

**CURRICULUM OUTLINE OF INSTRUCTION  
SURFACE WARFARE OFFICER DEPARTMENT HEAD COURSE  
CIN: A-4H-0107 CDP: 9545**

<b>MODULE 1-4: SURFACE WARFARE</b>		
<b>Lesson #</b>	<b>Topic</b>	<b>Objectives</b>
1-4-0	Welcome to Surface Warfare	<p><b>EXPLAIN</b> the mission of SWOS' Surface Warfare training.</p> <p><b>EXPLAIN</b> the Surface Warfare Training Continuum.</p> <p><b>IDENTIFY</b> techniques for student success.</p>
1-4-1	Surface Warfare Overview	<p>TO 1-4-1.1 <b>EXPLAIN</b> the following in relation to the Surface Warfare (SUW) mission:</p> <ul style="list-style-type: none"> <li>• Battlespace areas and sectors</li> <li>• Command and Control</li> <li>• Communications procedures and reporting</li> <li>• US Navy surface ship systems</li> </ul> <p>TO 1-4-1.2 <b>COMMUNICATE</b> effectively on internal and external SUW circuits, including delivering all required reports.</p>
1-4-1-1	Surface Warfare Missions, Roles and Responsibilities	<p>EO 1-4-1-1.1 <b>LIST</b> and <b>DESCRIBE</b> the steps of the SUW Kill Chain.</p> <p>EO 1-4-1-1.2 <b>LIST</b> and <b>DESCRIBE</b> the three core SUW missions.</p> <p>EO 1-4-1-1.3 <b>LIST</b> and <b>DESCRIBE</b> the five enduring SUW capabilities.</p> <p>EO 1-4-1-1.4 <b>NAME</b> and <b>DESCRIBE</b> these governing documents and their roles in SUW:</p> <ul style="list-style-type: none"> <li>• OPGEN</li> <li>• OPTASK Surface Warfare</li> <li>• OPTASK SUW SUPP</li> <li>• Daily Intentions Message (DIM)</li> <li>• CVN Air Plan</li> <li>• Air Tasking Order</li> <li>• Rainform GREEN &amp; PURPLE</li> <li>• TURQUOISE</li> </ul> <p>EO 1-4-1-1.5 <b>DESCRIBE</b> the layout of your ship class' CIC and the watchstanders who support the Surface Warfare Mission.</p> <p>EO 1-4-1-1.6 <b>DESCRIBE</b> the roles and responsibilities of the following positions:</p> <ul style="list-style-type: none"> <li>• SUWC/SCC</li> <li>• MIOC</li> <li>• SC</li> <li>• CTPM,</li> <li>• HEC</li> <li>• SAG Commander</li> <li>• CFMCC/JFMCC</li> </ul>

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1-4-1-2	Capabilities and Limitations 101	<p>EO 1-4-1-2.1 <b>LIST</b> and <b>DESCRIBE</b> the Combat Systems and SUW weapons and sensors for the following ship classes:</p> <ul style="list-style-type: none"> <li>• CVN 68</li> <li>• LHD 1</li> <li>• LHA 1</li> <li>• CG 47</li> <li>• DDG 51</li> <li>• LSD 41</li> <li>• LPD 4, 17</li> <li>• FFG 7</li> <li>• LCS 1, 2</li> <li>• MCM 1</li> <li>• PC</li> </ul> <p>EO 1-4-1-2.2 <b>LIST</b> and <b>DRAW</b> the SUW weapons systems, sensors and illuminator cutouts for your ship class.</p> <p>EO 1-4-1-2.3 <b>LIST</b> and <b>DEFINE</b> the SUW weapons postures for your ship class.</p>

