Ministry of Defence

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Allied Joint Publication-3.1

Allied Joint Doctrine for Maritime Operations

Edition B Version 1

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AJP-3.1

ALLIED JOINT DOCTRINE FOR MARITIME OPERATIONS

Edition B, Version 1

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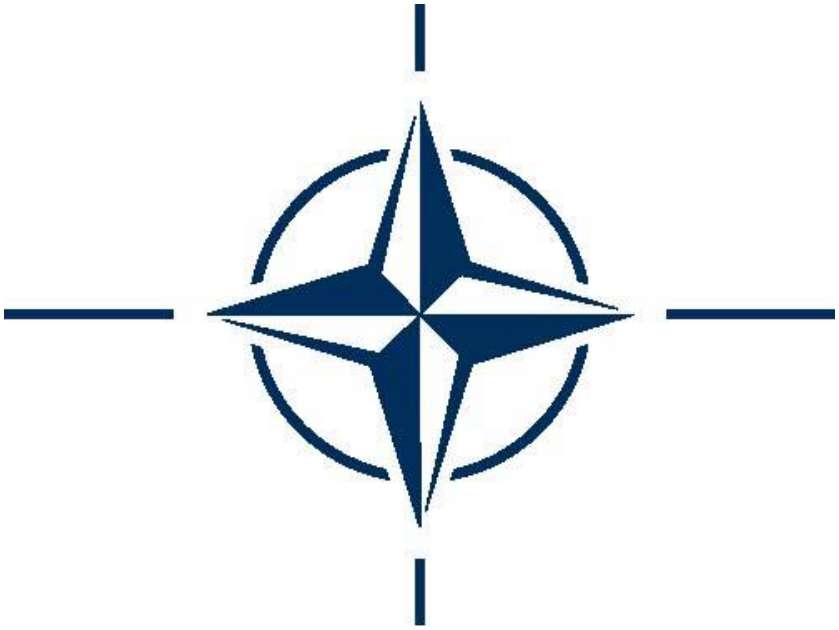

NORTH ATLANTIC TREATY ORGANIZATION

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3 April 2025

1. The enclosed Allied Joint Publication AJP-3.1, Edition B, Version 1, ALLIED JOINT DOCTRINE FOR MARITIME OPERATIONS, which has been approved by the nations in the in the MILITARY COMMITTEE JOINT STANDARDIZATION BOARD, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 1459.

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Allied Joint Publication-3.1

Allied Joint Doctrine for Maritime Operations

Allied Joint Publication-3.1 (AJP-3.1), Edition B, Version 1,

dated April 2025,

is promulgated as directed by the Chiefs of Staff

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RECORD OF NATIONAL RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
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RECORD OF SPECIFIC RESERVATIONS

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Summary of changes

Revision of Allied Joint Publication-3.1
Allied Joint Doctrine for Maritime Operations
Edition B, Version 1

- Harmonized with AJP-01, *Allied Joint Doctrine*, and AJP-3, *Allied Joint Doctrine for the Conduct of Operations*.
- Added a discussion of maritime contribution to operations across the continuum of competition.
- Separated the characteristics of the maritime operating environment into enduring and evolving characteristics.
- Expanded the discussion on the role of the maritime force.
- Expanded the discussion on maritime superiority.
- Expanded the discussion on the maritime contribution to joint operations.
- Expanded the discussion on naval warfare areas.
- Minimized the discussion on tactical situations.
- Added discussion of maritime support from and to space operations.
- Added a discussion on multi-domain operations.
- Added a discussion on maritime targeting.
- Added a discussion on gender perspective.
- Added a discussion on human security.
- Added a discussion on detention of personnel.
- Added a discussion on wounded, sick, shipwrecked, and dead.
- Added a discussion on protection of civilians.
- Aligned with the joint functional framework as discussed in AJP-3, *Allied Joint Doctrine for the Conduct of Operations*.

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Related Documents

AJP-01, *Allied Joint Doctrine*

AJP-2*, Allied Joint Doctrine for Intelligence, Counter-intelligence and Security*

AJP-3, *Allied Joint Doctrine for the Conduct of Operations*

AJP-3.3, *Allied Joint Doctrine for Air and Space Operations*

AJP-3.3.1, *Allied Joint Doctrine for Counter-Air*

AJP-3.3.3, *Allied Joint Doctrine for Air-Maritime Coordination*

AJP-3.5, *Allied Joint Doctrine for Special Operations*

AJP-3.6, *Allied Joint Doctrine for Electronic Warfare*

AJP-3.7, *Allied Joint Doctrine for Recovery of Personnel in a Hostile Environment*

AJP-3.8, *Allied Joint Doctrine for Comprehensive Chemical, Biological, Radiological, and Nuclear Defence*

AJP-3.9, *Allied Joint Doctrine for Targeting*

AJP-3.11, *Allied Joint Doctrine for Meteorological and Oceanographic Support*

AJP-3.12, *Allied Joint Doctrine for Military Engineering*

AJP-3.13, *Allied Joint Doctrine for Deployment and Redeployment of Forces*

AJP-3.16, *Allied Joint Doctrine for Security Force Assistance (SFA)*

AJP-3.17, *Allied Joint Doctrine for Geospatial Support*

AJP-3.19, *Allied Joint Doctrine for Civil-Military Cooperation*

AJP-3.20, *Allied Joint Doctrine for Cyberspace Operations*

AJP-3.22, *Allied Joint Doctrine for Stability Policing*

AJP-3.23, *Allied Joint Doctrine for Countering Weapons of Mass Destruction in Military Operations*

AJP-3.26, *Allied Joint Doctrine for the Military Contribution to Humanitarian Assistance*

AJP-4.10, *Allied Joint Doctrine for Medical Support*

AJP-10, *Allied Joint Doctrine for Strategic Communications*

AJP-4, *Allied Joint Doctrine for Logistics*

ALP-4.1, *Multinational Maritime Force Logistics*

AJP-4.3, *Allied Joint Doctrine for Host-Nation Support*

AJP-4.6, *Allied Joint Doctrine for Joint Logistic Support Group*

AJP-5, *Allied Joint Doctrine for the Planning of Operations*

ATP-01, Volume I, *Allied Maritime Tactical Instructions and Procedures*

ATP-06, Volume I, *Naval Mine Warfare Principles*

ATP-06, Volume II, Naval Mine Countermeasures Operations, Planning and Evaluation

ATP-08, Volume I, *Doctrine for Amphibious Operations*

ATP-08, Volume II, *Tactics, Techniques and Procedures for Amphibious Operations*

ATP-08, Volume III, *Riverine Operations*

ATP-3.2.1.2, *Conduct of Land Tactical Operations in Urban Environments*

ATP-3.3.3.1, *Air-Maritime Coordination Procedures (AMCP)*

ATP-3.8.1, Volume I, *CBRN Defence on Operations*

ATP-18, *Allied Manual of Submarine Operations*

ATP-24, Volume I, *Naval Mine Countermeasures Tactics and Execution*

ATP-24, Volume II, *Naval Mining: Planning, Evaluation, Tactics and Execution*

ATP-28, Volume I, *Allied Antisubmarine Warfare Manual – Tactics and Procedures*

ATP-31, *NATO Above Water Warfare Manual*

ATP-71, *Allied Maritime Interdiction Operations*

ATP-94, *Harbour Protection*

ATP-101, *NATO Procedures for Maritime Situational Awareness and Responding to Incidents of Intrusion and Harassment*

ATP-102, *NATO Procedures for Maritime Intelligence, Surveillance, and Reconnaissance*

ATP-113, *Maritime Information Warfare (MIW)*

BI-SC Directive 086-006, *Protection of Civilians*

Comprehensive Operations Planning Directive

MC 0668, April 2018, *Concept for the Protection of Civilians*

NATO Operations Assessment Handbook

Second Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea

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Preface

Scope

1. AJP-3.1, *Allied Joint Doctrine for Maritime Operations*, describes the fundamentals, command and control (C2), and planning considerations of maritime operations throughout the continuum of competition. It also provides an overview of the contribution of maritime forces in joint operations.

