

**CURRICULUM OUTLINE OF INSTRUCTION
SURFACE WARFARE OFFICER DEPARTMENT HEAD COURSE**

CIN: A-4H-0107

CDP: 9545

VER: 1.0

CHANGE: 3

MODULE 1-3: AIR AND MISSILE DEFENSE		
Lesson #	Topic	Objectives
1-3-1	Air and Missile Defense Fundamentals	<p>TO 1-3-1.1 EXPLAIN the following in relation to the Air and Missile Defense (AMD) mission:</p> <ul style="list-style-type: none"> • Battlespace areas and sectors • Command and Control • Communications procedures and reporting • US Navy and Coast Guard surface ship systems <p>TO 1-3-1.2 COMMUNICATE effectively on internal and external Air and Missile Defense circuits, including delivering all required reports.</p> <p>TO 1-3-1.3 CONDUCT proper threat determinations for given scenario using ROE, National Policy, PFID, PHID, and all applicable ID sources.</p>
1-3-1-1	Air and Missile Defense Roles and Responsibilities	<p>EO 1-3-1-1.1 DEFINE and DESCRIBE these governing documents and their roles in AMD:</p> <ul style="list-style-type: none"> • OPGEN • OPTASK Air Defense • OPTASK Identification Supp • Daily Intentions Message (DIM) • Special Instructions (SPINS) • CVN Air Plan • Air Tasking Order • Air Control Order <p>EO 1-3-1-1.2 DESCRIBE the layout of your ship class's CIC and the watchstanders who support the AMD Mission.</p> <p>EO 1-3-1-1.3 DEFINE AMDC and DESCRIBE their responsibilities in AMD.</p> <p>EO 1-3-1-1.4 DEFINE FADIZ and DESCRIBE their responsibilities in AMD.</p> <p>EO 1-3-1-1.5 DEFINE CFACC/JFACC and DESCRIBE their responsibilities in AMD.</p> <p>EO 1-3-1-1.6 DEFINE AADC and DESCRIBE their responsibilities in AMD.</p> <p>EO 1-3-1-1.7 DEFINE RADC/MRADC/SADC and DESCRIBE their responsibilities in AMD.</p> <p>EO 1-3-1-1.8 DEFINE TACON, OPCON, ADCON, and DESCRIBE their use in AMD.</p> <p><u>EO 1-3-1-1.9 DEFINE the tripwires to activate the alternate Air and Missile Defense Commander.</u></p>

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1-3-1-2	Air Defense Communications	<p>EO 1-3-1-2.1 LIST and DESCRIBE Internal Communications circuits and procedures for Air Defense.</p> <p>EO 1-3-1-2.2 LIST and DESCRIBE External Communications circuits and procedures for Air Defense.</p> <p>EO 1-3-1-2.3 LIST and DEFINE standard AMD Brevity Words.</p> <p>EO 1-3-1-2.4 DESCRIBE and USE a Card of the Day.</p> <p>EO 1-3-1-2.5 DESCRIBE and CONDUCT "Checkprint" procedures.</p> <p>EO 1-3-1-2.6 DESCRIBE and CONDUCT an Air and Missile Defense SITREP.</p> <p>EO 1-3-1-2.7 DESCRIBE the purpose of a Hail, Query, Warning, and Safety of Flight in AMD.</p> <p>EO 1-3-1-2.8 CONDUCT Air Defense Hails, Queries, Warnings, and Safety of Flight Advisories.</p> <p>EO 1-3-1-2.9 LIST and DESCRIBE Air and Missile Defense required reports.</p>
1-3-1-3	<u>Capabilities and Limitations of Air Defense Units</u>	<p><u>EO 1-3-1-3.1 DESCRIBE the capabilities of air search radars.</u></p> <p><u>EO 1-3-1-3.2 LIST and DESCRIBE CIWS modes of operation.</u></p> <p>EO 1-3-1-3.3 DESCRIBE the process to verify your ship's firing arcs after reporting aboard.</p> <p><u>EO 1-3-1-3.4 LIST and DESCRIBE the various Air Defense Combat Systems.</u></p> <p>EO 1-3-1-3.5 DESCRIBE the Air Defense weapons postures for your ship class.</p> <p>EO 1-3-1-3.6 DESCRIBE the various conditions of readiness, their implications in an Air and Missile Defense scenario, and your considerations in altering conditions of readiness.</p> <p>EO 1-3-1-3.7 DESCRIBE the various material conditions, their implications in an Air and Missile Defense scenario, and your considerations in altering conditions of readiness.</p> <p><u>EO 1-3-1-3.8 LIST USN, USMC, and USAF Fighter Aircraft and DESCRIBE their capabilities and limitations.</u></p> <p><u>EO 1-3-1-3.9 LIST USN EA Capable Aircraft and DESCRIBE their capabilities and limitations.</u></p>