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1-4-1-3	SUW Battlespace	<p>EO 1-4-1-3.1 <b>LIST</b> and <b>DESCRIBE</b> the elements of the SUW Battlespace, including:</p> <ul style="list-style-type: none"> <li>• Territorial Waters</li> <li>• Relevant Geographic and Environmental Considerations</li> <li>• Weather</li> <li>• Threat CDCM sites</li> <li>• Threat Air and Naval Bases</li> <li>• Threat Axis</li> <li>• Threat Sector</li> <li>• Vital Area (VA)</li> <li>• Classification, Identification, and Engagement Area (CIEA)</li> <li>• Surveillance Area (SA)</li> <li>• Weapon Employment Zones (SEZ/DEZ/AEZ)</li> <li>• 4W Grid</li> </ul> <p>EO 1-4-1-3.2 <b>DRAW</b> the following components of the SUW Battlespace:</p> <ul style="list-style-type: none"> <li>• Territorial Waters</li> <li>• Relevant Geographic and Environmental Considerations</li> <li>• Threat CDCM sites</li> <li>• Threat Air and Naval Bases</li> <li>• Threat Axis</li> <li>• Threat Sector</li> <li>• Vital Area (VA)</li> <li>• Classification, Identification, and Engagement Area (CIEA)</li> <li>• Surveillance Area (SA)</li> <li>• Weapon Employment Zones (SEZ/DEZ/AEZ)</li> <li>• 4W Grid</li> </ul>
1-4-1-4	Communications	<p>EO 1-4-1-4.1 <b>LIST</b> and <b>DESCRIBE</b> Internal Communications circuits and procedures for Surface Warfare.</p> <p>EO 1-4-1-4.2 <b>LIST</b> and <b>DESCRIBE</b> External Communications circuits and procedures for Surface Warfare.</p> <p>EO 1-4-1-4.3 <b>LIST</b> and <b>DEFINE</b> standard SUW Brevity Words.</p> <p>EO 1-4-1-4.4 <b>DESCRIBE</b> the purpose of and <b>EXECUTE/TRANSMIT</b> the following reports:</p> <ul style="list-style-type: none"> <li>• SUW SITREP</li> <li>• SUW Contact Report</li> <li>• SUW Engagement Report</li> <li>• SAG Commander's After Action Report</li> </ul> <p>EO 1-4-1-4.5 <b>LIST</b> and <b>DESCRIBE</b> SUW Required Reports.</p>

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<b>Lesson #</b>	<b>Topic</b>	<b>Objectives</b>
1-4-2	Surface Warfare Weapons Fundamentals	<p>TO 1-4-2.1 Given an SUW scenario, <b>DEVELOP</b> a plan and <b>EMPLOY</b> the following in relation to the assigned Surface Warfare (SUW) mission:</p> <ul style="list-style-type: none"> <li>• Large and Small Caliber Guns</li> <li>• Harpoon Weapon System and SUW Missiles</li> <li>• Organic Helicopters</li> <li>• P-3s</li> <li>• TACAIR</li> </ul> <p>TO 1-4-2.2 <b>DESCRIBE</b> integration of organic helicopters, P-3s, and TACAIR with surface forces in an SUW environment.</p>
1-4-2-1	Large and Small Caliber Gun Employment	<p>EO 1-4-2-1.1 <b>LIST</b> and <b>DESCRIBE</b> SUW layered defense zones.</p> <p>EO 1-4-2-1.2 <b>LIST</b> and <b>DESCRIBE</b> the various types of ammunition used for SUW.</p> <p>EO 1-4-2-1.3 <b>LIST</b> and <b>DESCRIBE</b> the sensors, submodes, and ammunition associated with the following gun systems:</p> <ul style="list-style-type: none"> <li>• 5"/54/62 caliber gun</li> <li>• 76mm gun</li> <li>• 57mm gun</li> <li>• 30mm gun</li> </ul> <p>EO 1-4-2-1.4 <b>LIST</b> and <b>DESCRIBE</b> the operating modes and capabilities and limitations of the Close-In Weapon System (CIWS) 1B.</p> <p>EO 1-4-2-1.5 <b>LIST</b> and <b>DESCRIBE</b> the types of crew served weapons onboard surface combatants.</p> <p>EO 1-4-2-1.6 <b>LIST</b> and <b>DESCRIBE</b> the advantages and disadvantages of the three types of coordinated machine gun tactics.</p>
1-4-2-2	Surface Missiles	<p>EO 1-4-2-2.1 <b>LIST</b> and <b>DESCRIBE</b> Harpoon Weapon System (HWS) Capabilities and Limitations.</p> <p>EO 1-4-2-2.2 <b>LIST</b> and <b>DESCRIBE</b> HWS Casualty Modes.</p> <p>EO 1-4-2-2.3 <b>LIST</b> and <b>DESCRIBE</b> HWS tactical (Engagement Planning) considerations including:</p> <ul style="list-style-type: none"> <li>• Types of Search Patterns</li> <li>• Flight Path</li> <li>• Mitigation of Clobber (BGS/Land/Obstacles)</li> <li>• Targeting Concepts (Formation/Direct/Selective)</li> </ul> <p>EO 1-4-2-2.4 <b>DESCRIBE</b> the capabilities and limitations of Air Defense Missiles (SM2, NSSM, RAM) in surface mode.</p>

