43.2	1036.8	108.0	97	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	245	6,581	43	1,037	108	97	14	10,080	212,224	7	6	214,485
Limpet Mine Neutralization System/Shock Wave Generator	60	60	RHIB Rigid Hulled Inflatable Boat	1	4.0	100%	240.0	240.0	0.0	0.0	81.6	2193.6	14.4	345.6	36.0	32	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	82	2,194	14	346	36	32	14	3,360	70,741	2	2	71,495
Airborne Mine Countermeasure - Mine Detection	4																																							
Mine Countermeasure Exercise - Towed Sonar (AQS-20,LCS)	4																																							
Mine Countermeasure Exercise - Surface (SMCMEX) Sonar (SQQ-32, MCM)	4																																							
Mine Neutralization - Remotely Operated Vehicle Soanr (ASQ-235 [AQS-20], SLQ- 48)	4																																							
Mine Countermeasure - Towed Mine Detection	4																																							
Underwater Demolition Qualification/Certification	45	45	CRRC Combat Rubber Raiding Craft	1	8.0	100%	360.0	0.0	360.0	0.0	0	0	0	0	0	0	0	53	4,645	0	0	0	0	0	0	0	0	0	0	53	4,645	5 0	0	0	3	1,080	22,738	1	1	22,980
Submarine Mine Exercise	1																																							
NAVAL SPECIAL WARFARE																																								
	365	1825	RHIB Rigid Hulled Inflatable Boat	5	8.0	100%	14600.0	14600.0	0.0	0.0	4964.0	******	876.0	21024.0	2190.0	1,971	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	4,964	133,444	4 876	21,02	4 2,190) 1,971	48	700,800	14,754,643	479	417	14,911,780
Personnel I&E	300		CRRC Combat Rubber Raiding Craft	6	8.0	100%	17520.0	17520.0	0.0	0.0	0	2,603	226,033	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,603	226,03	33 0	0	0	3	52,560	1,106,538	36	31	1,118,384
Parachute Insertion	64																																							
Embassy Reinforcement	0	0	LCAC Landing Craft Air Cushioned	1	24.0	100%	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	611	0	0	0	0	0
Underwater Demolition Qualifications	0	0	CRRC Combat Rubber Raiding Craft	1	8.0	100%	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
Intelligence, Surveillance, Reconnaissance	44																																							
Urban Warfare Training	0	0.0	l arawa	1	40.0	100%	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	373	0	0	0	0	0
		0.0	LPD Amphibious Transport Dock - Wasp	2	40.0	100%	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	373	0	0	0	0	0
		0.0	Wasp	2	40.0	1007.	0.0	0.0	0.0	0.0	0	J	J	0	0	0	0		0	0		0		0	0	0	0		0	0	0	0	0	0	513	0		0		_

DTHER																																						
Direct Action (Tactical Air Control Party)	30																																					
ntelligence, Surveillance, Reconnaissanc	44																																					
Surface Ship Sonar Maintenance	44	44	FFG Guided Missile Frigate	1 4.0	0 100%	176.0	176.0	0.0 0.0	0 5,797	8,300	528	6,146	407	366	0	0	0	0	0	0	0	0	0	0	0	0	5,797	8,300	528	6,146	407	366	79	13,904	292,735	9	8	295,852
Submarine Sonar Maintenance	32																																					
Small Boat Attack	18	18	CRRC Combat Rubber Raiding Craft	1 4.0	0 100%	72.0	0.0	72.0 0.	0 0	0	0	0	0	0	0	11	929	0	0	0	0	0	0	0	0	0	0	11	929	0	0	0	3	216	4,548	0	0	4,596
Sub Navigation / Sub Nav Under Ice	8																																					
Precision Anchoring	18	18	FFG Guided Missile Frigate	1 4.0	0 100%	72.0	72.0	0.0 0.0	0 2,372	3,396	216	2,514	166	150	0	0	0	0	0	0	0	0	0	0	0	0	2,372	3,396	216	2,514	166	150	79	5,688	119,755	4	3	121,031
Unmanned Aerial Vehicle Operation	950																																					
Search and Rescue At Sea	45																																					
Underwater Survey	<u></u>		RHIB Rigid Hulled Inflatable Boat	3 8.0	0 100%	768.0	768.0	0.0 0.	0 261.1	7019.5	46.1	1105.9	115.2	104	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	261	7,020	46	1,106	115	104	48	36,864	776,135	25	22	784,400
		96	CRRC Combat Rubber Raiding Craft	3 8.0	0 100%	768.0	768.0	0.0 0.0	0 0	114	9,908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	9,908	0	0	0	3	2,304	48,508	2	1	49,025
Unmanned Underwater Vehicle Training	64																																					
FOTAL TRAINING (Ibs per year)							41,944	111 11	\$ 91,611	790,484	273,658	603,139	110,685	99,617	94,583	212,698	37,531	181,238	22,441 2	20,197	287,014	492,662	33,016	373,419 2	6,975 2	4,278 4	473,208	1,495,844	344,205	1,157,796	160,102	144,092	2	10,389,887	218,748,670	7,096	6,182	221,078,34
TOTAL TRAINING (tons per year)									46							106		91	11	10	144	246	17	187	13	12	237	748							109,374		3	110,539

					() PER/	ATIO	NAL IN	IFORM	IATION	i - Air	CRAF	T						EM	ISSIO	NSIYE	EAR (II	5) BY (iurisi	DICTIC	N						EMISSI	ONSA	/EAR (I	Ib) BY	JURIS	DICTI	DN			Tra	ining l	Platform	An An	nual Fue	Use	~	HG Enis		
			Aircr	aft		Time		Alti	tude	Di	stributi	ion (%))	Distr	ibution	(hr)		State	(0-3 n	n offs	hore)			Vate	rsof U	S (3-12	nm)			In	t Vater	s (> 12 r	n m)				Total	E m issio	ns			Inform	ation		(total)				ions (it	J
Type Training	Training ops 🕅	Distribution	AC Sortes		Ave Time of	range (n) Total Time or	Range (1)	Thre < 3,000 ft (%)	Thre < 3,000 ft (0)	0-3 m from shore	3-12 m from Shore	>12 mm from	Shore Total Time D.	3 m from	Total Time 3- 12 nm from shore	Total Time > 12 mm from shore	со	NOI	нс	SO1	РМ	PMz.s	со	NOI	нс	SOI	РМ	PM2.5	со	NOx	нс	SOI	РМ	PM2.5	со	NOI	нс	SOI	PM	PMz	Engine Bodel	Bigines	Euel Row (h.h.hr)	Pour	ids Gi	allons	CO2	N ₂ O	СН4	CO 2.,
ANTI-AIR WARFAI	RE																																																	
Air Combat Maneuver	3600	1	360	0 FA- 18E/F	1.0) 36	500.0	0%	0.0	0%	0%	. 10	10%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-	GE 2	10,33	8 37216	800 54	473059	115229780	3738	3256	116,456,977
		1	360	0 AV-8) 36	500.0	0%	0.0	0%	0%	. 10	0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402	-RF 1	6,00	0 21600	000 3	3176471	66877412	2170	1890	67,589,656
Air Defense Exercise	100	2	200	0 FA- 18E/F	1.0) 20	00.0	50%	100.0	0%	0%	. 10	0%	0.00	0.00	100.00	0	0	0	0	0	0	0	0	0	0	0	0	744	15249	124	414	6782	6104	744	15249	124	414	6782	610-	F414-	GE 2	10,33	8 2067	500 3	04059	6401654	208	181	6,469,832
		_		E Å.																																					_									
Air Intercept Control	5300	2	1060	00 FA- 18E/F	1.0	106	500.0	50%	5300.0	0%	0%	10	0%	0.00	0.00	5300.00	0	0	0	0	0	0	0	0	0	0	0	0	39450	808173	6575	21917	359432	323488	39450	808173	6575	21917	35943	2 3234	88 F414-	GE 2	10,33	8 1.1E+	08 16	6115118	339287687	11007	9588 :	342,901,093
Gunnery Exercise, A- A (Medium Caliber)	36	1	36	AV-8	в 1.0) 3	36.0	0%	0.0	0%	0%	. 10	0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402	RF 1	6,00	0 2160	00 :	31765	668774	22	19	675,897
		1	36	FA- 18E/F	1.0) 3	36.0	0%	0.0	0%	0%	10	0%	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-	GE 2	10,33	8 3721	68 !	54731	1152298	37	33	1,164,570
Missile Exercise, A-A	18	+	18	AV-8	B 1.0		18.0	0%	0.0	0%	0%	10	0%	0.00	0.00	0.00		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0		0	0	0	0	0	0	F402	.DE 1	6.00	0 1080	00 .	15882	334387	11	9	337,948
alssile Exercise, ArA	10	1	18	F 4			18.0	0%	0.0	0%	0%			0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-	_	10,33			27365	576149	19	16	582,285
Gunnery Exercise, S- A(Large Caliber)	6																																																	
Gunnery Exercise, S- \(Medium Caliber)	13																																																	
Missile Exercise, S-A	18																																																	
STRIKE WARFARI	F																																								-									
Bombing Exercise, A- G		1	230	0 FA- 18E/F	1.0) 23	300.0	10%	230.0	0%	0%	. 10	0%	0.00	0.00	230.00	0	0	0	0	0	0	0	0	0	0	0	0	1712	35072	285	951	15598	14038	1712	35072	285	951	15598	3 1403	8 F414-	GE 2	10,33	8 23777	400 34	436676	73619026	2388	2081	74,403,069
Missile Exercise, A-G	115	0.5	58	FA- 18F/F	2.) 11	15.0	10%	11.5	0%	0%	. 10	0%	0.00	0.00	11.50	0	0	0	0	0	0	0	0	0	0	0	0	86	1754	14	48	780	702	86	1754	14	48	780	702	F414-	GE 2	10,33	8 11888	i70 1	74834	3680951	119	104	3,720,153
		0.5	58	SH-6	0B 2.) 11	15.0	100%	115.0	0%	0%	10	0%	0.00	0.00	115.00	0	0	0	0	0	0	0	0	0	0	0	0	863	883	76	55	580	522	863	883	76	55	580	522	T700	GE 2	120	1380	00 2	20294	427272	14	12	431,823
Gunnery Exercise, A-	36	0.5	48	FA- 18E/F	2.) 9	96.0	10%	9.6	0%	0%	10	0%	0.00	0.00	9.60	0	0	0	0	0	0	0	0	0	0	0	0	71	1464	12	40	651	586	71	1464	12	40	651	586	F414-	GE 2	10,33	8 9924	48 1	45948	3072794	100	87	3,105,519
-		0.5	48) 9	96.0	100%	96.0	0%	0%	10	0%	0.00	0.00	96.00	0	0	0	0	0	0	0	0	0	0	0	0	720	737	63	46	484	435	720	737	63	46	484	435	T700	GE 2	120	1152	00	16941	356680	12	10	360,478

Table D-9: Aircraft Emissions – Alternative 1

Table D-9: Aircraft Emissions – Alternative 1 (continued)

MPHIBIOUS WAREA	ARE																																																	
ïre Support Exercise Land-Based target	10																																																	
Amphibious Rehearsal, No Janding - Marine Air Ground Task Force	12	4	48.0	СН-53	18.0	864	l.0 1	100%	864.0	100%	0%	07	. 864	.00 0	0.00	0.00	8215	31164	579	1543	8524	7671	0	0	0	0	0	0	0	0	0	0	0	0	821	5 3116	4 573	154:	3 852	767	1 T64	-GE- 3	4,46	64 3	3856896	567191	11941631	387	337	12,068,809
		10	120.0	MV-22	18.0	2160	0.0 1	100%	2160.0	100%	0%	07	2160	0.00 0	0.00	0.00	47755	9532	8298	968	4306	3876	0	0	0	0	0	0	0	0	0	0	0	0	4775	5 953	2 829	3 968	4306	387	6	2	224	40 4	4838400	711529	14980540	486	423	15,140,083
		2	24.0	UH-1	18.0	432	2.0 1	100%	432.0	100%	0%	07	432	.00 0	0.00	0.00	779	1101	40	93	980	882	0	0	0	0	0	0	0	0	0	0	0	0	779	110	1 40	93	980	882	2 T40	D-CF 2	540	.0 ;	233280	34306	722276	23	20	729,968
		4		AH-1	18.0			100%	864.0			0%				0.00	7865	3817	400	281	2947			0	0	0	0	0	0	0	0	0	0	0	786	5 381	7 400	281	2347)-GE 2			701568	103172	2172178	70		2,195,312
		4	48.0	AV-8	18.0	864	.0	0%	0.0	100%	0%	0%	• 0.0	00 0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F40;	2-RF 1	6,00	00 5	5184000	762353	16050573	521	454	16,221,517
Amphibious Assault - Marine Air Ground Task Force	12	4	48.0	СН-53	18.0	864	.0 1	100%.	864.0	100%	0%	0%	. 864	.00 0	0.00	0.00	8215	31164	579	1543	8524	7671	0	0	0	0	0	0	0	0	0	0	0	0	821	5 3116	4 579	154:	3 8524	767	1 T64	GE- 3	4,46	64 3	3856896	567191	11941631	387	337	12,068,809
		10	120.0	MV-22	18.0	2160	0.0 1	100%	2160.0	100%	0%	07	2160	0.00 0	0.00	0.00	47755	9532	8298	968	4306	3876	0	0	0	0	0	0	0	0	0	0	0	0	4775	5 953	2 829	3 968	4306	387	6	2	224	40 4	4838400	711529	14980540	486	423	15,140,083
		2		UH-1	18.0			100%	432.0	100%	0%	0%		.00 0	0.00	0.00	779	1101	40	93	980	882		0	0	0	0	0	0	0	0	0	0	0	779		1 40	93			_	D-CF 2	54		233280	34306	722276	23		729,968
		4	48.0		18.0			100%	864.0	100%		07				0.00	7865	3817	400	281	2947			0	0	0	0	0	0	0	0	0	0	0	786	5 381						D-GE 2	812		701568	103172	2172178	70		2,195,312
		4	48.0	AV-8	18.0	864	.0	0%	0.0	100%	0%	0%	• 0.0	00 0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F40;	2-RF 1	6,00	00 5	5184000	762353	16050579	521	454	16,221,517
Amphibious Raid - Special Purpose Marine Air Ground Task Force	6			H-53	12.0		1.0		288.0			0%			0.00									0	0	0	0	0	0	0	0	0	0	0		8 1038				255					1285632	189064	3980544			
		10		MV-22	12.0			100%	720.0	100%	0%	0%					15918			323				0	0	0	0	0	0	0	0	0	0	0	1591							2			1612800	237176	4993513	162		5,046,694
		4	12.0	UH-1	12.0			100%	144.0	100%	0%	0%				0.00	260	367	13		327	294 884		0	0	0	0	0	0	0	0	0	0	0				31			_	D-CF 2	54		77760	11435 34391	240759	8		243,323 731,771
				AH-1 AV-8	12.0			100%	288.0 0.0	100%	0%	07				0.00	2622	1272	133	94 0	362	0	0	0	0	0	0	0	0	0	0	0	0	0	262	2 127	2 133	34	382	884		D-GE 2 2-RF 1	812 6,00		233856	254118	724059	23	151	5,407,172
		4	24.0	AV-0	12.0	200		07.	0.0	1007.	07.	0/	. 0.0	,0 (0.00	0.00	0		0		0	0		0	0	0	0		Ů		0		0	0	0	0	0				F 40.	5-RF 1	0,00	00 1	1720000	234110	5350133	114	151	5,407,172
Von-Combatant Evacuation Operation	5	10	50	MV-22				100%	1000.0	100%	0%	0%	. 1000	0.00	0.00	0.00		4413	3842		1994			0	0	0	0	0	0	0	0	0	0	0	2210	9 441	3 384;	2 448				2			2240000	329412	6935435			7,009,298
		4	20	H-53	20.			100%	400.0	100%	0%	0%				0.00	3803			714	3946			0	0	0	0	0	0	0	0	0	0	0	380	3 1442	28 268	714				-GE- 3	4,46		1785600	262588	5528533	179		5,587,412
		2	10	UH-1	20.			100%	200.0	100%		0%				0.00	361	510	18	43	454	408		0	0	0	0	0	0	0	0	0	0	0	361) 18	43				D-CF 2	54		108000	15882	334387	11	9	337,948
		4	20	AH-1 AV-8	20.			100%	400.0	100%		0%				0.00	3641 0	1767	185 0	130	1364	1228	0	0	0	0	0	0	0	0	0	0	0	0	364	1 176	7 185	130	1364	122	_	D-GE 2 2-BE 1	6.00		324800	47765 352941	1005638	33 241		1,016,348
		4	20	AV-0	20.	400		07.	0.0	1007.	07.	0/	. 0.0	<i>,</i> 0 (0.00	0.00	0	0	0	0	0		0	0	0	0	0	0	ľ	0			0	0		0		0		0	F40.	RF 1	0,00	00 2	2400000	352341	7430024	241	210	7,503,362
lumanitarian Assistance/ Disaster Relief Operations	5	10	50	MV-22	20.	1000	0.0 1	100%	1000.0	100%	0%	0%	- 1000).00 C	0.00	0.00	22109	4413	3842	448	1994	1794	0	0	0	0	0	0	0	0	0	0	0	0	2210	9 441	3 384;	2 448	1994	1794	1	2	224	40 ž	2240000	329412	6935435	225	196	7,009,298
		4	20	H-53	20.			100%	400.0	100%	0%	0%				0.00	3803			714	3946		-	0	0	0	0	0	0	0	0	0	0	0	380	3 1442	28 268	714			_	GE- 3	4,46		1785600	262588	5528533	179		5,587,412
		2	10	UH-1	20.			100%	200.0	100%		0%				0.00	361	510	18	43	454	408	-	0	0	0	0	0	0	0	0	0	0	0	361			43				D-CF 2	54		108000	15882	334387	11	9	337,948
		4	20	AH-1	20.			100%	400.0	100%		0%				0.00	3641		185	130	1364	1228	-	0	0	0	0	0	0	0	0	0	0	0	364	1 176		130				0-GE 2	812		324800	47765	1005638	33		1,016,348
		4	20	AV-8	20.	400	1.0	0%	0.0	100%	0%	0%	· 0.0	0 0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F40;	2-RF 1	6,00	00 2	2400000	352941	7430824	241	210	7,509,962
Jnmanned Aerial /ehicle - Intelligence, Surveillance, and Reconaissance	100	1	100.0	MQ-4C	4.0	400	1.0 1	100%	400.0	100%	0%	0%	400	.00 0	0.00	0.00	840	15536	264	1416	244	220	0	0	0	0	0	0	0	0	0	0	0	0	840) 155:	36 264	1416	244	220) AE3	0071 1	2,53	32 ·	1012800	148941	3135808	102	89	3,169,204
Reconaissance																																											_					_		