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Lesson #	Topic	Objectives
		<p><u>EO 1-3-1-3.10 LIST USN and USAF Airborne Early Warning Aircraft and DESCRIBE their capabilities and limitations.</u></p> <p><u>EO 1-3-1-3.11 LIST USN and USAF Tanker Aircraft and DESCRIBE their capabilities and limitations.</u></p> <p><u>EO 1-3-1-3.12 LIST USN, USMC, and USAF air-to-air weapons and DESCRIBE their capabilities and limitations.</u></p>
1-3-1-4	Air Defense Battlespace	<p>EO 1-3-1-4.1 LIST, DEFINE and DESCRIBE the elements of the AMD Battlespace, including:</p> <ul style="list-style-type: none"> • Territorial Airspace • Territorial Airspace Buffer • Relevant Geographic Considerations • Threat SAM sites & associated threat range(s) • Threat CDCM sites & associated threat range(s) • Threat Air Bases • Threat Axis • Threat Sector • Vital Area (VA) • Classification, Identification, and Engagement Area (CIEA) • Surveillance Area (SA) • Weapon Employment Zones (MEZ/FEZ/Crossover Zone/JEZ) • Minimum Risk Routes (MRR) • High Density Air Control Zone (HIDACZ) <p>EO 1-3-1-4.2 DRAW the following components of the AMD Battlespace:</p> <ul style="list-style-type: none"> • Territorial Airspace • Territorial Airspace Buffer • Relevant Geographic Considerations • Threat SAM sites & associated threat range(s) • Threat CDCM sites& associated threat range(s) • Threat Air Bases • Threat Axis • Threat Sector • Vital Area (VA) • Classification, Identification, and Engagement Area (CIEA) • Surveillance Area (SA) • Weapon Employment Zones (MEZ/FEZ/Crossover Zone/JEZ) • Minimum Risk Routes (MRR) • High Density Air Control Zone (HIDACZ) <p>EO 1-3-1-4.3 LIST and DESCRIBE the elements required to operate in a joint engagement zone (JEZ).</p>

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MODULE 1-3: AIR AND MISSILE DEFENSE		
Lesson #	Topic	Objectives
1-3-1-5	Air Defense Threat Determination	<p>EO 1-3-1-5.1 LIST and DESCRIBE National Policy and its role in decision making.</p> <p>EO 1-3-1-5.2 DESCRIBE the effect Rules of Engagement (ROE) have on threat determination decisions.</p> <p>EO 1-3-1-5.3 DESCRIBE the process to request additional ROE/modify existing ROE.</p> <p>EO 1-3-1-5.4 LIST and DESCRIBE the major ID sources available to make a threat determination.</p> <p>EO 1-3-1-5.5 DESCRIBE common equipment available to assist in contact identification.</p> <p>EO 1-3-1-5.6 LIST and DEFINE threat warnings and DESCRIBE how they impact tactical decisions.</p> <p>EO 1-3-1-5.7 LIST and DEFINE weapon control states and DESCRIBE how they impact tactical decisions.</p> <p>EO 1-3-1-5.9 LIST and DESCRIBE the elements comprising Positive Hostile Identification (PHID), per the Navy Wide OPTASK Air Defense.</p> <p>EO 1-3-1-5.10 LIST and DESCRIBE the elements comprising Positive Friendly Identification (PFID), per the Navy Wide OPTASK Air Defense.</p> <p>EO 1-3-1-5.11 LIST and DESCRIBE Return to Force (RTF) procedures.</p>
1-3-2	Air Defense Self Defense	<p>TO 1-3-2.1 CONDUCT effective Self-Defense, including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment <p>TO 1-3-2.1.2 EXPLAIN the appropriate Self Defense action(s) based on a provided scenario.</p>