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1-4-2-3	Organic Helicopter Procedures	<p>EO 1-4-2-3.1 <b>LIST</b> and <b>DESCRIBE</b> the sensor capabilities and limitations of the MH-60R.</p> <p>EO 1-4-2-3.2 <b>LIST</b> and <b>DESCRIBE</b> the missions of the MH-60R in support of SUW operations.</p> <p>EO 1-4-2-3.3 <b>LIST</b> and <b>DESCRIBE</b> weapons and employment of MH-60R in support of SUW operations.</p> <p>EO 1-4-2-3.4 <b>LIST</b> and <b>DESCRIBE</b> how the MH-60R coordinates with surface forces to include the following:</p> <ul style="list-style-type: none"> <li>• EMCON Launch Procedures</li> <li>• Search Tactics</li> <li>• Classification/ID Tactics</li> <li>• Over The Horizon – Targeting (OTH-T) Tactics</li> </ul>
1-4-2-4	MPRA Employment	<p>EO 1-4-2-4.1 <b>LIST</b> and <b>DESCRIBE</b> the sensor capabilities and limitations of MPRA variants.</p> <p>EO 1-4-2-4.2 <b>LIST</b> and <b>DESCRIBE</b> the missions of a MPRA in support of SUW operations.</p> <p>EO 1-4-2-4.3 <b>LIST</b> and <b>DESCRIBE</b> weapons and employment of MPRA variants in support of SUW operations.</p> <p>EO 1-4-2-4.4 <b>DESCRIBE</b> how a MPRA coordinates with surface forces to include the following:</p> <ul style="list-style-type: none"> <li>• Command and Control</li> <li>• Joining Procedures</li> <li>• Aircraft Control Procedures</li> <li>• Search, ID, and Attack Procedures</li> </ul>
1-4-2-5	TACAIR Employment	<p>EO 1-4-2-5.1 <b>LIST</b> and <b>DESCRIBE</b> the sensor capabilities and limitations of TACAIR.</p> <p>EO 1-4-2-5.2 <b>DESCRIBE</b> the missions of TACAIR in support of SUW operations to include:</p> <ul style="list-style-type: none"> <li>• Surface Surveillance &amp; Coordination (SSC)</li> <li>• Armed Reconnaissance (AR)/Air Interdiction (AI)/Strike Coordination and Reconnaissance (SCAR)</li> <li>• War-At-Sea (WAS) Strike</li> <li>• Counter-Fast Attack Craft (FAC)/Fast Inshore Attack Craft (FIAC)</li> <li>• Surface Combat Air Patrol (SUCAP)</li> <li>• Airborne Maritime Mining (AMM)</li> </ul> <p>EO 1-4-2-5.3 <b>LIST</b> and <b>DESCRIBE</b> weapons and employment of TACAIR in support of SUW operations.</p>