ANTI-SURFACE V	ARFARE	E																																													
Gunnery Exercise, A- S(Small Caliber) - Ship	321	0.25	80.25	FA- 18E/F	2.0	160.5	10%	16.	1 03	%.	0%	100%	0.00	0.00	16.05	0	0	0	0	0	0	0 0	0 0	0	0	0	119	2447	20	66	1088	980	119	2447	20	66	1088	980	F414-GE	2	10,338	1659249	244007	5137328	167	145	5,192,040
		0.75	240.8	SH-60E	2.0	481.5	100%	481	.5 0	%	0%	100%	0.00	0.00	481.50	0	0	0	0	0	0	0 (0 0	0	0	0	3611	3698	318	231	2427	2184	3611	3698	318	231	2427	2184	T700-GE	2	1200	577800	84971	1788971	58	51	1,808,023
Gunnery Exercise, A- S (Medium Caliber) - Ship	120	0.25	30	FA- 18E/F	2.0	60.0	10%	6.0	0 0:	×.	0%.	100%	0.00	0.00	6.00	0	0	0	0	0	0	0 0	0 0	0	0	0	45	915	7	25	407	366	45	915	7	25	407	366	F414-GE	2	10,338	620280	91218	1920496	62	54	1,940,950
		0.75	90	SH-60E	2.0	180.0	100%	180	.0 0:	%	0%	100%	0.00	0.00	180.00	0	0	0	0	0	0	0 (0 0	0	0	0	1350	1382	119	86	907	816	1350	1382	119	86	907	816	T700-GE	2	1200	216000	31765	668774	22	19	675,897
Missile Exercise (A-S) - Rocket	110	0.33		1000	2.0	72.6	10%				0%	100%	0.00		7.26	0	0	0	0	0	0	0 0	0 0	0	0	0	54	1107	э	30	492	443	54	1107	э	30	492	443	F414-GE			750538.8	110373	2323801	75	66	2,348,549
		0.66	72.6	SH-60E	2.0	145.2	100%	145	.2 0:	<i>"</i> .	0%	100%	0.00	0.00	145.20	0	0	0	0	0	0	0 (0 0	0	0	0	1089	1115	96	70	732	653	1089	1115	96	70	732	653	T700-GE	2	1200	174240	25624	539478	18	15	545,223
Missile Exercise (A-S)	10	0.5	5	FA- 18E/F	2.0	10.0	10%	1.0) 0	%	0%	100%	0.00	0.00	1.00	0	0	0	0	0	0	0 0	0 0	0	0	0	7	152	1	4	68	61	7	152	1	4	68	61	F414-GE	2	10,338	103380	15203	320083	10	э	323,492
		0.5	5	SH-60E	2.0	10.0	100%	10.0	0 0	%	0%	100%	0.00	0.00	10.00	0	0	0	0	0	0	0 (0 0	0	0	0	75	77	7	5	50	45	75	77	7	5	50	45	T700-GE	2	1200	12000	1765	37154	1	1	37,550
Laser Targeting	600	0.5	300	FA- 18E/F	1.0	300.0	10%				0%	100%	0.00	0.00	30.00	0	0	0	0	0	0	0 (0 0	0	0	0	223			124	2035	1831	223	4575	37	124	2035	1831	F414-GE	2	10,338		456088	9602482		271	9,704,748
		0.5	300	SH-60E	1.0	300.0	100%	300	0.0 0	<i>"</i> .	0%	100%	0.00	0.00	300.00	0	0	0	0	0	0	0 (0 0	0	0	0	2250	2304	198	14.4	1512	1361	2250	2304	198	14.4	1512	1361	T700-GE	2	1200	360000	52941	1114624	36	32	1,126,494
Bombing Exercise (A- ସ)	37	0.5	19	FA- 18E/F	1.0	18.5	10%	1.8	9 03	%	0%	100%	0.00	0.00	1.85	0	0	0	0	0	0	0 (0 0	0	0	0	14	282	2	8	125	113	14	282	2	8	125	113	F414-GE	2	10,338	191253	28125	532153	19	17	538,453
		0.5	19	P-3	1.0	18.5	10%	1.5	9 03	%	0%	100%	0.00	0.00	1.85	0	0	0	0	0	0	0 (0 0	0	0	0	22	63	5	4	35	32	22	69	5	4	35	32	T56-A-14	4	4,800	88800	13059	274940	9	8	277,869
Torpedo Exercise (Submarine to Surface)	0																																														
Missile Exercise (S-S)	19																																														
Sinking Exercise (SINKEX)	1	2	2	FA- 18E/F	8.0	16.0	10%	1.6	5 01	×.	0%	100%	0.00	0.00	1.60	0	0	0	0	0	0	0 (0 0	0	0	0	12	244	2	7	103	98	12	244	2	7	109	98	F414-GE	2	10,338	165408	24325	512132	17	14	517,587
(,		1	1	P-3	8.0	8.0	10%				0%	100%	0.00	0.00	0.80	0	0	0	0	0	0	0 (0 0	0	0	0	10	30	2	2	15	14	10	30	2	2	15	14 36	T56-A-14	4	4,800	38400	5647 1412	118893	4	3	120,159
		1	1	SH-60E	8.0	8.0	100%	8.0	0 0.	%	0%	100%	0.00	0.00	8.00	0	0	0	U	0	0	0 (0	0	0	0	60	61	5	4	40	36	60	61	5	4	40	36	T700-GE	2	1200	3600	1412	29723	1	1	30,040
Gunnery Exercise (S- S) Boat - Medium- caliber	20																																														
Gunnery Exercise (S- S) Small-caliber	43																																														
Maritime Security Operations(MSO)	40	1	40	SH-60E	4.0	160.0	100%	. 160	.0 100	0%	0%	0%	160.00	0.00	0.00	1200	1229	106	77	806	726	0 0	0 0	0	0	0	0	0	0	0	0	0	1200	1229	106	77	806	726	T700-GE	2	1200	192000	28235	594466	19	17	600,797

ANTI-SUBMARINE	E WARF/	ARE																																												
Tracking Exercise-	65	3	195	SH-60E	3 4.0	780.0	100%	780.0	0%	100%	0%	0.00	780.00	0.00	0	0	0	0 0	0 0	5850	5330	515	374	3931	3538	0	0	0	0	0	0	5850 5	390 51	5 37	4 393	31 3538) T700-	GE 2	120	93600	00	137647	2898021	94	82	2,928,885
Helo																																														
Torpedo Exercise- Helo	4	3	12	SH-60E	3 4.0	48.0	100%	48.0	0%	100%	0%	0.00	48.00	0.00	0	0	0	0 0) 0	360	369	32	23	242	218	0	0	0	0	0	0	360 :	369 3	2 2:	3 242	2 218	T700-	GE 2	120	5760	0	8471	178340	6	5	180,239
Tracking Exercise- Maritime Patrol																																														
Advanced Extended	0	1	0	P-3	6.0	0.0	75%	0.0	0%	100%	0%	0.00	0.00	0.00	0	0	0	0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	T56-A	v-14 4	4,80	0 0		0	0	0	0	0
Echo Ranging Sonobuoys																																					_									
Tracking Exercise -	36	1	36	P-3	6.0	216.0	75%	162.0	0%	100%	0%	0.00	162.00	0.00	0	0	0	0 0) 0	1952	6011	451	311	3087	2778	0	0	0	0	0	0	1952 (5011 45	51 31	1 308	37 277) T56-A	-14 4	4,80	0 10368	00	152471	3210116	104	91	3,244,303
Maritime Patrol Aircraft																																														
Torpedo Exercise- Maritime Patrol	4	1	4	P-3	6.0	24.0	75%	18.0	0%	100%	0%	0.00	18.00	0.00	0	0	0	0 0	0 0	217	668	50	35	343	309	0	0	0	0	0	0	217 (568 5	0 35	5 34:	3 305	T56-A	-14 4	4,80	0 11520	0	16341	356680	12	10	360,478
Maritime Patrol Aircraft																																														
Tracking Exercise	91																																													
-Suface		-									_								_															_	_		_		_							
Torpedo Exercise- Surface	4																																													
Tracking Exercise- Submarine	4																																													
Torpedo Exercise -	6																																													
Submarine MAJOR TRAINING	EVENT	IS IS																																												
Joint Expeditionary	1	48	48	FA-18E	F 8.0	384.0	10%	38.4	0%	100%	0%	0.00	38.40	0.00	0	0	0	0 0) 0	286	5855	48	159	2604	2344	0	0	0	0	0	0	286 5	855 4	8 15:	9 260)4 2344	F414-	GE 2	10,33	8 39697	'92 !	583793	12291177	399	347	12,422,078
Exercise		4	4	EA-6B	8.0	32.0	10%	3.2	0%	100%	0%	0.00	3.20	0.00	0	0	0	0 0) 0	148	165	10	8	73	66	0	0	0	0	0	0	148	165 1	0 8	73	3 66	F402-	BF 1	6,00	0 19200	00	28235	594466	19	17	600,797
		4	4	E-2	8.0	32.0	10%	3.2	0%	100%	0%	0.00	3.20	0.00	0	0	0	0 0) 0	18	71	3	3	7	6	0	0	0	0	0	0		71 3	3 3	7	6	T56-A		1,10			5176	108985	4	3	110,146
		3	3	P-3 AV-8B	8.0 8.0	24.0 48.0	10%	2.4	0%	100%	0%	0.00	2.40	0.00	0	0	0	0 0		29	89 248	7	5 12	46	41	0	0	0	0	0	0	29	89 7	7 5 6 13	46		T56-A F402-		4,80			16941 42353	356680 891699	12	10 25	360,478 901,195
		2	2	C-130	8.0	40.0	10%	1.6	0%	100%	0%	0.00	4.80	0.00	0	0	0	0 0) 0	15	53	3	3	29	26	0	0	0	0	0	0	15	59 3	3 3	29		T56-A		4,50			42353	222325	7	6	225,299
		4	4	A-10	8.0	32.0	10%	3.2	0%	100%	0%	0.00	3.20	0.00	0	0	0	0 0	0 0	39	86	4	4	26	23	0	0	0	0	0	0	**	86 4	4	26	5 23		2	6,05	2 19366	54	28480	533618	19	17	606,004
		1	1	E-3 KC-135	8.0 8.0	8.0 8.0	10%	0.8	0%	100%	0%	0.00	0.80	0.00	0	0	0	0 0) 0	54	221	8	10	7	6	0	0	0	0	0	0	54 i 25 i	221 8	3 10	7	6	_	4	130,7			153807	3238254	105		3,272,741
		1	1	SH-60E		120.0	10%	120.0	0%	100%	0%	0.00	0.80	0.00	0	0	0) 0	300	322	1 79	7 58	2 605	2 544	0	0	0	0	0	0		247 1 322 7	1 r 3 58	2	-	T700-	4 GE 2	91,55			107708 21176	2267683 445849	14	64 13	2,291,840 450,598
		4	4	CH-53	8.0	32.0	100%	32.0	0%	100%	0%	0.00	32.00	0.00	0	0	0	0 0	0 0	304	1154	21	57	316	284	0	0	0	0	0	0	304 1	154 2	1 57					4,46			21007	442283	14	12	446,993
		12	12	CH-46	8.0	96.0	100%	96.0	0%	100%		0.00	96.00	0.00	0	0	0	0 0	0 0	2454	593	380	58	256	231	0	0	0	0	0			593 38						120			21176	445849	14	13	450,598
		4	4	AH-1 UH-1	8.0 8.0	32.0	100%	32.0	0%	100%	0%	0.00	32.00	0.00	0	0	0	0 0	0 0	291	141	15	10	109 36	98 33	0	0	0	0	0	0		141 1 41 1	5 10 3					812 540			3821 1271	80451 26751	3	2	81,308 27,036
		10	10	MV-22	8.0	80.0	100%	80.0	0%	100%	0%	0.00	80.00	0.00	0	0	0	0 0	0	1769	353	307	36	159	144	0	0	0	0	0	0		353 30	-				2				26353	554835	18	16	560,744
Joint Multi-Strike	1	144	14.4	FA-18E	'F 8.0	1152.0	10%	115.2	0%	0%	100%	0.00	0.00	115.20	0	0	0	0 0	0 0	0	0	0	0	0	0	857	17566	143	176 7	7813	7031	857 17	² 566 14	3 47	6 781	3 703	F414-	GE 2	10.33	8 119093	376	1751379	36873530	1196	1042	37,266,233
Group Exercise	-	12	12	EA-6B	8.0	96.0	10%	9.6	0%	0%	100%		0.00	9.60	0	0	0	0 0	0 0	0	0	0	0	0	0	444	495	31			197		495 3						6,00	0 57600		84706	1783398	58	50	1,802,391
		12	12	E-2 P-3	8.0	96.0	10%	9.6	0%	0%	100%		0.00	9.60	0	0	0	0 0) 0	0	0	0	0	0	0	54	212	8	-	20	18 63		212 8 14.8 1	8 8	20		T56-A		1,10			15529	326956	11	9	330,438
		1	5	E-3	8.0 8.0	40.0	107.	4.0	0%	0%	100%		0.00	4.00	0	0	0			0	0	0	0	0	0	48 54	221	11	0	76	6		140 1	1 0 3 10	76		T56-A	-14 4	4,80			28235 153807	594466 3238254	19 105	17 92	600,797 3,272,741
		2	2	KC-135		16.0	10%	1.6	0%	0%	100%		0.00	1.60	0	0	0	0 0	0 0	0	0	0	0	0	0	49	494	1	15	5	4		194 1	15	5	4		4				215416	4535378	147		4,583,680
		6	6	B-1B	8.0	48.0	10%	4.8	0%	0%	100%	0.00	0.00	4.80	0	0	0	0 0) 0	0	0	0	0	0	0	27	418		13	4	4		418 4			4		4	26,5			187482	3947253	128	112	3,989,292
		24 45	24 45	F-15 SH-60E	8.0 8 8.0	192.0 360.0	10%	19.2	0%	0%	100%		0.00	19.20 360.00	0	0	0	0 0) 0) 0	0	0	0	0	0	0								558 7 765 23				_		613			174946 63529	3683311 1337548	119 43	104 38	3,722,538
Marine Air Ground Task Force Exercise	4	1	4	C-130 SH-60E	8.0 3 8.0	32.0	10%	3.2	50%	50%	0%	1.60	1.60	0.00	15 240	59 246	3	3 2 15 16			53 246	3 21	3 15	29 161	26 145	0	0	0	0	0	0		118 7 192 4	, 6 2 3	57 I 32:		T56-A		4,50			21176 11294	445843 237786	14	13	450,598 240,319
(Amphibious)		4	16	CH-53	8.0	128.0	100%	128.0	50%	50%	0%	64.00	64.00	0.00	603			114 63			2308	43	114	631	568	0	0	0	0	0		1217 4	617 8	6 22	9 126	3 1136	T64-C		4,46	4 57138	92	84028	1769130	57	50	1,787,972
		12	48	CH-46	8.0	384.0	100%	384.0	50%	50%	0%	192.00	192.00	0.00	3926			92 41			949	608	92	410	369	0	0	0	0	0			875 12						120			67765	1426718	46	40	1,441,913
		4	16	AH-1 UH-1	8.0 8.0	128.0 64.0	100%	128.0 64.0	50%	50%	0%	64.00	64.00 32.00	0.00	583 58		**	21 21 7 7			283 82	30 3	21	218 73	196 65	0	0	0	0	0	0		565 5 163 6	* **					812 540			15285 5082	321804 107004	10	3	325,231 108,143
		10	40	MV-22	8.0	320.0	100%	320.0			0%				3537		-	72 31				615	72	319	287	0	0	0	0	0	-		412 12					2				105412	2219339	72		2,242,975
Special Purpose	2	1	2	C-130	8.0	16.0	10%	1.6	50%	50%	0%	0.80	0.80	0.00	7	29	2	1 1	4 13	; 7	29	2	1	14	13	0	0	0	0	0	0	15	59 3	3 3	29	9 26	T56-A	4: 4	4,50	0 7200	0	10588	222925	7	6	225,233
Marine Air Ground		4	8	CH-53	8.0	64.0	100%	64.0	50%	50%	0%	32.00	32.00	0.00	304		21	57 31			1154	21	57	316	284	0	0	0	0	0			308 4				T64-C	GE- 3	4,46	4 28563	96	42014	884565	29	25	893,986
Task Force Exercise		12	24	CH-46 AH-1	8.0	192.0 64.0	100%	192.0	50%	50%	0%	96.00	96.00	0.00	1963 291		***	46 20 10 10			475	304 15	46 10	205 109	185 98	0	0	0	0	0			438 60 283 3						120			33882	713359 160902	23 5	20	720,956 162,616
		2	8	UH-1	8.0 8.0	32.0	100%		50%			32.00	32.00	0.00	291	41		10 10 3 3			41	15	10	36	38	0	0	0	0	0	0		283 3 82 3						812			7642 2541	53502	2	2	162,616
		10	20			160.0								0.00	1769			36 15				307	36	153	144	0	0	0	0	0	÷ .		706 61					2				52706	1109670	36	31	1,121,488
		1		1								-																																		