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MODULE 1-3: AIR AND MISSILE DEFENSE		
Lesson #	Topic	Objectives
1-3-2-1	Air Defense Self Defense Employment	<p>EO 1-3-2-1.1 LIST and DESCRIBE the steps of the Air Defense Self Defense Detect to Engage sequence.</p> <p>EO 1-3-2-1.2 DESCRIBE the internal and external requirements of the TAO in a Self Defense posture.</p> <p>EO 1-3-2-1.3 DESCRIBE the process to determine whether Hard Kill and/or Soft Kill procedures need to be implemented.</p> <p>EO 1-3-2-1.4 DESCRIBE the procedures to counter a Sea Skimming Cruise Missile.</p> <p>EO 1-3-2-1.5 DESCRIBE the procedures to counter a High Diving Cruise Missile.</p> <p>EO 1-3-2-1.6 DESCRIBE the procedures for Soft Kill to include push fire ranges.</p> <p>EO 1-3-2-1.7 DESCRIBE the procedures to counter a Low Slow Flyer (LSF).</p>
1-3-3	Air Defense Point Defense	<p>TO 1-3-3.1 CONDUCT effective Point-Defense including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment • Ships' stationing • Mission Essential Unit (MEU) coordination <p>TO 1-3-3.1.2 EXPLAIN the appropriate Point Defense action(s) based on a provided scenario.</p>
1-3-3-1	Air Defense Point Defense	<p>EO 1-3-3-1.1 DESCRIBE the effects of cross range and back range as they apply to Point Defense.</p> <p>EO 1-3-3-1.2 LIST and DESCRIBE examples of EMI victimization that may occur during Point Defense.</p> <p>EO 1-3-3-1.3 DESCRIBE the Point Defense Detect to Engage sequence.</p> <p>EO 1-3-3-1.4 DESCRIBE the internal and external requirements of the TAO in a Point Defense posture, either as the shotgun or defended unit.</p> <p>EO 1-3-3-1.5 DESCRIBE the process to determine whether Hard Kill and/or Soft Kill procedures need to be implemented.</p> <p>EO 1-3-3-1.6 DESCRIBE the use of Nulka to protect a MEU and ship's stationing.</p>