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Lesson #	Topic	Objectives
1-4-3	Employment of Surface Warfare Weapons Systems	<p>TO 1-4-3.1 <b>DESCRIBE</b> the process for developing an effective Recognized Maritime Picture (RMP).</p> <p>TO 1-4-3.2 <b>APPLY</b> SAG tactical considerations to a particular scenario, with emphasis on TACSIT assessment, OPDEC and EMCON.</p> <p>TO 1-4-3.3 <b>EXPLAIN</b> how to conduct OTH-T using all available SUW assets and sensors.</p> <p>TO 1-4-3.4 <b>DESCRIBE</b> how to configure SUW Battlespace using multiple SUW assets and sensors.</p> <p>TO 1-4-3.5 <b>EMPLOY</b> FADES criteria in the development of RMP.</p>
1-4-3-1	Recognized Maritime Picture Development	<p>EO 1-4-3-1.1 <b>LIST</b> and <b>DESCRIBE</b> the data sources used to develop RMP.</p> <p>EO 1-4-3-1.2 <b>LIST</b> and <b>DESCRIBE</b> the assets used to develop RMP.</p> <p>EO 1-4-3-1.3 <b>LIST</b> and <b>DESCRIBE</b> the search planning variables used to develop RMP.</p> <p>EO 1-4-3-1.4 <b>LIST</b> and <b>DESCRIBE</b> the various search plans used to develop RMP.</p> <p>EO 1-4-3-1.5 <b>LIST</b> and <b>DESCRIBE</b> the confidence levels used during Classification/ID of SUW contacts.</p>
1-4-3-2	Surface Action Group (SAG) Procedures	<p>EO 1-4-3-2.1 <b>STATE</b> the definition and purpose of a SAG.</p> <p>EO 1-4-3-2.2 <b>LIST</b> and <b>DESCRIBE</b> the four phases of SAG operations.</p> <p>EO 1-4-3-2.3 <b>DESCRIBE</b> desired SAG composition and methodologies for selection of assets.</p>

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1-4-3-3	Principles of Single Ship Over the Horizon Targeting (OTH-T)	<p>EO 1-4-3-3.1 <b>LIST</b> and <b>DESCRIBE</b> basic OTH-T concepts:</p> <ul style="list-style-type: none"> <li>• TACSIT/EMCON</li> <li>• RMP Development</li> <li>• Targeting</li> </ul> <p>EO 1-4-3-3.2 <b>LIST</b> and <b>DESCRIBE</b> the following methods of targeting:</p> <ul style="list-style-type: none"> <li>• Active</li> <li>• Data Links</li> <li>• Third Party</li> </ul> <p>EO 1-4-3-3.3 Given a scenario and mission objectives, <b>DESCRIBE</b> the employment of offensive SUW systems.</p>
1-4-3-4	Coordinated Multi-Ship Battlespace Management	<p>EO 1-4-3-4.1 <b>DESCRIBE</b> SUW Battlespace Command and Control relationships between:</p> <ul style="list-style-type: none"> <li>• SCC</li> <li>• SAGC</li> <li>• P-3</li> <li>• TACAIR</li> <li>• E-2C</li> <li>• Surface Units</li> <li>• Organic Helicopters</li> <li>• SSN</li> </ul> <p>EO 1-4-3-4.2 <b>EXPLAIN</b> SA/CIEA/VA from a multi-ship perspective.</p> <p>EO 1-4-3-4.3 <b>LIST</b> and <b>DESCRIBE</b> SUW Force Disposition for the following:</p> <ul style="list-style-type: none"> <li>• Chokepoint Transits</li> <li>• Open Ocean Steaming</li> <li>• MODLOC</li> <li>• Littoral Operations</li> </ul>
1-4-5	Fast Attack Craft/Fast	<p>TO 1-4-5.1 <b>DEVELOP</b> and <b>DRAW</b> FAC/FIAC defense for a single ship or group of ships.</p>