Table D-9: Aircraft Emissions – Alternative 1 (continued)

Table D-9: Aircraft Emissions – Alternative 1 (continued)

ELECTRONIC	WARFA	ARE																																																
Electronic Waffare	522	1	1 5:	2 FA-	8E 2.	.0 104	4.0 0:	<i>.</i> 0).0	0% 0	×. 100	0.0	0.0	0 0.0	0 0		0	0	0	0		0	0	0	0	0	0	0		D	0	0	0	0	0	0		0	0	0	0	0	2 10),338	10792872	1587187	33416636	1084	944	33,772,523
Flare Exercise	2200	0.	.9 19	30 F-15	3.	0 594	0.0 03	×. 0	0.0	0% 0	×. 100	0.0	0.0	0 0.0	0 0		0	0	0	0	_	0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	2 6	196	36804240	5412388	113952422	3697	3220	115,166,015
							5.0 03				% 100						0	0	0	0		0	0	0	0	0	0				0	0	0	0	0			0	0	0	0	0		,338	4093848	602036	12675276	411	358	12,810,267
		0.0	04 8	3 SH-	50E 3.	0 264	4.0 100)% 26	4.0	0% 0	% 100	0.0	0.0	0 264.	00 0		0	0	0	0	_	0	0	0	0	0	0	0	19	80 ;	2028	174	127	1331	1198	3 198	0	2028	174	127	1331	1198	2 1	200	316800	46588	980869	32	28	991,315
Ch aff Exercise - S	* 41			-		-	_	-			_			-		_									_		_	_									_													
Chaff Exercise - Aircraft	2200	0.	.9 19	30 F-15	3.	0 594	0.0 0	×. 0	0.0	0% 0	×. 100	N 0.0	0.0	0 0.0	0 0		0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	2 6	196	36804240	5412388	113952422	3637	3220	115,166,015
		_					5.0 03			0% 0		···· •·•					0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0			4093848	602036	12675276	411	358	12,810,267
		0.0	04 8	3 SH-	50E 3.	0 264	4.0 100)% 26	4.0	0% 0	×. 100	0.0	0.0	0 264.	00 0		0	0	0	0	_	0	0	0	0	0	0	0	19	80 ;	2028	174	127	1331	1198	3 198	0	2028	174	127	1331	1198	2 1	200	316800	46588	980869	32	28	991,315
MINE WARFAR	ε.						-																																		1									
Mine Laying - Aircraft	4	0.	.5 :	FA-	8E 0.	5 1.	0 0	v. 0	0.0	0% 0	×. 100	0.0	0.0	0 0.0	0 0		0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	2 10),338	10338	1520	32008	1	1	32,349
Aircran		0.	.5 2	P-3	1.	0 2.	0 03	×. 0	.0	0% 03	×. 100	0.0	0.0	0 0.0	0 0		0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	4 4,	,800	9600 0	1412 0	29723	1	1	30,040
Mine		+	-		-	-									-										_	-			+																0	0	0	0.00	0.00	0
Neutralization - Explosive	20																																																	
Ordnance Limpet Mine		+				_	_				_		_	_		_									_	_			+								_						_							
Neutralization System/Shock Wave Generator	60																																																	
NAVAL SPECI		BEAF	RF												-																																			
Personnel I&E	364	14	4 14									. 11648					89457	7688	5591	587	06 5	2835	0	0	0	0	0	0		0	0	0	0	0	0	8736	50 8	89457	7688	5591	58706	52835	5 2 1		13977600	2055523	43277116	1404	1223	43,738,017
		2	2 72	8 MV-	22 8.	0 582	4.0 100)% 582	24.0 1	00% 0	×. 0%	. 5824	.00 0.0	0 0.0	0 12876	2 1	25700	22373	2609	116	11 1	0450	0	0	0	0	0	0		0	0	0	0	0	0	1287	62 2	25700	22373	2609	11611	10450	22	240	13045760	1918494	40391975	1310	1142	40,822,149
Parachute	64											· 256.					9400	541	461	457		4116	0	0	0	0	0	0		0	0	0	0	0	0	238		9400	541	461	4573	4116		,500	1152000	169412	3566795	116	101	3,604,782
Insertion												4 256. 4 256.					0 1966	811 169	123 123	54 129		492 1161	0	0	0	0	0	0	_	0	0	0	0	0	0	523		0 1966	811 169	123 123	547 1290	492		200 200	307200 307200	45176 45176	951145 951145	31 31	27 27	961,275 961,275
OTHER		+																											_																					
Surface Ship Sonar	44																																																	
Submarine Sonar Maintenance	32																																																	
Small Boat Attack	s 18																																																	
Sub Navigation /	8	+	+	-	+	-									+														+																					
Sub Nav Ünder	•		_	_	_									_	_												_		_																					
Precision	18														-																																			
Anchoring																																																		
Intelligence, Surveillance, Reconnaissance	44	1	1 44	.0 MQ 4C	4.	0 176	5.0 100	17	6.0	0% 50	% 50	% 0.0	88.0	0.0	0 0		0	0	0	0		0	185	3418	58	312	54	48	3 (D	0	0	0	0	0	185		3418	58	312	54	48	1 2,	,532	445632	65534	1379755	45	39	1,394,450
Underwater Survey	32	1	1 3	2 SH-	50E 2.	0 64	.0 100)% 64	4.0 1	00% 0	×. 07	64.0	0 0.0	0 0.0	0 480		492	42	31	32	3	290	0	0	0	0	0	0		0	0	0	0	0	0	480)	432	42	31	323	290	2 1	200	76800	11294	237786	8	7	240,319
Unmanned Underwater Vehicle Training	64																																																	
		_	_	_	_	_		_					_	_	_	_													_																					
Unmanned Aerial Vehicle Operation	950																																																	
TOTAL TRAINI															452,1	05 30	03,735	64,331	20,310	0 135,3	94 12	1,855	28,476	33,52	6 3,98	2 1,96	5 14,7	22 13,2	50 61,	211 91	3,723	8,847	25,306	407,93	7 367,1	44 541,7	92 1,2	250,984	77,161	47,580	558,054	502,24	18				1,264,543,815			
TOTAL TRAINI	NG (to	ns pe	er yez	r)											2	26	152	32	10	0	68	61	14	1	7	2	1	7	7	31	457	4	13	204	L 1	84 2	271	625	39	24	273) 2	51		204,211	60,061,927	632,272	21	18	639,000

MEM Category	Location	Training MEM	Testing MEM		Emi	ssions (Traini					En	nissions Test		r)	
		#/yr	#/yr	CO	NOx	VOC	SOx	PM10	PM2.5	CO	NOx	VOC	SOx	PM10	PM2.5
BOMBS															
Bombs (H-E)	МПТ	6,454	0	394,551.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombs (N-E)	МПТ	2,820	0	719.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROJECTILES										I					
Small Caliber	МПТ	307,105	0	706.3	29.8	0.0	0.0	15.7	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Medium Caliber (H-E)	МПТ	22,780	4082	91.1	29.6	0.0	0.0	216.4	116.2	16.3	5.3	0.0	0.0	38.8	20.8
Medium Caliber (N-E)	МПТ	218,855	0	569.0	21.2	0.0	0.0	30.6	26.3	0.0	0.0	0.0	0.0	0.0	0.0
Large Caliber (H-E)	МПТ	5,102	240	653.1	816.3	0.0	0.0	49.0	38.0	30.7	38.4	0.0	0.0	2.3	1.8
Large Caliber (N-E)	МПТ	16,370	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missiles (H-E)	МПТ	240	20	7,349.7	8,537.8	0.0	0.0	14,830.8	14,830.8	612.5	711.5	0.0	0.0	1,235.9	1,235.9
Missiles (N-E)	МПТ	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rockets (H-E)	МПТ	4,100	16	3,813.0	23.0	0.0	0.0	1,640.0	1,189.0	14.9	0.1	0.0	0.0	6.4	4.6
Rockets (N-E)	МПТ	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COUNTERMEASURES															
Chaff	МПТ	17,844	0	1.1	2.7	0.0	0.0	5.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0
Flares	МПТ	17,600	0	1.0	2.7	0.0	0.0	5.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0
TARGETS															
Airborne targets	МПТ	16	0												
Surface targets	МПТ	240	0												
Expendable sub-surface targets	мпт	261	0												
TOTAL EMISSIONS (Ibs	<u> </u>			408,454	9,463	0	0	16,792	16,221	674	755	0	0	1,283	1,263
TOTAL EMISSIONS (ton	is per year)			204.2	4.7	0.0	0.0	8.4	8.1	0.3	0.4	0.0	0.0	0.6	0.6