2. This publication does not cover tactical considerations. Subordinate Allied tactical publications expand on the planning and execution of maritime tactical operations by maritime forces and the tactical activities that constitute such operations.

Purpose

3. The purpose of this document is to provide direction and guidance on the conduct of maritime operations, the attributes of maritime forces, and the key aspects of C2 in a joint and multinational operation. It will help the reader to understand how maritime forces are employed. It focuses on the operational level but has utility at the strategic and tactical levels.

Application

4. AJP-3.1 is written for the joint force commander, the maritime component commander, subordinate commanders, adjacent component commanders, and their staffs when conducting maritime operations. The doctrine also provides a useful framework for operations conducted by a coalition of partners and non-North Atlantic Treaty Organization (NATO) nations. AJP-3.1 also provides a reference for civilians operating with the maritime component.

Structure

5. This publication consists of seven chapters. Chapter 1 describes the fundamentals of maritime operations. Chapter 2 details the maritime operating environment. Chapter 3 describes the maritime forces and activities. Chapter 4 describes the maritime command and the maritime component commander. Chapter 5 details the naval warfare areas. Chapter 6 details the specificities of planning for maritime operations. Chapter 7 discusses the joint functions in maritime operations.

Linkages

6. AJP-3.1 derives its authority from and complements AJP-3, *Allied Joint Doctrine for the Conduct of Operations*, which presents NATO doctrine to plan, conduct, and assess joint operations. AJP-3 provides overarching doctrine on Allied joint operations, while AJP-3.1 focuses on the unique characteristics for maritime forces in joint operations.

AJP-3.1 provides overarching guidance for the following publications:

ALP-4.1, *Multinational Maritime Force Logistics*

ATP-01, *Volume I, Allied Maritime Tactical Instructions and Procedures*

ATP-06, *Volume I, Naval Mine Warfare Principles*

ATP-08, Volume I, *Doctrine for Amphibious Operations*

ATP-08, Volume II, *Tactics, Techniques and Procedures for Amphibious Operations*

ATP-08, Volume III, *Riverine Operations*

ATP-4, *Allied Naval Fire Support*

ATP-18, *Allied Manual of Submarine Operations*

ATP-24, Volume I, *Naval Mine Countermeasures Tactics and Execution*

ATP-28, Volume I, *Allied Antisubmarine Warfare Manual*

ATP-31, *NATO Above Water Warfare Manual*

ATP-71, *Allied Maritime Interdiction Operations*

ATP-74, *Allied Maritime Force Protection*

ATP-94, *Harbour Protection*

ATP-101, *NATO Procedures for Maritime Situational Awareness and Responding to Incidents of Intrusion and Harassment*

ATP-102, *NATO Procedures for Maritime Intelligence, Surveillance, and Reconnaissance*

ATP-113, *Maritime Information Warfare (MIW).*

Chapter 1 – Fundamentals of maritime operations

Section 1 – Alliance maritime strategy

Maritime context

1.1 Nations depend on freedom of navigation, sea-based trade routes, critical infrastructure, energy flow, data transfer, protection of marine resources, and environmental safety for their national economic and security interests. Global trade relies upon secure international maritime transportation and distribution networks. These networks are vulnerable to disorder and disruption, to the extent that even short interruptions have seriously impacted international trade and national economies. Additionally, there are fisheries, minerals and other highly valuable resources that lie in, on, and beneath the ocean floor. Climatic change may allow new and economically attractive sea routes, as well as improved access to resources.

Section 2 – Maritime contribution to Alliance strategy

Deterrence and defence

1.2 Deterrence and defence remain the Alliance's primary responsibilities. The Alliance's maritime forces help maintain or restore the territorial integrity of member states. Deterrence relies upon proven capability, demonstrations of readiness, and clear communication of intent to use military force. It refers to the demonstrated ability and willingness to inflict unacceptable damage on an enemy and making sure the adversary is aware of the risk so that the adversary refrains from aggression or action. Maritime forces are persistently forward postured in key regions to deter conventional aggression as well as compete across the continuum of competition. When necessary, the inherent mobility of maritime forces enables joint force commanders to move forces rapidly to crisis areas and conduct tactical actions that signal North Atlantic Treaty Organization (NATO) intentions and demonstrate the ability to respond to acts of aggression. Alliance maritime forces achieve deterrence and defence objectives (ends) through multiple activities (ways) that include forward presence, freedom of manoeuvre, freedom of navigation, and power projection. These activities involve operations conducted with the following capabilities (means):

- versatile military means of increasing diplomatic pressure as a crisis develops;
- unimpeded access to the high seas enabling a maritime force to either support Allies and partners or provide military deterrence, coercion, and containment;
- wide range of response options, including intermediate force capabilities, rapid response, and the ability to deploy, sustain, and support expeditionary forces;
- to establish and maintain maritime situational awareness and understanding for the joint force;

- precision strikes that may be integrated with other components of the joint force;
- sea-based air and missile defence capabilities as part of the Alliance defence arrangements and to protect deployed forces and high-value areas and assets within a theatre of operations from air and missile threats; and
- contributions to NATO's chemical, biological, radiological and nuclear (CBRN) defence.

Introduction to North Atlantic Treaty Organization core tasks and maritime operational roles

1.3 Allied maritime operations and activities are vital to Alliance security. Maritime forces support the NATO core tasks of:

- deterrence and defence;
- crisis prevention and management; and
- cooperative security.

The three core tasks are addressed by three main policies: deterrence and defence, projecting stability, and the fight against terrorism. The amount of support provided by maritime forces in each of these tasks depends on the forces available.

Crisis prevention and management

1.4 Crisis management includes, but is not limited to, conflict prevention, demonstrations of resolve, crisis response operations, peace enforcement, embargo operations, counterterrorism, mine countermeasures, humanitarian assistance, and consequence management, often in degraded or denied operating environments. Maritime forces can play a critical enabling role in arms embargo and interdiction operations, flexible deployment of amphibious forces for ground operations, logistic and relief support, and surveillance and reconnaissance, as well as offer opportunities to minimize footprints ashore by exploiting possibilities to base operations and logistic support at sea. The maritime contribution to Alliance crisis management includes:

- rapid response joint forces prepared to operate in environments with limited freedom of action;
- sea control and/or sea denial to employ maritime and amphibious forces, providing a base of operations at sea and exercising coherent Alliance command and control (C2) while operating with non-NATO navies and organizations to employ decisive action on, under, above, and from the sea;

- inherent agility of its maritime forces to provide a flexible and graduated response in crisis situations, ranging from presence operations to specific tasks, including peace enforcement, embargo, no-fly zone enforcement, counterterrorism, non-combatant evacuation operations, and forcible entry operations;

- essential logistic support for joint forces and the deployment of joint command and logistics bases afloat (sea basing); and

- CBRN consequence management.

Cooperative security

1.5 Cooperative security integrates Alliance maritime activities to NATO's policy of outreach through partnerships, dialogue, and cooperation. These offer valuable opportunities to prevent conflicts by developing regional security and stability through dialogue, confidence-building, and increased visibility of issues affecting the Alliance. They contribute to building partner capacity, exchanging information, and interoperability, including where activities involving a significant or enduring footprint ashore might be unacceptable. These activities complement what states conduct on a national level and have the added value of demonstrating the Alliance's intention to support partners and drawing on a wider set of capabilities. The Alliance's maritime component contribution includes:

- diplomatic activities, such as port visits as part of the routine activities of standing naval forces;

- improving the capabilities of partners to address security threats in the maritime environment and to operate there effectively; and

- combined training, seminars, and exercises with partners.