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MODULE 1-3: AIR AND MISSILE DEFENSE		
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		EO 1-3-3-1.7 DEFINE our Navy's doctrinal Shotgun stations. EO 1-3-3-1.8 DESCRIBE the difficulties of performing Plane Guard and Shotgun duties simultaneously
1-3-4	Area Air Defense	TO 1-3-4.1 CONDUCT effective Area-Defense including: <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment • Ships' stationing • MEU coordination • Aircraft employment • Ballistic Missile Defense (BMD) TO 1-3-3-1.2 PERFORM the duties of a Task Force Air and Missile Defense Force TAO. TO 1-3-3-1.3 PERFORM the duties of a Task Force Air and Missile Defense Coordinator. TO 1-3-3-1.4 EXPLAIN the appropriate Area Defense action(s) based on a provided scenario.
1-3-4-2	Air Operations	EO 1-3-4-2.1 DESCRIBE Deck Launch Intercept (DLI) Alert Postures. EO 1-3-4-2.2 DESCRIBE the process to launch and control a DLI aircraft. EO 1-3-4-2.3 DESCRIBE the function/actions of the FADIZ. EO 1-3-4-2.4 DESCRIBE the limitations of defensive counter air (DCA) fuel capacity. EO 1-3-4-2.5 LIST and DESCRIBE DCA relief procedures. EO 1-3-4-2.6 DESCRIBE the role, responsibilities, and communications of the Air Intercept Controller (AIC) in Air Defense. EO 1-3-4-2.7 DESCRIBE the principles of Fighter Tactics. EO 1-3-4-2.8 LIST the requirements to execute Fighter Tactics. EO 1-3-4-2.9 DESCRIBE the principles of Drag to Defend Tactics. EO 1-3-4-2.10 DESCRIBE the principles of Notch to Defend Tactics. EO 1-3-4-2.12 LIST and DESCRIBE the three types of Aircraft Self Defense tactics.

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Lesson #	Topic	Objectives
		<p>EO 1-3-4-2.13 LIST the no later than commit ranges for an associated threat missile class.</p> <p>EO 1-3-4-2.14 LIST and DESCRIBE DCA commit procedures and ranges.</p> <p>EO 1-3-4-2.15 DRAW a DCA desired engagement zone (DEZ).</p> <p>EO 1-3-4-2.16 DESCRIBE the purpose and parameters of an Asset Protection Zone</p> <p>EO 1-3-4-2.17 STATE the elements of a VID report.</p>
1-3-4-3	Maritime Ballistic Missile Defense	<p>EO 1-3-4-3.1 DESCRIBE current Ballistic Missile threats.</p> <p>EO 1-3-4-3.2 DESCRIBE current US Navy BMD capabilities.</p> <p>EO 1-3-4-3.3 LIST and DESCRIBE US BMD weapons (USN and USA).</p> <p>EO 1-3-4-3.4 LIST and DESCRIBE BMD datalinks.</p> <p>EO 1-3-4-3.5 DESCRIBE current Joint BMDS capabilities.</p> <p>EO 1-3-4-3.6 DESCRIBE current Aegis BMD missions and engagement types.</p> <p>EO 1-3-4-3.7 DESCRIBE the limitations of BMD tasking on Air Defense.</p>
1-3-4-4	Area <u>Air</u> Defense	<p>EO 1-3-4-4.1 DESCRIBE the factors to be considered when developing a screen that meets Air and Missile Defense requirements.</p> <p>EO 1-3-4-4.2 DESCRIBE how ADU stationing affects the Classification Identification and Engagement Area (CIEA) and Surveillance Area (SA).</p> <p>EO 1-3-4-4.3 DESCRIBE the risk and mitigation procedures when <u>operating within a threat's weapons release Range (WRR)</u>.</p> <p>EO 1-3-4-4.4 DESCRIBE the factors affecting Airborne Early warning (AEW) aircraft stationing.</p> <p>EO 1-3-4-4.5 DESCRIBE the factors affecting Defensive Counter Air (DCA) aircraft stationing and Desired Engagement (DEZ) placement.</p> <p>EO 1-3-4-4.6 DESCRIBE the factors affecting airborne tanker stationing.</p>