Table D-10: Emissions from Ordnance – Alternative 1

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				ODED		AL INEC	ORMATIC	N – VE	CCELC					F	MISSIO	NSIYEA	10 (16) 1	22 1110	ISDICI								EMIS	SIUNS	YEAR (I	LI BV I	upienir	TION						GHG Emi	issians (I	5	
8		Shin /		el / Boa			JRMATIL inge Ti n e			tribution	(br)		Sta	te (0-3)			nn (10) 1			ers of U	\$ (3-12	n ==)				t Water	5 (> 12 ni		I CAR (I	JDTJ	UNIJUII		nissions			<u>6</u>	E I	GHG CM	ssions (I	5)	
Training Op	Number	Shin Tyme	Ship Type	Type	Participatio n	Per Ship	Time at Each Power Level (%)	Total	0-3 nm fron	3-12 nm fror shore	>12 nm fron shore	со	NO.	нс	so.		PM2.5	со			-	-	P M 2.5	co	NO.				PM2.5	со	NO.	HC	so.	PMu	PM2.5	Fuel Flow (G	Annual Fuel Consumption (gal)	COz	NzO	сн,	CO2-,
3600																																									
100																																									
5300	-																																								
iber) 36																																									
18																																									
oer) 9	18	FF	FG C	Guided M	2.00	2.0	100%	36.0	0.0	0.0	36.0	0	0	0	0	0	0	0	0	0	0	0	0	1,186	1,698	108	1,257	83	75	1,186	1,698	108	1,257	83	75	79	2,844	59,878	2	2	60,515
iber) 19	38	FF	FG C	Guided M	2.00	2.0	100%	76.0	0.0	0.0	76.0	0	0	0	0	0	0	0	0	0	0	0	0	2,503	3,584	228	2,654	176	158	2,503	3,584	228	2,654	176	158	79	6,004	126,408	4	4	127,754
27	54	FF	FG C	Guided M	2.00	2.0	100%	108.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	0	0	0	0	0
7100																																									
26																																									
15	15	C	cg d	ruiser	1	8.0	100%	120.00	120.0	0.0	0.0	7,381	9,550	518	9,316	335	301	0	0	0	0	0	0	0	0	0	0	0	0	7,381	9,550	518	9,316	335	301	184	22,080	464,872	15	13	469,823
1- 10	48	LS	.SD C	ruiser	4	24.0	100%	1152.0	1152.0	0.0	0.0	24,480	385,356	12,488	40,366	3,122	2,810	0	0	0	0	0	0	0	0	0	0	0	0	24,480	385,356	12,488	40,366	3,122	2,810	184	1,461,888	30,778,590	998	870	31,106,382
12	48			mphib. A		24.0 24.0	100%	1152.0 1152.0		0.0	0.0	9,308 4,009	55,100 24,192	6,647 2,972	156,096 70,065		29,632	0	0	0	0	0	0	0	0	0	0	0	0	9,308 4,009	55,100 24,192	6,6 4 7 2,972	156,096 70,065	32,324 14,803	29,632 13,323	373 373	1,461,888 1,461,888	30,778,590 30,778,590	998 998	870 870	31,106,382 31,106,382
und 12	12		G C		1	8.0	100%	96.0	36.0	0.0	0.0	5,305	7,640	415	7,452	268	241	0	0	0	0	0	0	0	0	0	0	0	0	5,305	7,640	415	7,452	268	241	184	121,824	2,564,882	83	72	2,532,138
	12			mphib. A mphibio	1	8.0 8.0	100%	96.0 192.0	96.0 192.0	0.0	0.0	708 668	4,179 4,032	531 495	12,573 11,677	2,524 2,467	2,271 2,220	0	0	0	0	0	0	0	0	0	0	0	0	708 668	4,179 4,032	531 495	12,573 11,677	2,524 2,467	2,271 2,220	373 373	121,824 243,648	2,564,882 5,129,765	83 166	72 145	2,592,198 5,184,397
	24			Guided M		8.0	100%	192.0		0.0	0.0	6,324	9,055	576	6,705	444	399	0	0	0	0	0	0	0	0	0	0	0	0	6,324	9,055	576	6,705	444	399	79	243,648	5,129,765	166	145	5,184,397
e 6	6	LH	HA A	mphib. A	1	6.0	100%	36.0	36.0	0.0	0.0	266	1,567	199	4,715	946	852	0	0	0	0	0	0	0	0	0	0	0	0	266	1,567	199	4,715	346	852	373	45,684	361,831	31	27	372,074
	12	LF	PD A	mphibio	2	2.5	100%	30.0	30.0	0.0	0.0	104	630	77	1,825	386	347	0	0	0	0	0	0	0	0	0	0	0	0	104	630	77	1,825	386	347	373	38,070	801,526	26	23	810,062
on 5	5			mphib. A mphibio		80.0 80.0	100%	400.0 800.0		0.0	0.0	2,952 2,784	17,412 16,800	2,212 2,064	52,388 48,656		9,464 9,252	0	0	0	0	0	0	0	0	0	0	0	0	2,952 2,784	17,412 16,800	2,212 2,064	52,388 48,656	10,516 10,280	9,464 9,252	373 373	149,200 298,400	3,141,257 6,282,514	102 204	89 178	3,174,711 6,349,422
	5			anding (1	80.0	100%	400.0	400.0	0.0	0.0	7,328	45,812		21,844	2,056	1,850	0	0	0	0	0	0	0	0	0	0	0	0	7,328		1,396	21,844	2,056	1,850	611	244,400	5,145,598	167	145	5,200,398
elief 5	5			mphib. A		8.0	100%	40.0	40.0	0.0	0.0	295	1,741	221	5,239	1,052	946	0	0	0	0	0	0	0	0	0	0	0	0	295	1,741	221	5,239	1,052	946	373	50,760	1,068,701	35	30	1,080,083
	10			mphibio anding (8.0 8.0	100%	80.0 40.0	80.0 40.0	0.0	0.0	278 733	1,680 4,581	206 140	4,866 2,184	1,028 206	925 185	0	0	0	0	0	0	0	0	0	0	0	0	278 733	1,680 4,581	206 140	4,866 2,184	1,028 206	925 185	373 611	101,520 50,760	2,137,402 1,068,701	69 35	60 30	2,160,165 1,080,083
nce, e 100																																									

Table D-11: Vessel Emissions – Alternative 2

	æ			OPER	ATION/	AL INFC	ORMATIC	DN - VI	ESSELS	3					EMISSI	ONSIY	EAR (Ib)	BY JU	RISDIC	TION							EMIS	SIONSA	YEAR (Ib) BY J	URISDI	CTION						GHG Er	nissions	lb)	
) sdo	S	hip / Yesse	l/Boa	st	Ra	nge Tine	e (hr)		listributi	on (hr)		S	tate (O-	3 nm offs	hore)			Vat	ters of U	J S (3-12	nm)			In	t Vater:	; (> 12 ni	•)				Total E	Emission	s		6	- 5				
Type Training	Training 0	Number	Ship Type	Type	Participatio n	Per Ship	Time at Each Power Level (%)	Total	0-3 nm from shore	3-12 nm fror shore	>12 nm fron shore	co	NO.	нс	so.	PM.	PM2.	5 00	NO.	нс	so.	PMa	PM2.5	со	NO.	нс	so.	РМи	PM2.5	co	NO.	нс	so.	PMu	PM2.5	lel Flow	Annual Fuel Consumptio (gal)	CO,	N ₂ O	сн,	CO2-,
ANTI-AIR WARFARE							1																		_															-	
Air Combat Maneuver	3600										_	_						_																							
Air Defense Exercise	100																																								
Air Intercept Control	5300																																								
Gunnery Exercise, A-A (Medium Caliber)	36																																								
Missile Exercise, A-A	18								_				_		_																										
Gunnery Exercise, S-A (Large Caliber)	3	18	FFG G	uided M	2.00	2.0	100%	36.0	0.0	0.0	36.0	0	0	0	0	0	0	0	0	0	0	0	0	1,186	1,698	108	1,257	83	75	1,186	1,698	108	1,257	83	75	79	2,844	59,878	2	2	60,515
Gunnery Exercise, S-A (Medium Caliber)	19	38	FFG G	uided M	2.00	2.0	100%	76.0	0.0	0.0	76.0	0	0	0	0	0	0	0	0	0	0	0	0	2,503	3,584	228	2,654	176	158	2,503	3,584	228	2,654	176	158	79	6,004	126,408	4	4	127,754
Missile Exercise, S-A	27	54	FFG G	uided M	2.00	2.0	100%	108.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	0	0	0	0	0
STRIKE WARFARE														_			_																								
Bombing Exercise, A-G	7100																																								
Missile Exercise, A-G	80																																								
Gunnery Exercise, A-G	26														_																										
AMPHIBIOUS WARFARE																																									
Fire Support Exercise - Land-Based target	15	15	CG Cr	ruiser	1	8.0	100%	120.00	0 120.)	0 0.0	0.0	7,38	1 9,550	518	9,316	335	301	0	0	0	0	0	0	0	0	0	0	0	0	7,381	9,550	518	9,316	335	301	184	22,080	464,872	15	13	469,823
Amphibious Rehearsal, No Landing -		48	LSD Cr			24.0	100%	1152.0) 1152.	0 0.0	0.0		0 385,3	e 10.49	8 40,36	6 3,122	2 2,810	0	0	0	0	0		0	0	0	0	0	0	24.480	385,356	10 4 9 9	40,366	3,122	2,810	184	1,461,888	30,778,590	338	870	31,106,382
Marine Air Ground Task Force	12		LINALHD Ar		4	24.0	100%	1152.0				3,30							0	0	0	0	0	0	0	0	0	0	0	3,308	55,100				29,632		1,461,888			870	31,106,382
		48	LPD Ar			24.0	100%	1152.0				4,00			2 70,06				0	0	0	0	0	0	0	0	0	0	0	4,009								30,778,590		870	31,106,382
Amphibious Assault - Marine Air Ground Task Force	12	12	CG Cr	ruiser	1	8.0	100%	96.0	36.0	0.0	0.0	5,90	5 7,640	415	7,45;	268	241	0	0	0	0	0	0	0	0	0	0	0	0	5,305	7,640	415	7,452	268	241	184	121,824	2,564,882	83	72	2,592,198
Tabili of et		12	LHA Ar	mphib. A	1	8.0	100%	96.0	96.0) 0.0	0.0	708	4,173	531	12,57	3 2,52	1 2,271	0	0	0	0	0	0	0	0	0	0	0	0	708	4,179	531	12,573	2,524	2,271	373	121,824	2,564,882	83	72	2,532,138
		24	LPD Ar	mphibio	2	8.0	100%	192.0			0.0	668						0	0	0	0	0	0	0	0	0	0	0	0	668	4,032	495	11,677		2,220		243,648	5,129,765	166	145	5,184,397
		24	FFG G	uided M	2	8.0	100%	192.0) 192.)	0 0.0	0.0	6,32	\$ 9,05	5 576	6,705	5 444	399	0	0	0	0	0	0	0	0	0	0	0	0	6,324	9,055	576	6,705	444	399	79	243,648	5,129,765	166	145	5,184,397
Amphibious Raid - Special Purpose										_		+		-	-	_		-	-														_		_	-			_		
Marine Air Ground Task Force	6	6 12	LHA Ar	mphib. / mphibio		6.0 2.5	100%	36.0				266						0	0	0	0	0	0	0	0	0	0	0	0	266	1,567 630	199	4,715	346	852	373	45,684	961,831 801,526	31 26	27	972,074 810,062
					_														-	-	-			-	-	-	-		-												
Non-Combatant Evacuation Operation	5	5	LHA Ar	mphib. A	1	80.0	100%	400.0	400.	0 0.0	0.0	2,95		2 2,21	2 52,38	8 10,51	5 9,464	0	0	0	0	0	0	0	0	0	0	0	0	2,952			52,388	10,516	9,464	373	149,200	3,141,257	102	89	3,174,711
		10		mphibio		80.0	100%	800.0			0.0	2,78							0	0	0	0	0	0	0	0	0	0	0	2,784	16,800					373	298,400	6,282,514	204	178	6,349,422
		5	LCU La	onding (1	80.0	100%	400.0	400.	0 0.0	0.0	7,32	8 45,81	2 1,39	5 21,84	2,05	5 1,850	0	0	0	0	0	0	0	0	0	0	0	0	7,328	45,812	1,396	21,844	2,056	1,850	611	244,400	5,145,598	167	145	5,200,398
Humanitarian Assistance/ Disaster Relief	_	5	LHA Ar	mphib. A	1	8.0	100%	40.0	40.0) 0.0	0.0	295	1,741	221	5,233	1,052	2 946	0	0	0	0	0	0	0	0	0	0	0	0	295	1,741	221	5,233	1,052	946	373	50,760	1,068,701	35	30	1,080,083
Operations	5	10	LPD Ar	·		8.0	100%	80.0	80.0) 0.0	0.0	278					3 925	0	0	0	0	0	0	0	0	0	0	0	0	278	1,680	206	4,866		925	373	101,520	2,137,402	69	60	2,160,165
		5	LCAC La			8.0	100%	40.0				733						0	0	0	0	0	0	0	0	0	0	0	0	733	4,581	140	2,184	206	185	611	50,760	1,068,701	35	30	1,080,083
Unmanned Aerial Vehicle - Intelligence, Surveillance, and Reconaissance	100																																								

Table D-11: Vessel Emissions – Alternative 2 (continued)

ANTI-SURFACE WARFARE																																									
Gunnery Exercise, A-S (Small Caliber) -																				-			_												-						
Ship	220																		-																						
Gunnery Exercise, A-S (Medium Caliber) - Ship	295																																								
Missile Exercise (A-S) - Rocket	10																																								
Missile Exercise (A-S)	20																																								
Laser Targeting	60																						_																		
Bombing Exercise (A-S)	37																																								
Torpedo Exercise (Submarine to Sunface)	0																																								
Missile Exercise (S-S)	12	24	FFG G	iuided M	2.00	2.0	100%	48.0	0.0	0.0	48.0	0	0	0	0	0	0	0	0	0	0	0	0	1,581	2,264	14.4	1,676	111	100	1,581	2,264	14.4	1,676	111	100	79	3,792	79,837	3	2	80,687
Gunner Exercise (Surface-to-Surface)		30.8	cg c	ruiser	0.22	2.5	100%	77.00	0.0	21.6	55.4	0	0				0	1,326	1.716	93	1.674	60	54	3.410	4.412	240	4,304	155	139	4.736	6,128	333	5.978	215	193	184	14,168	298,293	10	8	301,470
Ship - Large-caliber	140	63	DDG	ruiser	0.22	2.5	100%	157.5	0.0	44.1	113.4	0	0	0	0	0	0	2,653			3,304				12,987	455	10,039	413	371	9,475	18,037	632	13,943		516		29,453	620,093	20	-	626,697
		21	FFG G	uidad M		2.5	100%	52.5	0.0	14.7	37.8	0	0	0	0	0	0	484		44		34	31		1,783	113	1,320	87	79	1,729	2,476	158	1,833	_	109	79	4,148	87,321		2	88,251
			USCG U			2.5	100%	42.0	0.0	11.8	30.2	0	Ő	0	0	0	0	68		10	136	2	2	174	· ·	27	343	6	6	241	2,432	37	485	3	8	66	2,772	58,362	2		58,983
Gunner Exercise (Surface-to-Surface) Ship - Medium-caliber	100	22	cg c	ruiser	0.22	2.5	100%	55.00	0.0	15.4	39.6	0	0	0	0	0	0	947	1,226	67	1,196	43	39	2,436	3,151	171	3,074	110	99	3,383	4,377	238	4,270	153	138	184	10,120	213,066	7	6	215,336
		45	DDG	-	0.45	2.5	100%	112.5	0.0	31.5	81.0	0	0	0	0	0	0	1.895	3.607	126	2,789	115	103	4,873	9,276	325	7,171	295	265	6.768	12.884	451	9,960	410	369	187	21,038	442,324	14	13	447,641
		15	FFG G	iuided M	0.15	2.5	100%	37.5	0.0	10.5	27.0	0	0	0	0	0	0	346	495	32	367	24	22	889	1,273	81	943	62	56	1,235	1,769	113	1,310	87	78	79	2,963	62,372	2	2	63,037
		1	LPD A	mphibio	0.01	2.5	100%	2.5	0.0	0.7	1.8	0	0	0	0	0	0	2	15	2	43	9	8	6	38	5	109	23	21	9	53	6	152	32	29	373	933	19,633	1	1	19,842
		12	USCG U	S Coast	0.12	2.5	100%	30.0	0.0	8.4	21.6	0	0	0	0	0	0	48	486	7	97	2	2	124	1,251	19	249	5	4	172	1,737	26	347	6	6	66	1,980	41,687	1	1	42,131
Sinking Exercise (SINKEX)	2	10	FFG G	iuided M	5.00	16.0	100%	160.0	0.0	0.0	160.0	0	0	0	0	0	0	0	0	0	0	0	0	5,270	7,546	480	5,587	370	333	5,270	7,546	480	5,587	370	333	79	12,640	266,123	9	8	268,957
Gunnery Exercise (S-S) Boat - Medium- caliber	10	50	FFG G	iuided M	5.00	3.0	100%	150.0	0.0	0.0	150.0	0	0	0	0	0	0	0	0	0	0	0	0	4,941	7,074	450	5,238	347	312	4,941	7,074	450	5,238	347	312	79	11,850	249,490	8	7	252,147
Gunnery Exercise (S-S) Small-caliber	40	80	CRRC C	ombat F	2	3.0	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	3,096	0	0	0	0	36	3,096	0	0	0	3	720	15,153	0	0	15,320
Maritime Security Operations (MSO)	8	8	FFG G	iuided M	1	8.0	100%	64.0	0.0	0.0	64.0	0	0	0	0	0	0	0	0	0	0	0	0	2,108	3,018	192	2,235	148	133	2,108	3,018	192	2,235	148	133	79	5,056	106,449	3	3	107,583
		8	RHIB R	igid Hull	1	8.0	100%	64.0	0.0	0.0	64.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	21.8	585.0	3.8	92.2	9.6	э	22	585	4	92	10	9	14	896	18,864	1	1	19,065
		8	CRRC C	ombat F	1	8.0	100%	64.0	0.0	0.0	64.0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	826	0	0	0	0	10	826	0	0	0	3	192	4,042	0	0	4,085