For additional information on building partner capacity and interoperability, see AJP-3.16, *Allied Joint Doctrine for Security Force Assistance (SFA).*

Section 3 – Maritime security

1.6 Military strategy sets the manner in which combat power should be developed and applied to meet the Alliance's objectives. Joint planning translates strategic objectives into tactical activities and means-to-ends. Maritime forces offer unique capabilities that should be integrated into the joint force command's operations plan. This requires robust and informed representation within the joint operations planning group, who, through experience and training, understand the capabilities and limitations of maritime forces and how they can best contribute to the joint operation. The maritime staffs should understand how planned maritime activities integrate with and contribute to the overall campaign. As most operations are joint, consideration should be made by maritime staffs of other component objectives, plans, and activities.

1.7 The safety and economic security of the Alliance and its partners depend upon the secure use of the maritime operating environment. NATO maritime forces can contribute to the maintenance of a secure and safe maritime operating environment. Maritime security operations are conducted in cooperation with national authorities, the private sector, international organizations, and non-governmental organizations. They counter the threats and mitigate the risks of illegal or threatening activities to help safeguard Allies' strategic interests, security, and stability by contributing to mitigating gaps in current national civilian and/or military law enforcement capacity. The maritime force assists mariners in distress, participates in security cooperation operations with Allies and partners, shares situational awareness, and conducts maritime interdiction and law enforcement operations.

1.8 Maritime security includes:

a. **Upholding freedom of navigation.** The exercise of freedom of navigation and overflight and other internationally lawful uses of the sea associated with the operation of ships and aircraft that may include military operations in support of law enforcement efforts. Actions to contribute to freedom of navigation include: surveillance, patrol, special operations, deployment of law enforcement detachments, and, when authorised, the use of force.

b. **Maritime interdiction.** The enforcement of sanctions and embargos that is designed to force a nation or party to conform to a resolution or mandate. Sanctions generally concern the denial of supplies; curtailing diplomatic, economic, and other trading privileges; and restricting the freedom of movement of those living in the area of sanctions. Sanctions may be conducted partially against a particular party, or impartially in the context of a peace support operation, over a wide area embracing all parties. The objective is to establish a barrier that is selective, allowing only those persons, goods, or services that are authorised to enter or exit. Depending on geography, sanction enforcement normally involves some combination of air, land, and maritime forces and the enforcement of no-fly zones.

For additional information on maritime interdiction operations, see ATP-71, *Allied Maritime Interdiction Operations.*

c. **Countering the proliferation of weapons of mass destruction.** An activity undertaken against weapons of mass destruction programmes, networks, and pathways. Maritime activities include targeting enemy CBRN research facilities production sites, transportation capabilities, storage, and launch locations. Additionally, options for interdicting illicit CBRN substances, precursor materials, and equipment should be considered. These maritime activities prevent the transport and deployment of weapons of mass destruction and related materials, including the ability to locate, identify and secure illicit CBRN material transiting at sea. This task requires an on board basic detection and identification capability. However, an extended capability to immediately support identification and secure such potential deadly material should be within reach of the operational command, including available national assets.

More detailed information regarding CBRN defence in the maritime environment is provided in AJP-3.8, *Allied Joint Doctrine for Comprehensive Chemical, Biological, Radiological, and Nuclear Defence*; ATP-3.8.1, Volume I, *CBRN Defence on Operations;* and AJP-3.23, *Allied Joint Doctrine for Countering Weapons of Mass Destruction in Military Operations.*

d. **Protection of critical infrastructure** (including energy security)**.** The protective measures that are conducted at a NATO or non-NATO nation's request, in accordance with the directions from the North Atlantic Council, and may encompass information operations, surveillance, and deterrence, including area defence of specific assets and nodes and control of maritime checkpoints.

e. **Counterterrorism actions.** Actions conducted across a range of operations to deter, defend, disrupt, and protect against terrorist activities in the maritime environment to deny access to designated areas and apply forceful containment of maritime-based threats. Maritime counterterrorism may require the deployment of special operations forces' commitment to develop and improve the host nation's capacity and capabilities. It should include the international community, involving both military and non-military organizations.

f. **Support to maritime situational awareness.** Alliance assets should share data and/or information to enhance the recognised maritime picture, with Allies, partners and civilian agencies as appropriate in accordance with NATO information sharing procedures in force.

g. **Other actions.** Actions against transnational crime, piracy, environmental destruction, illegal fishing, and illegal seaborne trafficking and irregular migration.

Section 4 – Continuum of competition

Continuum of competition

1.9 The continuum of competition is a model depicting how attitudes and behaviours shape international relations. The continuum depicts four types of relationships between states/groups of people: cooperation, rivalry, confrontation, and armed conflict. The boundaries between cooperation, rivalry, and confrontation, and the threshold between confrontation and armed conflict, are complex and dynamic; the progression between each is neither linear nor easily defined. Interstate relations are typically sectoral: two or more states may be in cooperation in one sector and in confrontation in another. Figure 1.1 depicts the continuum of competition.

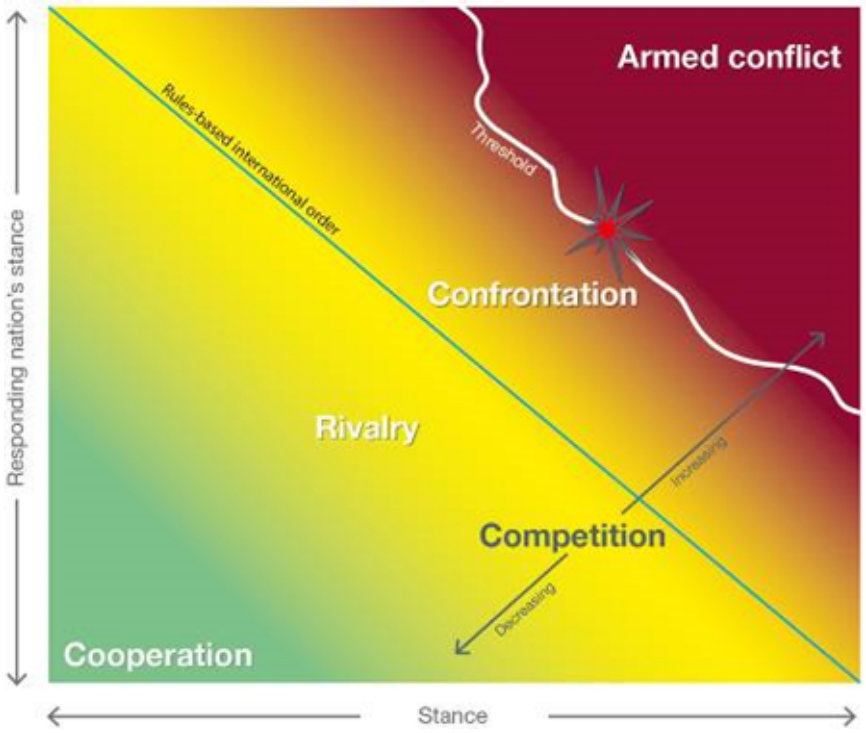

Figure 1.1 – The continuum of competition

Figure 1.2 depicts how some maritime activities support the Alliance campaign themes (peacetime military engagement, peace support, security and warfighting) across the continuum of competition. The types of operations shown are not fixed to a particular campaign theme and the composition of operations within each theme is fluid and depends on the operating environment and political appetite. Campaign themes are interdependent and they should not be thought of as a linear or sequential progression.