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MODULE 1-3: AIR AND MISSILE DEFENSE		
Lesson #	Topic	Objectives
		<p>EO 1-3-4-4.7 DRAW and DESCRIBE the elements of an Area Air Defense battlespace and stationing plan.</p> <p><u>EO 1-3-4-4.8 DESCRIBE the Area Defense Detect to Engage sequence.</u></p> <p><u>EO 1-3-4-4.9 DESCRIBE the internal and external requirements of the TAO in an Area Defense posture.</u></p> <p><u>EO 1-3-4-4.10 DESCRIBE the process to determine whether Hard Kill and/or Soft Kill procedures need to be implemented.</u></p> <p><u>EO 1-3-4-4.11 IDENTIFY the platforms and components to operate in a NIFC-CA environment.</u></p> <p><u>EO 1-3-4-4.12 DESCRIBE the changes to Area Air Defense capability in a NIFC-CA environment.</u></p>
1-3-5-1	AMD MMTT In-Brief	<p>1-3-5-1-A IDENTIFY the friendly order of battle for AMD scenarios 1-5.</p> <p>1-3-5-1-B IDENTIFY the threat order of battle for AMD scenarios 1-5.</p> <p>1-3-5-1-C IDENTIFY the Air Defense Procedures and pre-planned responses for AMD scenarios 1-5.</p>
1-3-5-2	AD MMTT Familiarization	EO 1-3-5-2.1 COMPLETE the MMTT watchstander job sheet.
1-3-5-3	AD MMTT Scenario One	<p>TO 1-3-2.1 CONDUCT effective Self-Defense, including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment
1-3-5-4	AD MMTT Scenario Two	<p>TO 1-3-2.1 CONDUCT effective Self-Defense, including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment
1-3-5-5	AD MMTT Scenario Three	<p>TO 1-3-2.1 CONDUCT effective Self-Defense, including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment

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MODULE 1-3: AIR AND MISSILE DEFENSE		
Lesson #	Topic	Objectives
		<p>TO 1-3-3.1 CONDUCT effective Point-Defense including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment • Ships' stationing • Mission Essential Unit (MEU) coordination
1-3-5-6	AD MMTT Scenario Four	<p>TO 1-3-2.1 CONDUCT effective Self-Defense, including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment <p>TO 1-3-3.1 CONDUCT effective Point-Defense including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment • Ships' stationing • Mission Essential Unit (MEU) coordination <p>TO 1-3-4.1 CONDUCT effective Area-Defense including:</p> <ul style="list-style-type: none"> • Maneuvering • Readiness Posture • Communications • Threat determination • Weapons employment • Ships' stationing • MEU coordination • Aircraft employment • Ballistic Missile Defense (BMD)
1-3-5-7	AD MMTT Student Brief	<p>TO 1-3-1.1 EXPLAIN the following in relation to the Air and Missile Defense (AMD) mission:</p> <ul style="list-style-type: none"> • Battlespace areas and sectors • Command and Control • Communications procedures and reporting • US Navy and Coast Guard surface ship systems <p>TO 1-3-2-1.2 EXPLAIN the appropriate Self Defense action(s) based on a provided scenario.</p> <p>TO 1-3-3-1.2 EXPLAIN the appropriate Point Defense action(s) based on a provided scenario.</p>

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1-3-5-8	AD MMTT Scenario Five	<p>TO 1-3-2.1 CONDUCT effective Self-Defense, including:</p> <ul style="list-style-type: none">• Maneuvering• Readiness Posture• Communications• Threat determination• Weapons employment <p>TO 1-3-3.1 CONDUCT effective Point-Defense including:</p> <ul style="list-style-type: none">• Maneuvering• Readiness Posture• Communications• Threat determination• Weapons employment• Ships' stationing• Mission Essential Unit (MEU) coordination <p>TO 1-3-4.1 CONDUCT effective Area-Defense including:</p> <ul style="list-style-type: none">• Maneuvering• Readiness Posture• Communications• Threat determination• Weapons employment• Ships' stationing• MEU coordination• Aircraft employment• Ballistic Missile Defense (BMD) <p>TO 1-3-3-1.2 EXPLAIN the appropriate Point Defense action(s) based on a provided scenario.</p> <p>TO 1-3-3-1.3 PERFORM the duties of a Task Force Air and Missile Defense Coordinator.</p>

//SIGNED//

SWO DH (A-4H-0107) CCMM

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