Table D-11: Vessel Emissions – Alternative 2 (continued)

ANTI-SUBMARINE VAREARE View Construction Tracking Exercise-Helo 65 Torpedo Exercise-Helo 6 Tracking Exercise-Maritime Patrol 6 Advanced Exercise-Maritime Patrol Aircraft 36 Torpedo Exercise-Maritime Patrol Aircraft 6 Torpedo Exercise-Surface 31 31 FFG Guided M 1 2.0 100% Tracking Exercise -Surface 6 6 FFG Guided M 1 2.0 100% Torpedo Exercise -Submarine 4 MAJOR TRAINING EVENTS Joint Expeditionary Exercise 1 10 CVN Nuclear (1 80.0 100% 100 CG 1 80.0 100%					
Torpedo Exercise-Helo 6 1 1 1 1 Tracking Exercise-Maritime Patrol Advanced Extended Echo Renging Sonobuoys 0 1 1 1 1 Tracking Exercise - Maritime Patrol Aircraft 36 1 1 1 1 1 Tracking Exercise - Maritime Patrol Aircraft 6 1 1 2.0 100% Tracking Exercise - Sufface 31 31 FFG Guided M 1 2.0 100% Tracking Exercise - Sufface 31 31 FFG Guided M 1 2.0 100% Tracking Exercise - Sufface 31 31 FFG Guided M 1 2.0 100% Tracking Exercise - Sufface 31 10 CVN Nuclear C 1 80.0 100% Tracking Exercise - Sufface 1 10 CVN Nuclear C 1 80.0 100% Joint Expeditionary Exercise 1 10 CVN Nuclear C 1 80.0 100% Join					
Tracking Exercise Multime Patrol Advanced Extended Echo Ranging Sonobuoys 0 1 1 1 1 Tracking Exercise Maritime Patrol Aircraft Sonobuoys 36 - <td< td=""><td></td><td></td><td></td><td></td><td></td></td<>					
Advanced Extended Echo Banging Sonobuoys 0 Image: Sonobuoys Image: Sonooution Sonoution Sonobuoys Image: Sonobuoys					
Sonobuoys 0 1 1 1 1 1 Tracking Exercise - Maritime Patrol Aircraft 6 1 1 2.0 100% Tracking Exercise - Sufface 31 31 PFG Guided M 1 2.0 100% Torpedo Exercise - Sufface 6 6 6 FFG Guided M 1 2.0 100% Tracking Exercise - Submarine 4 1 1 2.0 100% MAJOR TRAINING EVENTS 1 1.0 CVN Nuclear (1 80.0 100% Joint Expeditionary Exercise 1 1.0 CVN Nuclear (1 80.0 100% 4 10 LPD 1 80.0 100% <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
Tracking Exercise - Maritime Patrol Alicraft 36 Image: Construct of the second					
Torpedo Exercise-Maritime Patrol Aircraft 6 1 1 2.0 100% Tracking Exercise -Surface 31 31 FFG Guided M 1 2.0 100% Torpedo Exercise-Surface 6 6 FFG Guided M 1 2.0 100% Tracking Exercise - Submarine 4 -					
Image: Control of the second of the					
Tracking Exercise -Surface 91 91 FFG Quided M 1 2.0 100% Torpedo Exercise-Surface 6 6 6 FFG Quided M 1 2.0 100% Tracking Exercise-Submarine 4 -					
Torpedo Exercise-Sulface 6 6 FFG Guided M 1 2.0 100% Trocking Exercise-Submarine 4	/. 182.0 0.0 91.0 91.0	0 0 0	0 0 0 0 2,998 4,292 273 3,178 210 189	2,398 4,292 273 3,178 210 189 5,395 8,583 546 6,355 420 378	79 14,378 302,714 10 9 305,938
Image: Control of the second of the	% 182.0 0.0 91.0 91.0	0 0 0		2,398 4,292 273 3,178 210 189 5,395 8,583 546 6,355 420 378	79 14,378 302,714 10 9 305,938
Torpedo Exercise - Submarine 9 Image: Constraint of the second s	× 12.0 0.0 6.0 6.0	0 0 0	0 0 0 0 198 283 18 210 14 12	198 283 18 210 14 12 395 566 36 419 28 25	73 348 19,353 1 1 20,172
MAJOR TRAINING EVENTS V V V V Joint Expeditionary Exercise 1 10 CG 1 80.0 100%. Joint Expeditionary Exercise 1 10 CG 2 80.0 100%. Joint Expeditionary Exercise 1 10 CG 2 80.0 100%. Joint Expeditionary Exercise 1 10 CG 5 80.0 100%. L 2.0 LSD 2 80.0 100%.					
Joint Expeditionary Exercise 1 10 CVN Nuclear C 1 80.0 100% 1.0 CG 1 80.0 100% 2.0 FFG 2 80.0 100% 2.0 FFG 2 80.0 100% 2.0 10 100%					
Interpretation Interpr					
10 CG 1 80.0 100% 2.0 FFG 2 80.0 100% 2.0 FFG 2 80.0 100% 10 LHDLHA 1 80.0 100% 2.0 LSD 2 80.0 100% 2.0 LSD 2 80.0 100% 1.0 LHDLHA 1 80.0 100% 1.0 LADE 1 80.0 100% 1.0 TACE 1 80.0 100% 1.0 TACE 1 80.0 100% 1.0 SSN Nuclear C 1 80.0 100% 2.0 DG-PARTNER 1 80.0 100% 2.0 DCG-PARTNER 1 80.0 100% 2.0 DCG-PARTNER 1 80.0 100% 2.0 LCU 2 80.0 100% 2.0 LCU 2 80.0 100%	× 80.0 0.0 80.0 0.0				
Image: Second		0 0 0	0 0 0 0 4,321 6,366 346 6,210 223 201	0 0 0 0 0 0 4,321 6,366 346 6,210 223 201	184 14,720 309,915 10 9 313,215
10 LHDLHA 1 80.0 100% 2.0 LSD 2 80.0 100% 10 LAD 1 80.0 100% 10 LAD 1 80.0 100% 10 TAOE 1 80.0 100% 10 TAOE 1 80.0 100% 10 TAOE 1 80.0 100% 10 SSN Nuclear C 1 80.0 100% 10 SSQN Nuclear C 1 80.0 100% 10 CG-PARTNER 1 80.0 100% 10 SS-PARTNER 1 80.0 100% 10 SS LCU 2 80.0 100% 10 SS CRC 13 80.0 100% 10 LOU RHB 2 80.0 100%		0 0 0	0 0 0 0 5,270 7,546 480 5,587 370 333	0 0 0 0 0 0 0 5,270 7,546 480 5,587 370 333	73 12,640 266,123 3 8 268,957
2.0 LSD 2 80.0 100% 1.0 LPD 1 80.0 100% 1.0 TADE 1 80.0 100% 1.0 TADE 1 80.0 100% 1.0 SSGN Nuclear C 1 80.0 100% 1.0 SSGN Nuclear C 1 80.0 100% 2.0 T-AGQLFA) 2 80.0 100% 2.0 DCAPARTNER 1 80.0 100% 2.0 DCAPARTNER 2 80.0 100% 2.0 LCAC 5 80.0 100% 2.0 LCAC 5 80.0 100% 2.0 LCU 2 80.0 100% 2.0 LCU 2 80.0 100% 2.0 LCU 2 80.0 100% 2.0 RHIB 2 80.0 100% 3.0 CG 3 80.0		0 0 0	0 0 0 0 24,064 45,808 1,604 35,412 1,456 1,310	0 0 0 0 0 0 24,064 45,808 1,604 35,412 1,456 1,310	187 74,800 1,574,839 51 45 1,591,611
10 LPD 1 80.0 100% 10 TADE 1 80.0 100% 10 SSN Nuclear C 1 80.0 100% 10 SSN Nuclear C 1 80.0 100% 2.0 T-AGQLFA) 2 80.0 100% 2.0 T-AGQLFA) 2 80.0 100% 2.0 T-AGQLFA) 2 80.0 100% 2.0 DGG-PARTNER 1 80.0 100% 2.0 DGG-PARTNER 1 80.0 100% 2.0 LCU 2 80.0 100% 2.0 LCU 2 80.0 100% 2.0 RHB 2 80.0 100% 2.0 RHB 2 80.0 100% 14.0 AAV 14 80.0 100% 12.0 RHB 2 80.0 100% 12.0 DGG 12 80.0		0 0 0	0 0 0 0 530 3,482 442 10,478 2,103 1,893		373 29,840 628,251 20 18 634,942
Indext TADE Indext Indext <thindex< th=""> Index Index</thindex<>		0 0 0	0 0 0 1,293 7,653 923 21,680 4,573 4,116		373 59,680 1,256,503 41 36 1,269,884
1.0 SSN Nuclear C 1 80.0 100% 1.0 SSGN Nuclear C 1 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 2.0 DG-PARTNER 1 80.0 100% 2.0 DG-PARTNER 1 80.0 100% 2.0 DG-PARTNER 1 80.0 100% 2.0 LCAC 5 80.0 100% 5.0 LCAC 5 80.0 100% 2.0 LCU 2 80.0 100% 4.0 LCU 2 80.0 100% 2.0 LCU 2 80.0 100% 2.0 RHIB 2 80.0 100% 4.0 AAV 14 80.0 100% 3.0 CG 3 80.0 100% 4.0 L12.0 DDG 12 80.0 100% 2.0 T-AGQ(LFA) 2 <td></td> <td>0 0 0</td> <td>0 0 0 0 278 1,680 206 4,866 1,028 325 0 0 0 0 8,781 24,905 848 9,539 833 750</td> <td></td> <td>373 23,840 628,251 20 18 634,942</td>		0 0 0	0 0 0 0 278 1,680 206 4,866 1,028 325 0 0 0 0 8,781 24,905 848 9,539 833 750		373 23,840 628,251 20 18 634,942
1.0 SSGN Nuclear C 1 80.0 100%. 2.0 T-AGQLFA) 2 80.0 100%. 1.0 CG-PARTNER 1 80.0 100%. 1.0 CG-PARTNER 2 80.0 100%. 1.0 CG-PARTNER 2 80.0 100%. 1.0 SS-PARTNER 2 80.0 100%. 1.0 SS-PARTNER 1 80.0 100%. 2.0 LCAC 5 80.0 100%. 2.0 LCBC 13 80.0 100%. 2.0 LCBC 14.0 80.0 100%. 2.0 RHIB 2 80.0 100%. 14.0 AAV 14 80.0 100%. 3.0 CG 3 80.0 100%. 3.0 CG 3 80.0 100%. 3.0 CG 3 80.0 100%. 3.0 CG SSN 5			0 0 0 0 8,781 24,905 848 9,599 833 750	0 0 0 0 0 0 8,781 24,905 848 3,593 833 750	1,865 149,200 3,141,257 102 89 3,174,711
2.0 T-AGQ(LFA) 2 80.0 100% 1.0 CG-PARTNER 1 80.0 100% 2.0 DGG-PARTNER 1 80.0 100% 2.0 DGG-PARTNER 1 80.0 100% 2.0 DGG-PARTNER 1 80.0 100% 5.0 LCAC 5 80.0 100% 2.0 LCU 2 80.0 100% 2.0 LCU 2 80.0 100% 2.0 RHB 2 80.0 100% 2.0 RHB 2 80.0 100% 4.0 AAV 14 80.0 100% 3.0 CFN 3 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CCP 3 80.0 100% 12.0 DDG 12 80.0 100% 100% 100% 100% 100% 12.0 DDG 12 80.0 10					
1.0 CG-PARTNER 1 80.0 100% 2.0 DGG-PARTNER 2 80.0 100% 1.0 SS-PARTNER 2 80.0 100% 1.0 SS-PARTNER 2 80.0 100% 2.0 LCU 2 80.0 100% 2.0 RHB 2 80.0 100% 2.0 RHB 2 80.0 100% 4.0 RHB 2 80.0 100% 3.0 CRC 14 80.0 100% 3.0 CG 3 80.0 100% 3.0 CG 3 80.0 100% 3.0 FFG 3 80.0 100% 3.0 TACE 3 80.0 100% 2.0		0 0 0	0 0 0 0 1,067 6,299 800 19,109 3,803 3,423	0 0 0 0 0 0 1,067 6,293 800 19,109 3,803 3,423	1,865 238,400 6,282,514 204 178 6,349,422
2.0 DDG-PARTNER 2 80.0 100% 10 SS-PARTNER 1 80.0 100% 5.0 LCAC 5 80.0 100% 5.0 LCAC 5 80.0 100% 10.0 SS-PARTNER 1 80.0 100% 2.0 LCU 2 80.0 100% 11.0 CRRC 13 80.0 100% 2.0 RHIB 2 80.0 100% 2.0 RHIB 2 80.0 100% 14.0 AAV 14 80.0 100% 3.0 CG 3 80.0 100% 3.0 FFG 3 80.0 100% 3.0 TADE 3 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 4.0 LBDLHA 1 80.0 100% <td></td> <td>0 0 0</td> <td>0 0 0 0 8.623 3.768 792 1.680 208 187</td> <td></td> <td>184 14,720 309,915 10 9 313,215</td>		0 0 0	0 0 0 0 8.623 3.768 792 1.680 208 187		184 14,720 309,915 10 9 313,215
Indext SS-PARTNER 1 80.0 100% 5.0 LCAC 5 80.0 100% 2.0 LCU 2 80.0 100% 10.0 CRC 13 80.0 100% 2.0 LCU 2 80.0 100% 2.0 RHIB 2 80.0 100% 2.0 RHIB 2 80.0 100% 14.0 AAV 14 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CVN 3 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CG 3 80.0 100% 3.0 CG 3 80.0 100%		0 0 0	0 0 0 0 16,638 7,384 1,440 2,864 400 360	0 0 0 0 0 0 0 16,638 7,984 1,440 2,864 400 360	187 23,320 623,336 20 18 636,644
2.0 LCU 2 80.0 100% 19.0 CRRC 19 80.0 100% 2.0 RHIB 2 80.0 100% 2.0 RHIB 2 80.0 100% 14.0 AAV 14 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CVN 3 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CVN 3 80.0 100% 3.0 CG 3 80.0 100% 3 80.0 100% 3.0 CG 3 80.0 100% 3 80.0 100% 3.0 TADE 3 80.0 100% 3 100% 100% 2.0 T-AGQLFA) 2 80.0 100% 10% 10% 10% 4.0 LHD/LHA 1 80.0 100% 10% 10%		0 0 0	0 0 0 0 235 1,386 176 4,163 837 753		373 23,840 628,251 20 18 634,942
Image: Second		0 0 0	0 0 0 0 7,328 45,812 1,396 21,844 2,056 1,850	0 0 0 0 0 0 7,328 45,812 1,336 21,844 2,056 1,850	611 507,600 10,687,010 347 302 10,800,827
2.0 RHIB 2 80.0 100% 14.0 AAV 14 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CVN 3 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CVN 3 80.0 100% Joint Multi-Strike Group Exercise 1 3.0 CG 3 80.0 100% 3.0 CG 3 80.0 100% 3 80.0 100% 3.0 TADE 3 80.0 100% 3 80.0 100% 5.0 SSN 5 80.0 100% 2 80.0 100% 1.0 SS-PARTNER 1 80.0 100% 100% 100% 4.0 LHD/LHA 1 80.0 100% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10%		0 0 0	0 0 0 0 2,931 18,325 558 8,738 822 740	0 0 0 0 0 0 2,931 18,325 558 8,738 822 740	611 97,760 2,058,239 67 58 2,080,159
Interface Interface <thinterface< th=""> Interface <thinterface< th=""> Interface <thinterface< th=""> <thinterface< th=""> <thint< td=""><td>× 1520.0 0.0 1520.0 0.0</td><td>0 0 0</td><td>0 0 0 0 0 226 19,610 0 0 0</td><td>0 0 0 0 0 0 0 0 226 13,610 0 0 0</td><td>3 4,560 96,006 3 3 97,029</td></thint<></thinterface<></thinterface<></thinterface<></thinterface<>	× 1520.0 0.0 1520.0 0.0	0 0 0	0 0 0 0 0 226 19,610 0 0 0	0 0 0 0 0 0 0 0 226 13,610 0 0 0	3 4,560 96,006 3 3 97,029
Joint Multi-Strike Group Exercise 1 3.0 CVN 3.3 80.0 100% 3.0 CG 3 80.0 100% 3.0 76 3 80.0 100% 3.0 FFG 3 80.0 100% 12.0 DDG 12 80.0 100% 12.0 DDG 12 80.0 100% 3 80.0 100% 3.0 TADE 3 80.0 100% 3 80.0 100% 4.0 SSN SSN 5 80.0 100% 3 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100%	× 160.0 0.0 160.0 0.0	0 0 0	0 0 0 0 54 1,462 10 230 24 22	0 0 0 0 0 0 54 1,462 10 230 24 22	373 59,680 1,256,503 41 36 1,269,884
3.0 CG 3 80.0 100% 3.0 FFG 3 80.0 100% 3.0 FFG 3 80.0 100% 12.0 DDG 12 80.0 100% 3.0 TADE 3 80.0 100% 5.0 SSN 5 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 1.0 SS-PARTNER 1 80.0 100% 4 4.0 LHDVLHA 1 80.0 100% 4 4.0 LBD 1 80.0 100% 4 4.0 LHDVLHA 1 80.0 100% 4 4.0 LPD 1 80.0 100%	× 1120.0 0.0 1120.0 0.0	0 0 0	0 0 0 0 851 6,966 918 1,400 291 262	0 0 0 0 0 0 851 6,966 918 1,400 291 262	3 3,360 70,741 2 2 71,495
3.0 FFG 3 80.0 100% 12.0 DDG 12 80.0 100% 3.0 TADE 3 80.0 100% 3.0 TADE 3 80.0 100% 5.0 SSN 5 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 1.0 SS-PARTNER 1 80.0 100% Marine Air Ground Task Force Exercise (Amphibious) 4 4.0 LHD/LHA 1 80.0 100% 4.0 LSD 1 80.0 100% 100% 4.0 LPD 1 80.0 100% 4.0 LPD 1 80.0 100%	× 240.0 0.0 0.0 240.0				
112.0 DDG 12 80.0 100% 3.0 TADE 3 80.0 100% 5.0 SSN 5 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% Marine Air Ground Task Force Exercise (Amphibious) 4 4.0 LHD/LHA 1 80.0 100% 4.0 LSD 1 80.0 100% 100%	× 240.0 0.0 0.0 240.0	0 0 0		14,762 19,099 1,037 18,631 670 603 14,762 19,099 1,037 18,631 670 603	184 44,160 323,745 30 26 333,646
3.0 TADE 3 80.0 100% 5.0 SSN 5 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 10 SS-PARTNER 1 80.0 100% Marine Air Ground Task Force Exercise (Amphibious) 4 4.0 LHD/LHA 1 80.0 100% 4.0 LSD 1 80.0 100% 100%		0 0 0		7,906 11,318 720 8,381 554 499 7,906 11,318 720 8,381 554 499	79 18,960 399,184 13 11 403,435
So SSN 5 80.0 100% 2.0 T-AGQ(LFA) 2 80.0 100% 1.0 SS-PARTNER 1 80.0 100% Marine Air Ground Task Force Exercise (Amphibious) 4 4.0 LHD/LHA 1 80.0 100% 4.0 LBD 1 80.0 100% 10%		0 0 0			187 179,520 3,779,614 123 107 3,819,867
2.0 T-AGQ(LFA) 2 80.0 100% 1.0 SS-PARTNER 1 80.0 100% Marine Air Ground Task Force Exercise (Amphibioue) 4 4.0 LHDLHA 1 80.0 100% 4.0 LSD 1 80.0 100% 100% 100% 5.0 4.0 LPD 1 80.0 100% 100% 5.0 1.0 LPD 1 80.0 100% 10%		0 0 0	0 0 0 0 0 0 0 0 0 0 2	26,342 74,714 2,544 28,798 2,498 2,249 26,342 74,714 2,544 28,798 2,498 2,249	1,865 447,600 3,423,770 306 266 3,524,134
Indext SS-PARTNER 1 80.0 100% Marine Air Ground Task Force Exercise (Amphibious) 4 4.0 LHD/LHA 1 80.0 100% 4 4.0 LSD 1 80.0 100% 4.0 LDD 1 80.0 100% 4.0 LDD 1 80.0 100%					
Marine Air Ground Task Force Exercise (Amphibious) 4 4.0 LHD/LHA 1 80.0 100% 4.0 LSD 1 80.0 100%		0 0 0			1,865 298,400 6,282,514 204 178 6,349,422
(Amphibious) 4 4.0 LEDLERA 1 00.0 1007. 4.0 LED 1 80.0 100% 4.0 LED 1 80.0 100% 4.0 LED 1 80.0 100% 5.555512European Marine Air Crown dTack	× 80.0 0.0 0.0 80.0	0 0 0	0 0 0 0 0 0 0 0 0 0	235 1,386 176 4,169 837 753 235 1,386 176 4,169 837 753	373 23,840 628,251 20 18 634,342
4.0 LSD 1 80.0 100% 4.0 LPD 1 80.0 100% Special Durgest Marine & Crownd Tests - - - -	× 320.0 320.0 0.0 0.0	2,362 13,930 1,770	1,770 41,310 8,413 7,572 0 0 0 0 0 0	0 0 0 0 0 0 0 2,362 13,930 1,770 41,910 8,413 7,572	373 119,360 2,513,005 82 71 2,539,769
4.0 LPD 1 80.0 100%	× 320.0 320.0 0.0 0.0	2,586 15,306 1,846	1,846 43,360 3,146 8,231 0 0 0 0 0 0	0 0 0 0 0 0 2,586 15,306 1,846 43,360 3,146 8,231	373 119,360 2,513,005 82 71 2,539,769
Spacial Purposa Marina àir Graund Task		1,114 6,720 826			373 119,360 2,513,005 82 71 2,539,769
2.0 LHA Amphib. A 1 80.0 100%		390 2,298 292	292 6,915 1,388 1,249 390 2,238 292 6,915 1,388 1,249	401 2,368 301 7,125 1,430 1,287 1,181 6,965 885 20,955 4,206 3,786	373 53,680 1,256,503 41 36 1,269,884
Force Exercise 2	1 160.0 52.8 52.8 54.4	2,200 2,200	202 0,010 1,000 1,240 000 2,200 202 0,010 1,000 1,240	401 2,000 001 1,120 1,400 1,201 1,101 0,000 000 20,000 4,200 0,100	
4.0 LPD Amphibio 2 80.0 100%		367 2,218 272	272 6,423 1,357 1,221 367 2,218 272 6,423 1,357 1,221	373 2,285 281 6,617 1,338 1,258 1,114 6,720 826 19,462 4,112 3,701	373 119,360 2,513,005 82 71 2,539,769