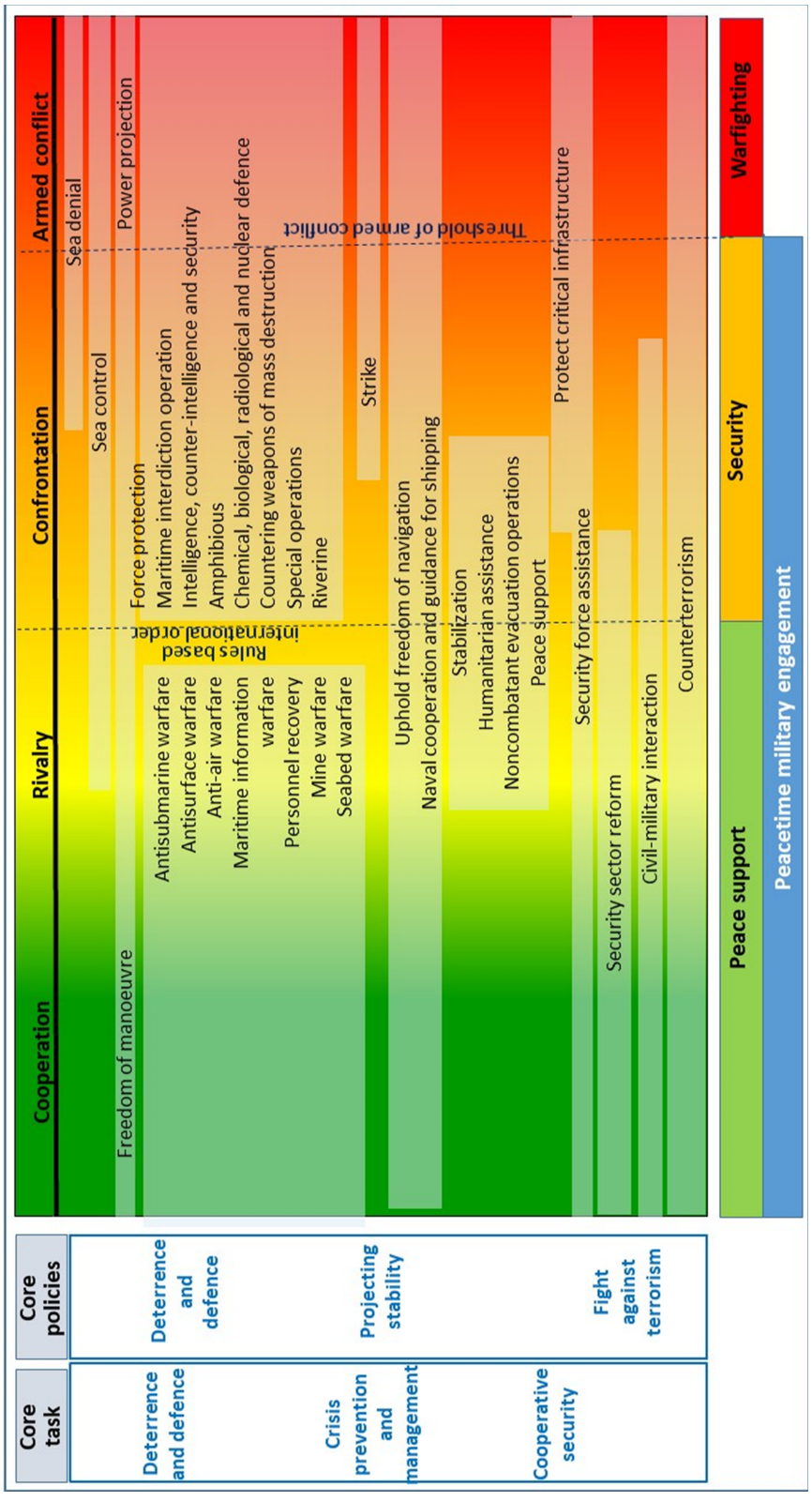

Figure 1.2 – Notional representation of maritime activities in support of the Alliance

For additional information on campaign themes and the continuum of competition, see AJP-01, *Allied Joint Doctrine.*

Cooperation activities

1.10 Cooperation occurs when states or non-state actors work together to achieve the same objectives. Often this occurs when actors' attitudes align. NATO is an example of cooperation to protect and defend member states' security. Cooperation provides the ideal basis for enduring stability. Cooperation can be an enduring activity where the relationship with the ally or partner is in place and will continue for the foreseeable future. Cooperation supports joint force military campaign and contingency plans with necessary access, critical infrastructure, and partner nation support; builds relationships that help promote Alliance interests; and builds and applies partner capacity and capabilities consistent with the achievement of strategic objectives (e.g., deterring adversaries, preventing conflict, and enhancing the stability and security of partner nations).

Examples of maritime cooperation activities include:

a. Training, military engagement, education, personnel exchanges, and port visits that strengthen partnerships assure Allies and partners of common interests and mutual commitments and demonstrate Alliance resolve to adversaries.

b. Naval, joint, and combined exercises that signal commitment to Allies and partners, demonstrate capability to adversaries, and enhance collaboration and interoperability among participants. Additionally, naval exercises can include large numbers of partner nations, enhancing joint maritime force influence, interoperability, and understanding on a scale not typically available in other operational venues.

c. Humanitarian assistance that directly relieves or reduces human suffering, disease, hunger, or privation. These missions may occur on short notice as a contingency operation to provide aid in specific crises or similar events. Humanitarian assistance includes disaster relief operations and other activities that directly address a humanitarian need. These missions may also be conducted concurrently with other joint force commander support missions and activities, such as dislocated civilian support, security operations, and international CBRN defence response. In all circumstances, it is essential that the provision of humanitarian assistance by armed forces be conducted in a manner that makes it clearly distinct from humanitarian action carried out by impartial humanitarian organizations. The maritime force can provide forces and resources to save lives and alleviate suffering.

(1) Maritime forces can provide direct assistance through medical assistance, helping to distribute goods and services, security of relief workers, and establishing emergency communications networks.

(2) Maritime forces can also provide indirect assistance by transporting relief material and personnel.

(3) Military engineers can provide infrastructure support, such as power generation, water purification, road and bridge repair.

(4) Maritime forces can provide a comprehensive logistics base and refuge offshore.

For additional information on humanitarian assistance, see AJP-3.26, Allied Joint Doctrine for the Military Contribution to Humanitarian Assistance.

1.11 Stability policing activities are conducted to establish a safe and secure environment, restore public order and security, and establish the conditions for meeting longer term needs with respect to governance and development (particularly through security sector reform). This can include both re-establishing law and order and reinforcing the Rule of Law (e.g., police, courts, corrections). Under a comprehensive approach, a combination of military and non-military actors (e.g., as indigenous and international police forces) could be employed to achieve this goal.

For additional information on stability policing, see AJP-3.22, *Allied Joint Doctrine for Stability Policing.*

Rivalry

1.12 Rivals exist in a state of peace but compete with each other for the same objective without hostile intent and with an attitude or behaviour in accordance with the rules-based international order. The rules-based international order is a shared commitment by all countries to conduct their activities in accordance with agreed rules (both treaty and customary international law) that evolve over time through multinationally agreed processes. Rivalry is not necessarily negative, it is the normal state in international relations, and, when it exists within the rules-based international order framework, it can be beneficial to all parties and the international system. Activities guided by this theme contribute to the comprehensive approach on a range of civilian tasks to redress the contradictions of a conflict, including maintaining public order and security; security sector reform; disarmament, demobilization and reintegration; transitional justice; infrastructure reconstruction; and national reconciliation. This includes peacekeeping and peacebuilding.

1.13 Stability policing activities are conducted with the aim of establishing a safe and secure environment, restoring public order and security, and establishing the conditions for meeting longer term needs with respect to governance and development (particularly through security sector reform). It provides a safe and secure environment where core state functions can be reformed and developed. Where the operating environment is uncertain or hostile, the main military task is to create the conditions that allow development and governance measures to be implemented primarily by those originally responsible. This may mean that maritime forces are involved in stabilization efforts. Maritime support to stabilization has two key lines of development. First, building maritime capability in the host nation; second, providing the security to enable the development of maritime trade infrastructure that enables industry and

business. Beyond this, it is the task of maritime forces to create the security conditions in the littoral[1] that allows other government departments, non-governmental organizations, and the international industrial base to conduct the development that enables trade.