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		EO 1-4-6-1.3 <b>LIST</b> and <b>DESCRIBE</b> the five phases of MIO.  EO 1-4-6-1.4 <b>LIST</b> the Go/No-Go Criteria for MIO.  EO 1-4-6-1.5 <b>LIST</b> and <b>DESCRIBE</b> the four types of boardings associated with MIO.
1-4-7	Counter-Piracy	TO 1-4-7.1 <b>DISCUSS</b> U.S. counter-piracy initiatives.
1-4-7-1	Counter-Piracy	EO 1-4-7-1.1 <b>LIST</b> the UNCLOS and U.S. piracy definitions.  EO 1-4-7-1.2 <b>DESCRIBE</b> the Command and Control structure for Counter-Piracy operations in Fifth Fleet.  EO 1-4-7-1.3 <b>DESCRIBE</b> ROE considerations for Counter-Piracy operations in Fifth Fleet.  EO 1-4-7-1.4 <b>LIST</b> and <b>DESCRIBE</b> the Phases of Maritime Counter-Piracy operations.  EO 1-4-7-1.5 <b>DESCRIBE</b> pirate tactics for vessel takedown.  EO 1-4-7-1.6 <b>DESCRIBE</b> U.S. Anti Piracy and Counter-Piracy measures.
1-4-8	Guest Lecturers	<b>FAMILIARIZE</b> students with current SUW operations.
1-4-8-1	Counter-Transnational Organized Crime (CTOC)	<b>INTRODUCE</b> students to current CTOC threats and operations.
1-4-9	Surface Warfare MMTT Scenarios	<b>REINFORCE</b> student learning, through practical application in the Multi Mission Team Trainer (MMTT).
1-4-9-1	SUW TAO ITS	<b>FAMILIARIZE</b> students with Command and Control communications during simulated SUW Detect To Engage (DTE) scenarios.
1-4-9-2	SUW MMTT Communications	<b>REINFORCE</b> TO 1-4-1.2, <b>COMMUNICATE</b> effectively on internal and external SUW circuits, including delivering all required reports.

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1-4-9-3	SUW MMTT In-Brief	<b>IDENTIFY</b> the friendly order of battle for SUW scenarios 1-3.  <b>IDENTIFY</b> the threat order of battle for SUW scenarios 1-3.  <b>IDENTIFY</b> the Surface Warfare Procedures and preplanned responses for SUW scenarios 1-3.
1-4-9-4	SUW MMTT Student Brief	<b>CONDUCT</b> an effective tactical brief.
1-4-9-5	SUW MMTT Scenario 1	<b>REINFORCE TO 1-4-3.2, CONDUCT</b> OTH-T using all available SUW assets and sensors.
1-4-9-6	SUW MMTT Student Brief	<b>CONDUCT</b> an effective tactical brief.
1-4-9-7	SUW MMTT 2	<b>REINFORCE TO 1-4-3.1, 1-4-3.2, and 1-4-3.3, DEVELOP</b> an effective RMP, <b>CONDUCT</b> OTH-T using all available SUW assets and sensors, and <b>APPLY</b> SAG tactical considerations (TACSIT assessment, OPDEC and EMCON).
1-4-9-8	SUW MMTT Student Brief	<b>CONDUCT</b> an effective tactical brief.
1-4-9-9	SUW MMTT 3	<b>REINFORCE TO 1-4-3.1, 1-4-3.2, and 1-4-5.1, DEVELOP</b> an effective RMP, <b>CONDUCT</b> OTH-T using all available SUW assets and sensors, and <b>DEVELOP</b> FAC/FIAC defense for a single ship or group of ships.
1-4-9-10	SUW MMTT B	<b>VALIDATE</b> student learning in tactical application of Tactics, Techniques, and procedures.
1-4-10	Assessments	<b>VALIDATE</b> student learning.
1-4-10-1	Quiz 1	<b>VALIDATE</b> student learning.
1-4-10-2	Quiz 2	<b>VALIDATE</b> student learning.
1-4-10-3	Quiz 3	<b>VALIDATE</b> student learning.
1-4-10-4	Quiz 4	<b>VALIDATE</b> student learning.
1-4-10-5	SUW Practicals	<b>VALIDATE</b> student learning.
1-4-10-6	SUW Exam Review	<b>PROVIDE</b> an overview of the Surface Warfare test and tips for success.
1-4-10-7	SUW Exam	<b>VALIDATE</b> student learning, to include IO/AD reach back.
1-4-10-8	SUW Exam Debrief	<b>PROVIDE</b> feedback on the Surface Warfare Test.

## Additional Notes:

A one-hour AD exam review will be scheduled during the Surface Warfare Module (reflected in Course Master Schedule).

An AD ARB will be scheduled during the Surface Warfare Week.

An AD re-take exam (3 hours) may be scheduled if required.

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Cell / Course Lead



Curriculum Manager



Director

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