Appendix D Air Quality Emissions Calculations

Table D-11: Vessel Emissions – Alternative 2 (continued)

ELECTRONIC WARFARE																																								
Electronic Warfare Operations	522	522 F	FG G	uided M	1 4	100%	2088.0	0.0	0.0	2088.0	0	0	0	0	0	0	0	0	0	0	0	0	68,779	98,470	6,264	72,913	4,823	4,341	68,773	98,470	6,264	72,913	4,823	4,341	79	164,952	3,472,893	113	98	3,509,886
Flare Exercise	2200																																							
Chaff Exercise - Ship	60	60 F	FG G	uided M	1 4	100%	240.0	0.0	0.0	240.0	0	0	0	0	0	0	0	0	0	0	0	0	7,906	11,318	720	8,381	554	499	7,906	11,318	720	8,381	554	499	79	18,960	399,184	13	11	403,435
Chaff Exercise - Aircraft	2200																																							
MINE WARFARE	_																																							
Civilian Port Defense	1	1 B	HIB R	gid Hull	1 24.0	100%	24.0	24.0	0.0	0.0	8.2	219.4	1.4	34.6	3.6	3	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	8	219	1	35	4	3	0	336	7,074	0	0	7,149
Mine Laying - Aircraft	4																																							
Mine Neutralization - Explosive Ordnance																																								
Disposal	20	60 R	HIB R	gid Hull	3 12.0	100%	720.0	720.0	0.0	0.0	244.8	6580.8	43.2	1036.8	108.0	97	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	245	6,581	43	1,037	108	97	66	47,520	1,000,486	32	28	1,011,141
Limpet Mine Neutralization System/Shock Wave Generator	40	40 R	HIB R	gid Hull	1 4.0	100%	160.0	160.0	0.0	0.0	54.4	1462.4	9.6	230.4	24.0	22	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	54	1,462	10	230	24	22	14	2,240	47,161	2	1	47,663
NAVAL SPECIAL WARFARE					_																																			
Personnel I&E		1820 RI 2184 CF) 14560.0) 17472.0		0.0	4950.4 0	133078. 4 2,595	873.6 225,414	20966.4 0	2184.0 0	1,966 0	0.0	0.0 0	0.0	0.0 0	0.0 0	0	0.0 0	0.0	0.0	0.0 0	0.0	0	4,950 0	133,078 2,595	874 225,414	20,966 0	2,184 0	1,966 0	48 3	698,880 52,416	14,714,220	477	416 31	14,870,926
Parachute Insertion	64																																							
OTHER																														1									1	
Surface Ship Sonar Maintenance	44	44 F	FG G	uided M	1 4.0	100%	176.0	176.0	0.0	0.0	5,797	8,300	528	6,146	407	366	0	0	0	0	0	0	0	0	0	0	0	0	5,797	8,300	528	6,146	407	366	79	13,904	292,735	9	8	295,852
Submarine Sonar Maintenance	32				_																																			
Small Boat Attack	27	27 CF	RC C	ombat F	1 4.0	100%	108.0	0.0	108.0	0.0	0	0	0	0	0	0	0	16	1,393	0	0	0	0	0	0	0	0	0	0	16	1,393	0	0	0	3	324	6,821	0	0	6,894
Sub Navigation / Sub Nav Under Ice	8																																							
Precision Anchoring	18	18 F	FG G	uided M	1 4.0	100%	72.0	72.0	0.0	0.0	2,372	3,396	216	2,514	166	150	0	0	0	0	0	0	0	0	0	0	0	0	2,372	3,396	216	2,514	166	150	79	5,688	119,755	4	3	121,031
Direct Action (TAC-P)	30																																							
Underwater Demolition Qualifications	30	30 CF	RC C	ombat F	1 8.0	100%	240.0	0.0	240.0	0.0	0	0	0	0	0	0	0	36	3,096	0	0	0	0	0	0	0	0	0	0	36	3,096	0	0	0	3	720	15,159	0	0	15,320
Intelligence, Surveillance, Reconnaissance	44																																							
Underwater Survey		96 R					768.0			0.0	261.1	7019.5	46.1	1105.9	115.2	104	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	261	7,020	46	1,106	115	104	48	36,864	776,135	25	22	784,400
		96 CF	RCC	ombat F	3 8.0	100%	768.0	768.0	0.0	0.0	0	114	9,908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	9,908	0	0	0	3	2,304	48,508	2	1	49,025
Unmanned Aerial Vehicle Operation	950																																							
Unmanned Underwater Vehicle Training	64																																							
Search and Rescue At Sea	45																																							
TOTAL TRAINING (lbs per year)								38,136	6 5,687	6,050	94,390	792,565	273,202	377,085	65,552	58,997	86,879	198,805	35,431	170,591	21,996	19,797	206,338	367,585	22,511	281,238	21,530	19,377	362,654	915,048	306,053	828,914	109,079	98,171		6,518,69	0 137,244,43	9 4,452	6,12	218,775,03
TOTAL TRAINING (tons per year)											47							99	-	85			103			141			18								68,6			