Confrontation

1.14 Confrontation occurs when differences have not been reconciled and adversaries oppose each other with hostile intent or behaviour such that a state of crisis develops. Adversaries use hostile behaviour or attitudes, including posturing, threats, and perhaps violence, as a competitive tool to resolve the contradictions in their favour. There is no defined threshold that separates confrontation from armed conflict because many actors intentionally try to obscure or confuse exactly where this threshold lies. Adversaries consciously strive to stretch or constrict the threshold to increase their freedom of action or to restrict that of others. Proxy warfare, brinkmanship, terrorism, and economic coercion are all examples of sub-threshold activity within the confrontation zone. In response, other states conduct deterrence and defensive activities to reduce the confrontation or alternatively escalate the violence to armed conflict.

Armed conflict

1.15 Armed conflict occurs when escalation is intentionally sought by the actor, cannot be prevented or contained, and leads to one party resorting to military force to compel their enemy to resolve the contradiction in their favour. Armed conflict is a special kind of competition because it is not enduring; its role is to set the conditions for other forms of competition. Since armed conflict includes acts of nationally directed combat power, it invariably has an exponential effect on human emotions, uncertainty, and friction. It poses challenges and impediments to the population and likely exacerbates the drugs and arms trades, human trafficking, and exploitation of children and open a pathway for further corruption and humanitarian consequences. This is particularly apparent in the maritime environment where a complex maritime picture allows criminality to prosper in the guise of legitimate trade. Moreover, armed conflict is an extreme trial of physical and moral strengths and tests both institutional and individual resources of endurance and resilience.

1.16 Combat power can be applied in numerous and varied ways. The physical range of naval missiles now exceeds many hundreds of nautical miles for some Alliance members, and the array of warheads that accompany many weapons is equally varied. Historically, these missiles were often designed to be used against other ships at sea, but recent decades have seen a growth of increasingly accurate and sophisticated ship-borne, long-range land-attack missiles, surface-to-air missiles, and theatre ballistic missile interceptors.

1.17 While maritime forces can attack in support of other components, there are many methods by which maritime forces can attack in the maritime operating environment. These

[1] The term littoral does not have any implication on rules of international law of the sea and rights and duties of states arising from international law of the sea. This footnote is applicable to all uses of term "littoral" used throughout this publication.

include all types of fires, such as torpedoes, mines, depth charges, missiles (from afloat and ashore), aircraft (to include maritime unmanned systems and their weapons), and demolition charges of various types.

1.18 Fires can also be conducted by the use of non-lethal weapons and increased offensive use of the electromagnetic spectrum to deny the enemy C2, communications, computers, intelligence, surveillance, reconnaissance and target acquisition. Jammers, electromagnetic decoys, and the use of cyberspace and information operations all form part of the Alliance's maritime capability.

Warfare at sea as part of armed conflict

1.19 Warfare at sea is the conflict between naval forces for freedom of action throughout the maritime area of operations. At its core it is the most obvious and direct approach for obtaining sea control. Warfare at sea has unique characteristics that make it different from fighting on land. Terrain tends to dominate battles on land because rough terrain impedes manoeuvre and imparts advantages to the defender (hedgerows in Normandy), while flat terrain often aids the offensive (the coalition during Desert Storm). Offensive firepower dominates warfare at sea. Operations analysis and historical observation reveals the fleet that can "fire effectively first" can achieve decisive results. Warfare at sea establishes, maintains, and exploits maritime superiority in support of strategic objectives. Whether achieved through a single decisive fleet battle or a protracted war of episodic engagements and anti-access measures, maritime campaigns ultimately enable the maritime component commander's (MCC's) ability to control the sea, wherever and whenever needed. The fleet can maximise effects if it can mass fires on a portion of the enemy force, which exposes it to defeat in detail. These two tactical imperatives, attacking effectively first and massing fires on a portion of the enemy force, require the MCC to focus on maritime intelligence, surveillance, and reconnaissance; countering-intelligence, -surveillance, -reconnaissance and -targeting; and manoeuvre and to integrate joint supporting capabilities, potential humanitarian consequences, and ways to minimize the harmful impact on civilians and civilian objects.

1.20 As conflict intensifies, the MCC orchestrates battles and engagements to achieve operational and strategic objectives. Though dependent on the specifics of the circumstances, MCC objectives normally include some combination of sea control and power projection. Sealift features prominently in support of joint operations that are continental in character. Generally, the maritime force needs to obtain sea control before it can project power. Sea control enables all other naval functions. Without sea control, the joint force is denied the ability to sustainably project power in support of joint strategic military objectives. Sea control may be achieved through destroying the enemy fleet, blockading them within a restricted area so that their reach cannot affect friendly force freedom of action, depriving them of the means to inhibit friendly force activity, or through the enemy's own choice. As a supporting effort, the joint force can break the cohesion of enemy naval forces by applying lethal and non-lethal fires against its tactical functions (e.g., C2; intelligence, surveillance, reconnaissance, targeting, movement, and manoeuvre) and anti-access and area denial

activities. The value of maritime operations to a joint force commander lies in the ability to establish, maintain, or execute naval functions required to support the achievement of strategic military objectives. When the nature of the joint operation is maritime in character, this could mean the expanse of sea control across great distances such that the opponent is unable to counter joint force freedom of action throughout the maritime environment.

1.21 During a battle at sea, a fleet normally employs intelligence, surveillance and reconnaissance capabilities (e.g., maritime unmanned systems, satellites, escorts, maritime aircraft) ahead of the main body to locate the enemy and enable a first strike. At the same time, the fleet arranges screening forces and capabilities to protect the main body. Once the enemy is located, the fleet can mass fires against capital ships or isolated portions of the enemy force. The joint force can support or augment maritime intelligence, surveillance, and reconnaissance; countering-intelligence, -surveillance, -reconnaissance and -targeting, manoeuvre; and fires with space, cyberspace, electromagnetic spectrum operations, special operations, strikes, and air-to-air refuelling, among many other capabilities.

1.22 The operating environment of a sea battle is intense. Intelligence, surveillance and reconnaissance in the maritime operating environment can also be challenging because of the vastness and physical characteristics of the open sea, the clutter of the littorals, and the high mobility of naval forces. Because of overlapping sensor coverage, counter-intelligence, -surveillance, -reconnaissance, and -targeting generally becomes more complex the closer naval forces get to the enemy force concentration areas.

1.23 Gaining sea control is the battle for freedom of action in the maritime area of operations sufficient to achieve desired objectives. Traditionally, this was achieved by neutralizing or destroying enemy maritime forces. In today's operating environment, land-based capabilities are an overlapping consideration that can inhibit freedom of action in the maritime area of operations. Land-based capabilities (e.g., shore batteries, C2 jammers, missiles, aircraft, and even the laying of sea mines) influence the manoeuvrability of maritime forces out to a defined limit. The MCC provides guidance and intent to subordinate commanders to account for the specifics of layered, overlapping, combined arms capabilities to achieve operational and strategic objectives founded upon the requirement for sea control.

1.24 The maritime force's greatest strength is its operational reach and mobility. A fleet can employ lethal fires at great range. In general, once a fleet is within weapons range of the enemy it combines manoeuvre, deception, and emission control measures to gain a position of advantage to deliver tactical fires while reducing risk to force. History shows that when a fleet becomes "fixed" and concentrated inside an enemy's sensor and weapons engagement zone it is vulnerable to sustained attacks. In general, operating capital ships or other high-value units in the narrow confines of semi-enclosed seas (e.g., Baltic Sea) that are contested by the enemy should be avoided. Inside shallow and confined waters, manoeuvre is restricted and capital ships can be exposed to overlapping threats. Many NATO nations have capabilities ideally suited to operations in confined and shallow waters.

1.25 Successful warfare at sea achieves sea control to protect sea lines of communication; enable power projection; permit the seaborne delivery of required resources; and deter, restrict, or deny the use of the maritime operating environment by the enemy. These operational objectives are essential to support strategic objectives. A variety of factors and circumstances determine the ways in which naval functions are accomplished and coordinated in warfare at sea, but the baseline requirement is unambiguous, sea control is the foundation of all other sustainable actions in the maritime operating environment.

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Chapter 2 – The maritime operating environment

Section 1 – Introduction to the maritime operating environment

2.1 The maritime environment is the global interconnected bodies of water and underlying surfaces up to the high-water mark. Apart from legal separation of water bodies that defines roles and responsibilities for nations, geographically, the maritime environment includes the oceans, seas, coastal areas, and seabeds; the natural resources available on the surface, in the depths of the sea, on the seabed, and in the area below them; and the artificial infrastructures and the artefacts present therein. This description and understanding, these terms as well as other related terms such as littoral/coastal waters or littoral do not have any effect nor any implication in terms of sovereign rights of states under international law.

2.2 The maritime operating environment is an extensive manoeuvre space from which the joint force can operate to generate decisive effects across the continuum of competition. The maritime operating environment, due to its vast area and relatively sparse population, is usually permissive. As maritime forces manoeuvre closer to the shore, maritime forces should understand the threats to the population and how they may react or respond to maritime activity. The maritime operating environment may become more complex, congested, uncertain, or hostile. More than a medium to efficiently move forces and supplies, the joint force can use the maritime operating environment to demonstrate diplomatic unity, impose economic or military costs, conduct seaborne clandestine and covert operations, gather intelligence, and deter, disrupt, or defeat aggression. The maritime force can provide an intermediate force capability as they manoeuvre into locations to conduct non-lethal activities (e.g., as electromagnetic warfare and cyberspace operations) to create effects below the threshold of armed conflict. As each nation develops their own view on the extent of the maritime operating environment and establishes capabilities and activities matching this view, it is vital that NATO maritime force components share national views and restraints early on in order to allow the maritime component commander to coordinate and mitigate any gaps or differences between national concepts.

2.3 Maritime forces are needed to gain sea control, an essential precursor to power projection overseas in an era of great power competition. Once sea control is gained (or limited sea control, as required by the mission), the joint force can use the maritime operating environment to conduct amphibious and other raids, outflank the enemy, fix enemy forces, deliver deep fires, or conduct large-scale amphibious assaults and withdrawals.

2.4 Joint maritime operations occur in blue-water (high seas), green-water (coastal waters, ports, and harbours), and brown-water (navigable rivers, lakes, bays, and their estuaries) environments, and in the landward areas in the littorals, each with its own challenges. See Figure 2.1 for a depiction of the maritime environment. Operations in blue-water environments require forces capable of remaining on station for extended periods, largely unrestricted by sea state, and with logistics capability to sustain these forces for extended periods. Operations in green-water environments stretching seaward require ships to protect the amphibious warfare ships, landing craft, and patrol craft with the stability and agility to

operate effectively in surf, in shallows, and in the near-shore areas of the littorals. Operations in brown-water environments are conducted by land, navy, and riverine forces; special operations forces; or amphibious forces and involve operating in shallows and congested areas that constrain manoeuvre but do not subject maritime forces to extreme surf conditions. Operations on land in the littorals may involve landing forces going ashore by embarked aircraft, landing craft, and amphibious vehicles from amphibious warfare ships.

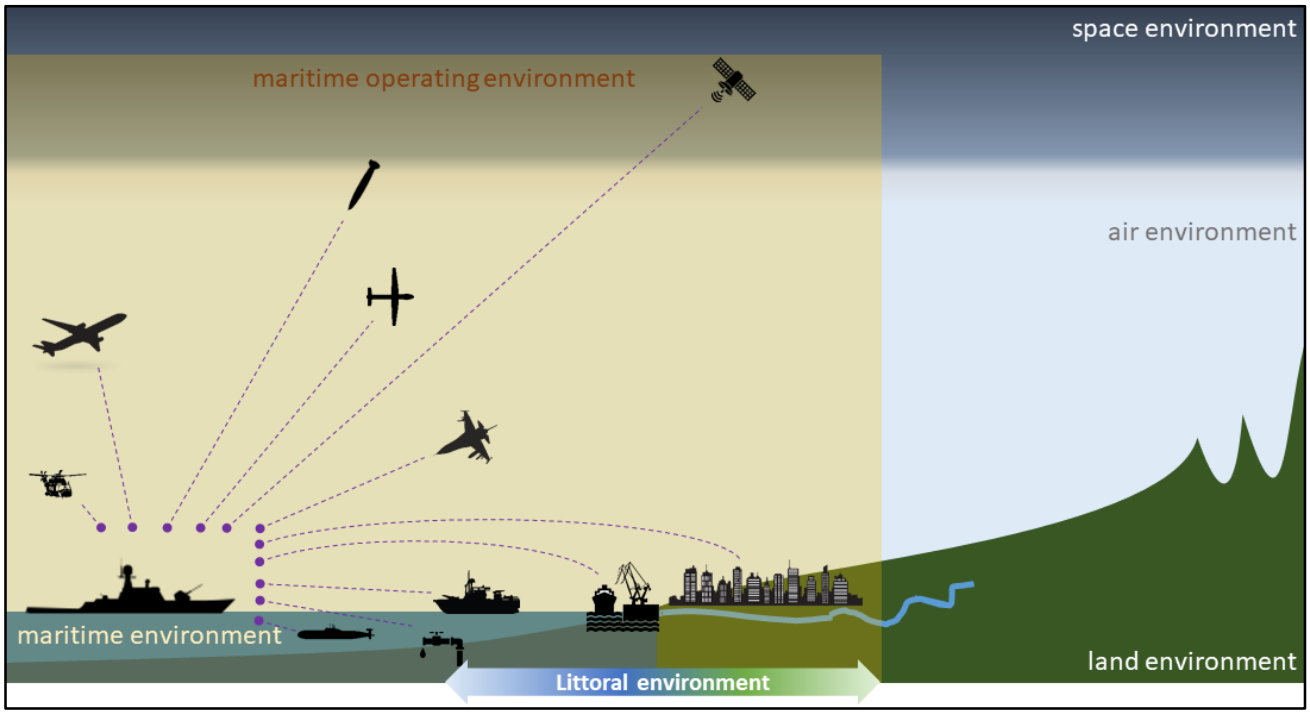

Figure 2.1 – Environments

2.5 For warfighting purposes, the primary value of the maritime operating environment stems from its utility as a manoeuvre space. Three factors fundamentally influence manoeuvre throughout the maritime operating environment and accordingly shape tactics and strategy relevant to fleet warfare. The overlays of reach, geography, and sea lines of communication create areas of greater or less military value and shade the maritime area of operations with areas of greater or less risk.

a. **Geography.** The coastlines of continents, the depth and breadth of the oceans, environmental conditions, and key terrain (choke points, harbours, islands, hydrographic features) impact movement and manoeuvre throughout the maritime operating environment.

b. **Sea lines of communication.** Direct routes across and among geographic and human-generated features enabling efficient and expeditious transit through the maritime environment. Sea lines of communication also refer, in general terms, to the ability to move goods, resources, or forces by any route on the seas.

c. **Operational reach of the enemy.** There are two traditional forms of reach: land-based and sea-based. Depending on the quality of their naval forces, enemy seaborne capabilities may have excellent manoeuvre ability and are only limited by the reach of Allied weapons. Land-based capabilities (e.g., shore batteries, command and control jammers, missiles, aircraft) can influence the manoeuvre ability of Allied maritime forces out to a defined limit. The land-based and sea-based capabilities can also be combined to amplify operational effects (e.g., placing sea minefields at the outer reach of coastal batteries, in a layered defence architecture, as done in Kuwait in 1991). The evolution of space, cyberspace, and electromagnetic capabilities increasingly extend operational reach to a global scale in a manner distinct from air-, land-, and sea-based capabilities.