						0	PERAT	rion/				- Airc										IONSIY	'EAR (I	b) BY -											SYEAR	(Ib) B'	y Juris							Platforn		Fuel Use		GHG E	issions	пы
		、 III	Ai	ircraft	:		Time		Altitu	ude	Dis	tributi	on (%)		Distrib	ution (h	տ)		State	(0-3 n	n offshe	ore)	_		Vate	rs of U	S (3-12	n n)			_	Int Val	ers (> 12	2 nm)		_		Tota	Enissi	ons			Inform	nation	(10	otal)				(••)
Type Training	Training ops		Distribution	AC Sortes (f)	adAt	Ave Time of Rates (10	Total Time of		#(%)	TMe < 3,000 ft (1)	D-3 III from shore	3-12 m from Shore	>12 mm from	Total Time D- 3 um from	shore Total Time 3-	12 IIII from shore Total Three	> 12 m from 8 hore	со	NOx	нс	SOI	PM PI	42.5 C	:0 1	10x	нс	SOI	РМ	PM2.5	co	NOx	но	so		PM2.	-s co		iz Hi	sc	I PI	4 PM	2.5	Model	(M) Fuel Row (IbArr)	Pounds	Gallons	CO2	NzO	р сн.	CO2.,
ANTI-AIR V/	RFARE																																												•	-	•			
vir Combat Mar	neuv 360	00	1	3600	FA- 18E/F	1.0	3600	1.0 (0%	0.0	0%	0%	1003	× 0.0	0 00	.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0) 0	0	0	0	0	F4	4-GE	2 10,33	37216800	5473059	11522978	0 373	8 3256	116,456,977
					AV-8B	1.0	3600	.0 0.0	0%.	0.0	0%	0%	1003	× 0.0	0 0	.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F4)2-RF	1 6,000	21600000	3176471	6687741	2 2170	1890	67,589,656
vir Defense Exe	ercis 100	0	2	200	FA- 18E/F	1.0	200	0 5	50%	100.0	0%	0%	1003	× 0.0	0 0	.00 10	00.00	0	0	0	0	0	0	0	0	0	0	0	0	744	15243	9 124	414	678	2 6104	74	4 152	49 12	41	67	61)4 F4	4-GE	2 10,33	2067600	304059	6401654	208	181	6,469,832
					FA-												-+					-	_										_	_															_	
\ir Intercept Co	ontro 530	00	2	10600	18E/F	1.0	1060	0.0 5	50%	5300.0	0%	0%	1005	× 0.0	0 0	.00 53	300.00	0	0	0	0	0	0	0	0	0	0	0	0	39450	80817	3 657	5 2191	7 3594	32 32348	38 394	.50 8081	173 651	5 213	17 359	132 323	488 F4	4-GE	2 10,33	10958280	0 16115118	3392876	87 1100	7 9588	342,901,093
Gunnery Exerci A-A (Medium	ise, 36	5	1	36	AV-8B	1.0	36.	0 0	0%	0.0	0%	0%	1003	× 0.0	0 0	.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F4)2-RF	1 6,000	216000	31765	668774	22	19	675,897
A-A(Medium			1		FA-	1.0	36.				0*/	0*/	10.02	% 0.0			0.00										•	•	•											0			4-GE	2 10,33	372168	54731	1152298		_	1,164,570
			-	30	18E/F	1.0	36.		0/.	0.0	07.	07.	100,	· 0.0	0 0	.00	0.00	0	0		•	•	•	0	0	•	0	•	0	Ů		0					, ,					F 4	4-GC	2 10,33	372100	54131	1152230	, ər		1,164,510
Aissile Exercise	e, A- 18	, –	1	18	AV-8B	1.0	18.0		0%.	0.0	0%	0%	1003	× 0.0	0 00	.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	F4)2-RF	1 6,000	108000	15882	334387	11	9	337,948
			1	18	FA- 18E/F	1.0	18.0		0%	0.0	0%	0%	1003	% 0.0	0 0	.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F4	4-GE	2 10,33	186084	27365	576149	19	16	582,285
Gunnery Exerci S-A (Large Cali	ise, g berì	·																																		_														
Gunnery Exerci S-A (Medium	ise, 19	,				-																																				+		_						
							_	_														-									-	_	-	-					_									-	-	
Aissile Exercise	^{•, S-} 27	7																																																
	FARF																_																																	
Sombing Exerci		10	1	2300	FA-	1.0	2300	10 1	10%	230.0	0%	0%	1003	× 0.0	0 0	.00 2:	30.00	0	0	0	0	0	0	0	0	0	0	0	0	1712	35072	2 285	351	1553	8 14038	8 171	12 350	72 28	5 95	1 155	98 140	38 F4	4-GE	2 10,33	2377740	3496676	7361902	6 238	8 2081	74,403,063
∿G Í		~			18E/F						•			. 0.0			00.00	•	•	•	•	•	•	•	•	•	Ť	•	•															- 10,000						
Aissile Exercise	^{s, A-} 115	5 (0.5	58	FA- 18E/F	2.0	115.	0 1	10%.	11.5	0%.	0%.	1003	× 0.0	0 0	.00	11.50	0	0	0	0	0	0	0	0	0	0	0	0	86	1754	14	48	780	702	86	6 175	54 14	4	78	0 70	2 F4	4-GE	2 10,33	1188870	174834	368095	1 119	104	3,720,153
3		1	0.5	58	SH-60E	3 2.0	115.	0 10	00%	115.0	0%	0%	1003	× 0.0	0 0	.00 1	15.00	0	0	0	0	0	0	0	0	0	0	0	0	863	883	76	55	580	522	86	3 88	3 7	5	58	0 52	2 77	00-GE	2 1200	138000	20294	427272	14	12	431,823
Gunnery Exerci	ise, 96	5 0	0.5	48	FA-	2.0	96.	0 1	10%	9.6	0%.	0%	1003	× 00	0 0	.00 :	9.60	0	0	0	0	0	0	0	0	0	0	0	0	71	1464	12	40	651	586	71	1 146	34 12	4	65	1 58	6 F4	4-GE	2 10.33	992448	145948	307279	4 100	87	3,105,519
-G			0.5		18E/F SH-60E				00%	36.0	0%	0%	1005	× 0.0			96.00	0	0	0	0	0	0	0	0	0	0	0	0	720	737	63	46	484	435	72	0 73	7 6:	4	48			00-GE		115200	16941	356680			360,478
															~ 0			-	-	-	-	-	-	-	-	-	-	,		1																				

Table D-12: Aircraft Emissions – Alternative 2

Table D-12: Aircraft Emissions – Alternative 2 (continued)

AMPHIBIOUS ¥	ARFARE	E																																														
Fire Support Exercise - Land- Based target	10																																															
																_																								I								
Amphibious Rehearsal, No																																																
Landing - Marine	12	4	48.0	CH-53	18.0	864.0	100	r∕. s	64.0	100%	0%	0%	864.0	00 0.00	0.00	82	15 311	64 57	9 154	8524	7671	0	0	0	0	0	0	0	0	0	0	0	0	8215	31164	573	1543	8524	7671	T64-G	E- 3	4,464	3856896	567191	11941631	387	7 337	12,068,809
Air Ground Task																																																
Force		10	120.0	MV-22	18.0	2160.	0 100	2 21	160.0	100%	0%	0%	016.0	.00 0.00	0.00	1 477	55 35	32 823	38 368	4306	3876	0	0	0	0	0	0	0	0	0	0	0	0	47755	9532	8298	96.8	4306	3876	_	2	2240	4838400	711529	14380540	486	6 423	15,140,083
		2	24.0		18.0				32.0	100%	0%	0%	432.0							980	882	0	0	0	0	0	0	0 0	0	0	0	0	0	779	1101	40	93	980	882	T400-0		540	233280	34306	722276			
		4		AH-1	18.0				64.0	100%	0%	0%	864.						0 28	2347	2652	0	0	0	0	0	0	0	0	0	0	0	0	7865	3817	400	281	2947	2652	T700-0		812	701568	103172	2172178			
		4		AV-8	18.0				0.0	100%	0%	0%	0.0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-F		6,000	5184000	762353	16050573			
Amphibious Assault - Marine Air Ground Task	12	4	48.0	CH-53	18.0	864.0	100	1%. 8	64.0	100%	0%	0%	864.0	00 0.00	0.00	82	15 311	64 57	9 154	8524	7671	0	0	0	0	0	0	0	0	0	0	0	0	8215	31164	579	1543	8524	7671	T64-G	E- 3	4,464	3856896	567191	11941631	387	7 337	12,068,809
-		10	120.0	MV-22	18.0	2160.	0 100	1% 21	160.0	100%	0%	0%	2160.	.00 0.00	0.00	477	55 95	32 82:	98 968	4306	3876	0	0	0	0	0	0	0	0	0	0	0	0	47755	9532	8298	968	4306	3876		2	2240	4838400	711529	14980540	486	6 423	15,140,083
		2	24.0	UH-1	18.0	432.0	100	× 4	32.0	100%	0%	0%	432.	00 0.00	0.00	77	9 11	01 40) 93	980	882	0	0	0	0	0	0	0	0	0	0	0	0	779	1101	40	93	980	882	T400-0	F 2	540	233280	34306	722276	23	3 20	729,968
		4	48.0	AH-1	18.0	864.0	100	i% 8	64.0	100%	0%	0%	864.0	00 0.00	0.00	786	65 38	17 40	0 28	2947	2652	0	0	0	0	0	0	0	0	0	0	0	0	7865	3817	400	281	2947	2652	T700-0	BE 2	812	701568	103172	2172178	70	0 61	2,195,312
		4	48.0	AV-8	18.0	864.0	02	×. 📃	0.0	100%	0%	0%	0.0	0 0.00	0.00	0 0		0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-F	8F 1	6,000	5184000	762353	16050573	9 52	1 454	16,221,517
Amphibious Raid - Special Purpose Marine Air Ground Task Force	6	4	24.0	H-53	12.0	288.0	100	% 2	288.0	100%	0%	0%	288.0	00 0.00	0.00	273	38 103	88 19	3 514	2841	2557	0	0	0	0	0	0	0	0	0	0	0	0	2738	10388	193	514	2841	2557	T64-Gi	E- 3	4,464	1285632	189064	3980544	125	9 112	4,022,936
		10	60.0	MV-22	12.0	720.0	100	7. 7.	20.0	100%	0%	0%	720.0	00 0.00	0.00) 159	18 31	77 276	6 323	1435	1292	0	0	0	0	0	0	0	0	0	0	0	0	15918	3177	2766	323	1435	1292		2	2240	1612800	237176	4993513	162	2 141	5,046,694
		2	12.0	UH-1	12.0	144.0	100	17. 14	44.0	100%	0%	0%	144.0	00 0.00	0.00) 26	0 36	7 13	31	327	294	0	0	0	0	0	0	0	0	0	0	0	0	260	367	13	31	327	294	T400-0	F 2	540	77760	11435	240753	8	7	243,323
		4	24.0	AH-1	12.0	288.0	100	2	288.0	100%	0%	0%	288.	00 0.00	0.00	262	22 12	72 13	3 94	982	884	0	0	0	0	0	0	0	0	0	0	0	0	2622	1272	133	94	982	884	T700-0	3E 2	812	233856	34391	724053	23	3 20	731,771
		4	24.0	AV-8	12.0	288.0) 0%	×.	0.0	100%	0%	0%	0.0	0 0.00	0.00	0 0	() 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-F	8F 1	6,000	1728000	254118	5350193	174	4 151	5,407,172
Non-Combatant Evacuation Operation	5	10	50	MV-22	20.0	1000.	0 100	10	0.000	100%	0%	0%	1000.	.00 0.00	0.00	221	09 44	13 384	12 448	1994	1794	0	0	0	0	0	0	0	0	0	0	0	0	22109	4413	3842	448	1994	1794		2	2240	2240000	329412	6935435	5 225	5 196	7,009,298
		4	20	H-53	20.0	400.0	100	× 4	00.0	100%	0%	0%	400.							3946	3552	0	0	0	0	0	0	0	0	0	0	0	0	3803	14428	268	714	3946	3552	T64-G		4,464	1785600	262588	5528533			
		2	10	UH-1	20.0	200.0			200.0	100%	0%	0%	200.							454	408	0	0	0	0	0	0	0	0	0	0	0	0	361	510	18	43	454	408	T400-0		540	108000	15882	334387			337,948
		4	20	AH-1	20.0				0.00	100%	0%	0%	400.			_				1364	1228	0	0	0	0	0	0	0	0	0	0	0	0	3641	1767	185	130	1364	1228	T700-0		812	324800	47765	1005638			
		4	20	AV-8	20.0	400.0) 0%		0.0	100%	0%	0%	0.0	0 0.00	0.00) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-F	8F 1	6,000	2400000	352941	7430824	24	1 210	7,509,962
Humanitarian Assistance/ Disaster Relief Operations	5	10	50	MV-22	20.0	1000.	0 100	10	000.0	100%	0%.	0%.	1000.	.00 0.00	0.00) 221	03 44	13 384	12 448	1994	1794	0	0	0	0	0	0	0	0	0	0	0	0	22109	4413	3842	448	1994	1794		2	2240	2240000	329412	6935435	5 225	5 196	7,009,298
Second		4	20	H-53	20.0	400.0	100	×. 4	00.0	100%	0%	0%	400.0	00 0.00	0.00	380	03 144	28 26	8 714	3946	3552	0	0	0	0	0	0	0	0	0	0	0	0	3803	14428	268	714	3946	3552	T64-G	E- 3	4.464	1785600	262588	5528533	3 173	3 156	5,587,412
		2			20.0				200.0	100%	0%	0%	200.							454	408	0	0	0	0	0	0	0	0	0	0	0	0	361	510	18	43	454	408	T400-0		540	108000	15882	334387			337,948
		4	20		20.0	400.0	100	. 4	0.00	100%	0%	0%	400.					67 18	5 130	1364	1228	0	0	0	0	0	0	0	0	0	0	0	0	3641	1767	185	130	1364	1228	T700-0		812	324800	47765	1005638			
		4		AV-8	20.0	400.0) 0%		0.0	100%	0%	0%	0.0	0 0.00	0.00) 0) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F402-F	(F 1	6,000	2400000	352941	7430824	24	1 210	7,509,962
Unmanned Aerial Vehicle -																+																																
Intelligence, Surveillance, and Reconaissance	100	1	100.0	MQ-4C	4.0	400.0	100	1%. 4	00.0	100%	0%	0%	400.0	00 0.00	0.00	84	0 155	36 26	4 141	244	220	0	0	0	0	0	0	0	0	0	0	0	0	840	15536	264	1416	244	220	AE300	71 1	2,532	1012800	148941	3135808	102	2 89	3,169,204