2.6 The geometry of operations in naval warfare is unique to each theatre and circumstance. Operations may be close to enemy forces or out to areas of relative safety and control, mindful of enemy manoeuvrability within various areas of operations. Enemy intelligence, surveillance, reconnaissance, and targeting capabilities add a second “overlay” of risk that shades the maritime operating environment. Between regions of relative safety and sea control lie contested areas that should be penetrated sufficiently to enable the achievement of operational and strategic objectives, while concurrently denying an enemy the ability to do the same. It is within these contested areas that naval forces fight to expand sea control, project power, and establish maritime superiority.

2.7 The maritime operating environment is multidimensional, requiring maritime forces to fight in three dimensions: up (air warfare), out (surface warfare), and down (underwater warfare). North Atlantic Treaty Organization (NATO) maritime forces are prepared to fight in the air, on the sea surface, underwater, on the seabed and on land. Each dimension of the maritime operating environment has factors and risks that influence operations.

2.8 The maritime engagement space is part of the maritime operating environment that merges multiple factors into a single area of operations with boundaries determined by the commander. It provides the settings for the planning and conduct of operations. The maritime commander’s engagement space is often broader than their assigned area of operations area due to increasing interconnectivity of the effect dimensions. Furthermore, the varying degrees of relevance that geography has in the cyberspace, space, acoustical, electromagnetic, and information environments, means that a geographically bounded engagement space is not always suitable. A commander’s engagement space is becoming increasingly cluttered. The need to orchestrate political and civilian synchronize military with non-military actions and the compression of the level of operations, means that the engagement space encompasses activities from all levels of operations and from across political military and civilian activities. The complexity of the engagement space requires an understanding of the multi-domain operations process to combine political, military, and civilian capabilities whose activities and actions can be orchestrated and integrated across the five operational domains.

2.9 Engagement space management is the use of all necessary adaptive means and measures that enable the planned and dynamic coordination, synchronization, and prioritisation of operations and activities across the engagement space.

For additional information on engagement space management, see AJP-3, *Allied Joint Doctrine for the Conduct of Operations.*

Section 2 – Enduring nature of the maritime operating environment

Physical factor

2.10 Geographic, meteorological, and oceanographic conditions across the maritime environment may create significant variations in air and sea temperature, sea state, salinity, and humidity that impact maritime operations. The meteorological and oceanographic conditions affect the physical performance of individuals, as well as influence military decision-making at both the tactical and operational levels. These conditions can be used for friendly force advantage. For example, a submarine can use poor sonar conditions to minimize the risk of detection. Furthermore, the inherent mobility of maritime forces enables them to reposition to a more favourable location within an assigned area of operations. An aircraft carrier can, for instance, seek out and exploit a local weather window in poor visibility to continue flying operations. The physical properties of the air-sea interfaces combined with the varying acoustical properties of different sonar layers and different water masses and the sheer vastness of the maritime operating environment, render the sea an enormous challenge for deploying effective sensors.

Diplomatic factor

2.11 The seas have been a point of interaction for states for centuries. Bilateral and multilateral military engagements are a routine element of international affairs with long-term effects. States use the freedom of manoeuvre afforded by the oceans as a conduit for building relationships and strengthening ties. States also exploit the sea to exert influence upon those they wish to persuade, deter, and, if necessary, compel or coerce.

2.12 Diplomatic and political maritime issues increase as nations attempt to extend their claims over offshore resources. These claims lead to disputes over the exact extent of maritime borders and the pertinent exclusive economic zone. Artificial islands, installations, and structures do not possess the status of islands. They have no territorial sea of their own, and their presence does not affect the delimitation of the territorial sea, the exclusive economic zone, or the continental shelf.

> *An example is recent activity in the South China Sea where China has sought to shore up its vast territorial claims over virtually the entire South China Sea by building island bases on coral atolls nearly a decade ago. Members of the Alliance regularly challenge this by sending their forces through the region in freedom of navigation missions.*

Information factor

2.13 Warships, submarines, and shipborne assets (aerial, surface, or underwater) with their ability to remain for long periods in the area of operations provide support for surveillance and reconnaissance activities, intelligence gathering, and NATO's presence message. The close relationships based on trust and continued support established between the crews of NATO ships and other actors (e.g., merchant or fishing vessels) enable the force to gather vital information and influence the desired audience, supporting NATO strategic communications.

2.14 Information, integrated with other joint functions, influences perceptions, behaviour, action or inaction, and decision-making. It is also used by the adversary or enemy to do the same to NATO forces. Key enablers are strategic communications, information operations, psychological operations, and military public affairs. These key enablers should be integrated at the start of the planning process, support on-going military operations, and be consistent with the overall information strategy and end state. Coordination is also required to ensure that other activities by the joint force do not undermine activities in the information environment and vice versa.

Military factor

2.15 Outside the Alliance, some states have demonstrated the ability to deploy increasingly well-equipped forces globally. Relatively minor maritime powers and non-state actors can threaten military, commercial, and civilian ships, especially in the littoral where they can conduct sea denial operations. Sea mines and waterborne improvised explosive devices, for example, are widely available, relatively inexpensive, and effective.

2.16 The Alliance’s approach to multi-domain operations enables NATO’s military instrument of power to prepare, plan, orchestrate, and execute synchronized activities across all domains and environments, at scale and speed, in collaboration with other instruments of power, stakeholders, and actors. This delivers tailored options, at the right time and place, that build advantage in shaping, contesting, and fighting and present dilemmas that decisively influence the attitudes and behaviours of adversaries and relevant audiences.

For additional information on multi-domain operations, see AJP-01, *Allied Joint Doctrine.*

Economic factor

2.17 The seas enable the economic reach of nations to extend across the globe. Ninety percent of global trade, materiel, and goods flow across and under the seas. The Internet, and the conduct of business it enables, is dependent upon a network of undersea cables through which 99 percent of international Internet traffic traverses. The global economic system is almost wholly dependent upon unhindered activity on the seas.

2.18 A key role for NATO maritime forces is to support the Alliance by ensuring the just-in-time global economy is enabled by safe and secure international sea routes. Disruption of these routes inevitably results in supply chain shortages with follow-on economic consequences.

In 2021, the 400-metre long Ever Given, *displacing 220,000 tons, got stuck in the Suez Canal for six days. The vessel and its 17,600 containers blocked the canal in both directions, resulting in a backlog of more than 400 ships.*

2.19 Additionally, the seas contain bountiful resources necessary to national life around the world. Whether in the pursuit of food (a quarter of the protein consumed in the world has origins in the oceans) or commodities (in the form of oil and gas reserves, mining, or other activities (e.g., water desalination)), resources and their pursuits are a national interest to most nations of the world.

Section 3 – Evolving character of the maritime operating environment

Environmental factor

2.20 One major motivation for coastal states to extend their jurisdiction over the seas is the prospect of finding new sources of fossil fuels. This has led to tension, dispute, and even conflict. As easily accessible fossil fuels become scarcer, such tensions are likely to increase. Furthermore, the exclusive economic zone and continental shelf is increasingly being exploited to develop low-emission wind and tidal energy, creating further potential for conflict. Additionally, conflicting bids for control of Arctic sea areas and for the access of trade routes may create political tensions in the future.

2.21 Climate change may result in a reduction of Arctic ice, enabling the exploitation of natural resources and sea passages across the Arctic region that are rich in natural resources, which could cause future political tension or conflict. Rising sea temperatures may affect the acoustics of the surface layer and reduce the ability of sonar to detect contacts. Rising sea levels may affect the ability of forces to operate in the littorals and alter harbour approaches. More intense heat waves may affect the ability of maritime forces to conduct operations due to physical stress or to operate machinery that relies on cooling by sufficiently low ambient air or sea temperatures. The number and severity of hurricanes may inhibit the ability of a maritime force to reach an assigned area of operations.