ANTI-SUBMARIN	E WAR	FARE																																											
Tracking Exercise-	65	3	195	SH-60B	4.0	780.0	100%	780.0	0%	100%	0%	0.00	780.00	0.00	0	0	0 0	0	0	5850	5330	515	374	3931	3538	0	0	0	0	0	0	5850	5990	515	374	3931	3538	T700-GE	2 120	936000	137647	2898021	94	82	2,328,885
Helo Torpedo Exercise- Helo	6	3	18	SH-60B	4.0	72.0	100%	72.0	0%	100%	0%	0.00	72.00	0.00	0	0	0 0	0	0	540	553	48	35	363	327	0	0	0	0	0	0	540	553	48	35	363	327	T700-GE	2 120	86400	12706	267510	9	8	270,359
Tracking Exercise- Maritime Patrol Advanced Extended Echo Ranging	0	1	0	P-3	6.0	0.0	75%.	0.0	0%.	100%	0%.	0.00	0.00	0.00	0	0	0 0	0	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	T56-A-14	4 4,80	0 0	0	0	0	0	0
Sonobuoys Tracking Exercise - Maritime Patrol	36	1	36	P-3	6.0	216.0	75%	162.0	0%	100%	0%	0.00	162.00	0.00	0	0	0 0	0	0	1952	6011	451	311	3087	2778	0	0	0	0	0	0	1952	6011	451	311	3087	2778	T56-A-14	4 4,80) 1036800	152471	3210116	104	91	3,244,303
Aircraft Torpedo Exercise- Maritime Patrol	6	1	6	P-3	6.0	36.0	75%	27.0	0%	100%	0%	0.00	27.00	0.00	0	0	0 0	0	0	325	1002	75	52	515	463	0	0	0	0	0	0	325	1002	75	52	515	463	T56-A-14	4 4,80	0 172800	25412	535019	17	15	540,717
Aircraft Tracking Exercise -Surface	91																																												
Torpedo Exercise- Sunface	6																																												
Tracking Exercise- Submarine Torpedo Exercise	4																																												
- Submarine	3																																												
MAJOR TRAINING	G EVEI																- /				-	_																							
Joint Expeditionary	1	48 4 3 6 2 4 1 1	4 3 6 2 4	FA-18E/F EA-6B E-2 P-3 AV-8B C-130 A-10 E-3 KC-135	8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0	384.0 32.0 32.0 24.0 48.0 16.0 32.0 8.0 8.0	10% 10% 10% 10% 10% 10% 10% 10%	38.4 3.2 3.2 2.4 4.8 1.6 3.2 0.8 0.8	0% 0% 0% 0% 0% 0% 0%	100% 100% 100% 100% 100% 100% 100% 100%	0% 0% 0% 0% 0% 0% 0%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	38.40 3.20 3.20 2.40 4.80 1.60 3.20 0.80 0.80	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			286 148 18 29 222 15 39 54 25	5855 165 71 89 248 59 86 221 247	48 10 3 7 16 3 4 8 1	153 8 3 5 12 3 4 10 7	2604 73 7 46 109 29 26 7 2 2	66 6 41 98 26 23 6 2	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	286 148 18 29 222 15 39 54 25	5855 165 71 89 248 59 86 221 247	48 10 3 7 16 3 4 8 1	153 8 3 5 12 3 4 10 7	2604 73 7 46 109 29 26 7 2	2344 66 6 41 98 26 23 6 2	F414-GE F402-RF T56-A-4; T56-A-14 F402-RF T56-A-4;	1 6,00 1 1,10 4 4,80 1 6,00	192000 35200 115200 288000 272000 2193664 1045888	28235 5176 16941 42353 10588 28480	12291177 594466 108985 356680 891699 222925 599618 3238254 2267689	339 19 4 12 29 7 19 105 74	347 17 3 10 25 6 17 92 64	12,422,078 600,737 110,146 360,478 901,135 225,239 606,004 3,272,741 2,231,840
		15 4 12 4 2 10	12 4 2	SH-60B CH-53 CH-46 AH-1 UH-1 MV-22	8.0 8.0 8.0 8.0 8.0 8.0	120.0 32.0 36.0 32.0 16.0 80.0	100% 100% 100% 100% 100%	120.0 32.0 36.0 32.0 16.0 80.0	0% 0% 0% 0% 0%	100% 100% 100% 100% 100%	0% 0% 0% 0% 0%	0.00 0.00 0.00 0.00 0.00 0.00	120.00 32.00 36.00 32.00 16.00 80.00	0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0			900 304 2454 291 29 1769	922 1154 593 141 41 353	79 21 380 15 1 307	58 57 58 10 3 36	605 316 256 109 36 159	544 284 231 38 33 144	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	900 304 2454 291 29 1769	922 1154 593 141 41 353	79 21 380 15 1 307	58 57 58 10 3 36	605 316 256 109 36 159	544 284 231 38 33 144	T700-GE T64-GE- T58-GE- T700-GE T400-CF	2 540 2 224	4 142848 144000 25384 8640 173200	21176 21007 21176 3821 1271 26353	445843 442283 445843 80451 26751 554835	14 14 14 3 1 18	13 12 13 2 1 1 16	450,538 446,333 450,538 81,308 27,036 560,744
Joint Multi-Strike Group Exercise	1	144 12 5 1 2 6 24 45	12 12 5 1 2 6 24	FA-18E/F EA-6B E-2 P-3 E-3 KC-135 B-1B F-15 SH-60B	8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0	1152.0 36.0 40.0 8.0 16.0 48.0 132.0 360.0	10% 10% 10% 10% 10% 10% 10%	115.2 3.6 3.6 4.0 0.8 1.6 4.8 19.2 360.0	0% 0% 0% 0% 0% 0% 0%	0% 0% 0% 0% 0% 0% 0%	100% 100% 100% 100% 100% 100% 100%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00	115.20 3.60 4.00 0.80 1.60 4.80 13.20 360.00	0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	857 444 54 48 54 49 27 431 2700		143 31 8 11 8 1 4 77 238	476 23 8 10 15 13 48 173	7813 219 20 76 7 5 4 970 1814	7031 197 18 69 6 4 4 873 1633	857 444 54 48 54 49 27 431 2700	17566 495 212 148 221 494 418 5558 2765	143 31 8 11 8 1 4 77 238	476 23 8 10 15 13 48 173	7813 219 20 76 7 5 4 970 1814	7031 197 18 69 6 4 4 873 1633	F414-GE F402-RF T56-A-4; T56-A-14 F100-PW T700-GE	1 6,00 1 1,10 4 4,80 4 130,7 4 31,55 4 26,56 2 613	0 576000 105600 0 192000 66 1045888 2 1464832 0 1274880 1189632	84706 15529 28235 153807 215416	36873530 1783398 326956 594466 3238254 4535378 3947253 3683311 1337548	1196 58 11 19 105 147 128 119 43	50 9 17 92 128 112	37,266,233 1,802,331 330,438 600,737 3,272,741 4,583,680 3,383,232 3,722,538 1,351,733
Marine Air Ground Task Force Exercise (Amphibious)	4	1 2 4 12 4 2 10	16 48 16 8	C-130 SH-60B CH-53 CH-46 AH-1 UH-1 UH-1 MV-22	8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0	32.0 64.0 128.0 384.0 128.0 64.0 320.0	10% 100% 100% 100% 100% 100%	3.2 64.0 128.0 384.0 128.0 64.0 320.0	50% 50% 50% 50% 50% 50%	50% 50% 50% 50% 50% 50%	0% 0% 0% 0% 0% 0%	1.60 32.00 64.00 192.00 64.00 32.00 160.00	1.60 32.00 64.00 192.00 64.00 32.00 160.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	609 3926 583 58	2308 3926 (283 82	3 3 21 15 43 114 08 33 30 2 3 7 515 73	2 41 1 21 7:	31 568 0 369 8 196 3 65	583 58	59 246 2308 349 283 82 706	3 21 43 608 30 3 615	3 15 114 32 21 7 72	29 161 631 410 218 73 319	26 145 568 369 196 65 287	0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	30 480 1217 7852 1165 115 7075	118 432 4617 4875 565 163 1412	7 42 86 1217 53 6 1223	6 31 229 184 42 14 143	57 323 1263 820 437 145 638	51 290 1136 738 393 131 574	T56-A-4; T700-GE T64-GE- T58-GE- T700-GE T400-CF	2 120 3 4,46 2 120 2 812	4 571392 4 571392 460800 103936 34560	21176 11234 84028 67765 15285 5082 105412	445843 237786 1769130 1426718 321804 107004 2219339	14 8 57 46 10 3 72	13 7 50 40 9 3 63	450,538 240,319 1,787,972 1,441,913 325,231 108,143 2,242,975
Special Purpose Marine Air Ground Task Force Exercise	2	1 4 12 4 2 10	8 24 8 4	C-130 CH-53 CH-46 AH-1 UH-1 MV-22	8.0 8.0 8.0 8.0 8.0 8.0	16.0 64.0 192.0 64.0 32.0 160.0	10% 100% 100% 100% 100%	1.6 64.0 132.0 64.0 32.0 160.0	50% 50% 50% 50% 50%	50% 50% 50% 50% 50% 50%	0% 0% 0% 0% 0%	0.80 32.00 36.00 32.00 16.00 80.00		0.00 0.00 0.00 0.00 0.00 0.00	291 29	1963 3 141 41	2 1 21 51 04 44 15 10 1 3 07 34	-	5 185 9 98 6 33	7 304 1963 291 29 1769	29 1154 475 141 41 353	2 21 304 15 1 307	1 57 46 10 3 36	14 316 205 109 36 159	13 284 185 98 33 144	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	15 609 3926 583 58 3537	59 2308 2438 283 82 706	3 43 608 30 3 615	3 114 32 21 7 72	29 631 410 218 73 319	26 568 369 196 65 287	T56-A-4; T64-GE- T58-GE- T700-GE T400-CF	3 4,46 2 120 2 812	4 285636 230400 51968 17280	7642 2541	222925 884565 713359 160902 53502 1109670	7 23 23 5 2 36	6 25 20 5 2 31	225,299 893,986 720,956 162,616 54,072 1,121,488

Table D-12: Aircraft Emissions – Alternative 2 (continued)

Table D-12: Aircraft Emissions – Alternative 2 (continued)

ELECTRONI	VAR	FARE																																												
Electronic Waifare Operations	522	1	522	FA-181 2	2.0 104	\$4.0 0	% 0.0	07	. 0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-GE	2 10,33	38 107:	92872	1587187	33416636	1084	944	33,772,523
Flare Exercise	2200	0.9	1980	F-15 3	0 53	40.0 0	% 0.0	07	. 0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F100-PW	2 6196	6 368	804240	5412388	113952422	3697	3220	115,166,015
				FA-181 3							0.00	0.00		0	0	0	0	0	0	0	0		· ·	-	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-GE			93848	602036	12675276	411	358	12,810,267
		0.04	88	SH-60 3	3.0 26	4.0 10	0% 264.	0 07	· 0%	100%	0.00	0.00	264.00	0	0	0	0	0	0	0	0		0 0	0	0	1980	2028	174	127	1331	1198	1980	2028	174	127	1331	1198	T700-GE	2 1200	0 31	16800	46588	980869	32	28	991,315
Chaff Exercise -	60				-			-	-											_				_		+		_											_	_						
Ship																																														
Chaff Exercise -	2200	0.9	1980	F-15 3	.0 53	40.0 0	% 0.0	07	×. 0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0		0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F100-PW	2 6196	6 368	304240	5412388	113952422	3697	3220	115,166,015
Aircraft			132	FA-181 3	3.0 39	6.0 0	% 0.0	07	. 0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0		0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F414-GE	2 10,33	8 403	93848	602036	12675276	411	358	12,810,267
		0.04	88	SH-60 3	0 26	4.0 10	0% 264.	0 07	×. 0%	100%	0.00	0.00	264.00	0	0	0	0	0	0	0	0		0 0	0	0	1980	2028	174	127	1331	1198	1980	2028	174	127	1331	1198	T700-GE	2 1200	0 31	16800	46588	980869	32	28	991,315
MINE WARE/	_	_		_		_			_							_	_			_	_	_		-	_			_	_	-				-					_	_						
Mine Laying - Aircraft				FA-18 0							0.00		0.00	0	0	0	0	0	0	0	0					0		0	0	0	0	0	0	0	0	0	0	F414-GE			0338	1520	32008	1	1	32,349
		0.5	2	P-3 1	.0 2	.0 0	% 0.0	07	· 0%	100%	0.00	0.00	0.00	0	0	0	0	0	0	0	0		0 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	T56-A-14	4 4,80		9600	1412	29723	1	1	30,040
Mine						-		-	_												_	_				+		_											_		0	0	0	0.00	0.00	0
Neutralization -	20																																													
Explosive Ordnance																	-		-	-					-	-	-		-											-						
Limper Mine		-			-			-				-									_					-					-															
Neutralization System/Shock	60																																													
Wave																																														
NAVAL SPE																																														
Personnel I&E	364						0% 11648 0% 5824							87360 128762	89457 25700	22373		58706	5283	5 0	0			0	0	0	0	0	0	0	0	87360		22373	2603	58706	52835 10450		2 1200		977600 045760	2055529 1918494	43277116 40391975	1404	1223	43,738,017 40,822,149
		-	120	MY-22 0	.0 30,	24.0 10	0/. 3024	.0 100	. 07.	. 07.	5024.00	0.00	0.00	120102	20100	22013	2003	non	10430	, ,			, 0			ľ	0			0		120102	20100	22010	2003	non	10430		2 224	0 130	43700	1310434	40331313	1310	1142	40,022,143
Parachute	64	1	64	C-130 4	.0 25	6.0 10	0% 256.	0 100	0%	0%	256.00	0.00	0.00	2385	9400	541	461	4573	4116	0	0		0	0	0	0	0	0	0	0	0	2385	9400	541	461	4573	4116	T56-A-4;	4 4,50	0 115	52000	169412	3566795	116	101	3,604,782
Insertion							0% 256.						0.00	5235	0	811	123	547	492	0	0		0 0	-	0	0	0	0	0	0	0	5235	0	811	123	547	492	T58-GE-			07200	45176	951145	31	27	961,275
		1	64	H-60 4	.0 25	6.0 10	0% 256.	0 100	0%	0%	256.00	0.00	0.00	1920	1966	163	123	1290	1161	0	0) 0	0	0	0	0	0	0	0	0	1920	1966	169	123	1290	1161	T700-GE	2 1200	0 30	07200	45176	951145	31	27	961,275
OTHER							_										_		_	_	_			_	_			_						_					_	_				_		
Surface Ship	42	-				_			-									-				_		_			-					-	-				-			-				-		
Sonar	46							_				_							_		_			_	_	_		_			_								_							
Submarine					-		-	-	-			-							-					-		-	_				-				-											
Sonar	48																		_		_				_	_					_															
Small Boat	27						_	_	_											_				_		-														_						
Attack	£1								_								-		-	-											-			-	_					-				-		
Sub Navigation																	1														1													1		
/ Sub Nav Under Ice	8																																													
ender nee																																														
Precision	18																																													
Anchoring								_	_										_	_								_																		
Unmanned Aerial Vehicle	350																																													
Intelligence, Surveillance,	44		44.0	мα-	17	6.0 10	0% 176.		2 50%	50%	0.00	88.00	0.00	0	0	0	0	0	0	185	341	18 5	8 312	2 54	48	.	0	0	0	0	0	185	3418	58	312	54	48	AE3007I	1 2 52		45632	65534	1379755	45	39	1,394,450
and	**	·	44.0	4C °	in Ir	0.0 10					0.00	00.00	0.00	Ů	°,	Ů	l .		Ů	105	941	. 5	5 512	. 34	40	ľ	Ů		ľ	, v	ľ	103	0410		512		40	ACOUNT	, 2,00	44		00004	1010100	40		1,004,400
Reconnaissanc					_	_		_	_								-		_	-	_				-	_	-		-	_				_						-				_		
Underwater Survey	32	1	32	ан- 60B 2	2.0 6	4.0 10	0% 64.)	100	0%	0%	64.00	0.00	0.00	480	492	42	31	323	290	0	0		0	0	0	0	0	0	0	0	0	480	492	42	31	323	290	T700-GE	2 1200	0 76	6800	11294	237786	8	7	240,319
Unmanned Underwater	64																																													
Vehicle	04																																													
Training																																														
TOTAL TRAI																							23 1,99	4 15,01	5 13,513								0 1,251,50										1,264,811,32			
TOTAL TRAI	IING (t	tons p	per ye	ar)										226	152	32	2 10	6	8 (51 1	4	17	2	1	8 7	7 3	31 45	7 4	L 13	3 20	L 184	L 27	1 62	6 35) 24	279) 25	1		2	204,254 7	60,074,633	632,40	5 21	18	639,1

MEM Category	Location	Training MEM	Testing MEM		Emi	ssions (Traini					En	nissions Test		r)	
		#/yr	#/yr	CO	NOx	VOC	SOx	PM10	PM2.5	CO	NOx	VOC	SOx	PM10	PM2.5
BOMBS															
Bombs (H-E)	МПТ	6,454	0	394,551.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bombs (N-E)	МПТ	2,820	0	719.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROJECTILES															
Small Caliber	МПТ	310,155	0	713.4	30.1	0.0	0.0	15.8	11.8	0.0	0.0	0.0	0.0	0.0	0.0
Medium Caliber (H-E)	мпт	23,020	4082	92.1	29.9	0.0	0.0	218.7	117.4	16.3	5.3	0.0	0.0	38.8	20.8
Medium Caliber (N-E)	мпт	309,275	0	804.1	30.0	0.0	0.0	43.3	37.1	0.0	0.0	0.0	0.0	0.0	0.0
Large Caliber (H-E)	МПТ	6,757	240	864.9	1,081.1	0.0	0.0	64.9	50.3	30.7	38.4	0.0	0.0	2.3	1.8
Large Caliber (N-E)	МПТ	24,540	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missiles (H-E)	МПТ	258	20	7,900.9	9,178.1	0.0	0.0	15,943.1	15,943.1	612.5	711.5	0.0	0.0	1,235.9	1,235.9
Missiles (N-E)	МПТ	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rockets (H-E)	МПТ	4,100	16	3,813.0	23.0	0.0	0.0	1,640.0	1,189.0	14.9	0.1	0.0	0.0	6.4	4.6
Rockets (N-E)	МПТ	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COUNTERMEASURES															
Chaff	МПТ	18,204	0	1.1	2.8	0.0	0.0	5.1	4.7	0.0	0.0	0.0	0.0	0.0	0.0
Flares	МПТ	17,600	0	1.0	2.7	0.0	0.0	5.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0
TARGETS															
Airborne targets	МПТ	16	0												
Surface targets	МПТ	240	0												
Expendable sub-surface targets	МПТ	261	0												
TOTAL EMISSIONS (Ibs	per year)			409,461	10,378	0	0	17,936	17,358	674	755	0	0	1,283	1,263
TOTAL EMISSIONS (ton	s per year)			204.7	5.2	0.0	0.0	9.0	8.7	0.3	0.4	0.0	0.0	0.6	0.6

Table D-13: Emissions from Ordnance – Alternative 2

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