Political factor

2.22 The value that the oceans bring to national life lends a geopolitical dimension to maritime activities. Events at sea impact the lives and livelihoods of those ashore, which, in turn, impacts the nations around the world. Access to and activity on the seas drives national interests ashore. Economic gain, military advantage, and national ambition have all been the source of conflict at and from the sea.

2.23 Initially, the extension of national sovereignty out to sea was a political-military act with some economic consequences; more recently, it is frequently undertaken for objective, calculated economic benefit. Many states struggle to police their maritime zones and manage their increasingly important maritime resources effectively. The extension of coastal state

jurisdiction has increased the likelihood of disputes between bordering states and between coastal states and flag states exercising freedom of navigation. Maritime forces play a vital role in resisting further restrictions on high seas freedoms.

Urbanization factor

2.24 The importance of the littoral is growing. Industrial activity and migration to (mega) cities both lead to urbanization of coastal areas. With this shift, the ability to project maritime power ashore becomes more important than before. Maritime operations in coastal, riverine, and urban areas may become prominent in future conflicts.

Dependency on cyberspace and space

2.25 Cyberspace links operators through communication and information systems. Cyberspace extends the joint force's and the enemy's operational reach. State and non-state actors may attack NATO military communication and information systems to deny access, control the flow of vital information, and, in extreme cases, subsequently control or disable numerous military systems that rely on connected networks for their effective use. Without clear physical boundaries and with the inherent capability to provide instantaneous global reach, cyberspace is both a key asset and vital vulnerability for NATO.

2.26 Space operations support and enable regional and global operations. Space capabilities provide nearly worldwide coverage and access to otherwise denied areas. Rules that restrict aircraft overflight do not affect spacecraft in orbit. This characteristic makes space-based intelligence collection; remote sensing; satellite communications; position, navigation, and timing; environmental monitoring; and indications and warning services more responsive to support maritime operations than most terrestrial alternatives. Space affords a global vantage point from which to assess large swaths of the land, oceans, and air.

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Chapter 3 – Maritime forces and activities

Section 1 – Maritime forces

Introduction

3.1 The maritime domain comprises capabilities and activities primarily related to operating below, on, and above the surface of the oceans, seas, bays, estuaries, islands, coastal areas, and the high-water mark, overlapping with the land domain in the landward segment of the littorals.

3.2 Nothing in the definition, or the use, of the term domain, implies or mandates exclusivity, primacy, or command and control (C2) of that domain. There are numerous ways in which Allied maritime forces can conduct operations in their own right as a single component. These are explored in great detail, in a range of NATO Allied joint publications and Allied tactical publications that cover naval warfare specialist areas (e.g., above-water warfare, antisubmarine warfare, submarine operations, naval mine warfare, amphibious operations, maritime information warfare, and maritime aviation). Maritime forces directly participate in operations ashore through the projection of power, by executing strike warfare, amphibious operations, and riverine operations. They can enable or support missions ashore by influencing land operations through deterrence; naval fire support; sea basing of land, air, and special operations forces and their assets; moving land forces via sealift; and/or providing access. They also can be employed in littoral waters for the conduct of sea control or sea denial and function as joint force or component C2 platforms.

Attributes of the maritime force

3.3 The attributes of maritime forces position them for a major role to achieve operational objectives at and from the sea, in the air, in cyberspace, in the acoustic and electromagnetic environments, and ashore, contributing to effective crisis response through diplomacy and deterrence. Maritime forces attributes are:

a. **Mobile**. Mobility is the ability of maritime forces to operate forward and manoeuvre freely. Maritime forces, especially those pre-positioned or forward-deployed, can respond quickly to crises, reposition as required, and remain or retire as circumstances and access warrant. Mobility enables the maritime component commander (MCC) to distribute or concentrate forces with the ability to strike from a desired place and time. This imposes great uncertainty and cost on an enemy. Agility is the ability to quickly understand the complex maritime operating environment and quickly seize the initiative as the operating environment changes. These two attributes are what enable the MCC to tailor forces to influence any situation required by NATO.

b. **Versatile and available.** Naval forces are multi-mission by requirement and design. Versatility means naval forces have the ability to shift focus, reconfigure, and realign forces quickly, depending on what best serves NATO interests. Availability means naval

forces are trained, equipped, and ready to engage Alliance enemies; project and sustain power ashore; and conduct maritime security operations against a variety of threats from above, on, and under the water.

c. **Resilient.** Resilience is the ability to prepare for, recover from, and adjust to life in the face of stress, adversity, trauma, or tragedy. This is accomplished through rigorous training for operations and combat and the fighting spirit of maritime forces. Maritime forces have the ability to resist and recover from or adapt to an adverse occurrence during operations that may cause harm, destruction, or loss of ability to perform mission-related functions.

d. **Lift capable.** Sealift provides the majority of support for large-scale military deployment, reinforcement, onloading, offloading, and resupply. Seaports of embarkation enable forces and materiel to be withdrawn and repositioned to meet a commander's emerging requirements. Maritime platforms are the most practicable means of deploying large-scale joint force support materiel.

e. **Posture** (means of)**.** From the moment they commence transit, maritime forces can signal diplomatic resolve and act as a force for deterrence or coercion. Force posture is a day-to-day activity that joint force commanders use to counter adversary actions without armed conflict and is a key consideration in generating influence. Maintaining a forward naval presence in key regions around the world facilitates the conduct of naval diplomacy that reassures Allies and deters aggression, while also providing the ability to conduct crisis response. The maritime force's presence provides NATO strategic access critical to respond to any threats against Allies and partners. There are times when diplomacy is simply not enough and competition escalates into conflict. Until then, however, naval diplomacy is one of the ways nations seek peace and prosperity.

f. **Sustained reach.** The global expansiveness of the oceans and the interests of NATO around the world necessitate that nations conduct naval operations that are continuous, at and from the sea, and typically far removed from land-based support. Self-sufficiency and sustainable global logistics enable NATO to maintain naval operations as long as required. By remaining on station for indefinite periods of time in international waters, naval forces communicate a capability for action not available to forces dependent upon air or basing rights.

g. **Leverage** (means of)**.** Leverage is the ability with which to influence events both at sea and ashore. NATO maritime forces use integrated operations, distributed operations where forces are separated in space and time and manoeuvre to seize, retain, and exploit freedom of action.

h. **Lethal.** When diplomacy fails, maritime forces bring destructive force to bear to defeat an enemy's ability to threaten the Alliance or its interests, in accordance with applicable legal frameworks.

i. **Expeditionary.** An expeditionary force is capable of sustained operations at sea over extended lines of communications into distant operational areas. While all NATO forces participate in expeditions, the maritime force plays an essential role in enabling expeditionary operations for the entire joint force.

Maritime forces operations

3.4 Maritime forces may include navy, marine/naval infantry, coast guard units organized into task forces, task groups, task units, and task elements. These forces provide the ability to exert diplomatic, information, military, and economic influence at a time and place of choice from the maritime area of operations. Maritime forces have traditionally been employed globally to maintain the freedom of navigation essential to the general economic welfare or survival of nations. Conversely, they have been used to disrupt an opponent's sea lines of communication as part of a wider Allied, joint, or combined operation.

3.5 Maritime forces can conduct operations across the continuum of competition in support of NATO core tasks. They project power or forces ashore through amphibious operations, ship-based aircraft, maritime unmanned systems, strike warfare, and protection of forces ashore and afloat and redeploy forces when required.

3.6 Maritime forces provide a means of maintaining a global military presence while limiting the undesired economic, social, political, or diplomatic repercussions that often accompany NATO footprints ashore. Maritime forces are globally mobile and deployable. They are able to exploit freedom of manoeuvre, transiting to and arriving in an area of operations to provide a scalable, sustained military presence, and to demonstrate political intent. No single attribute discussed below is independent of another and all apply to a greater or lesser extent at different stages of differing operations. Forward-deployed naval forces that are culturally aware can provide a stabilizing influence and can prevent or limit conflict. They provide NATO with a range of options for influencing events while minimising the risk of being drawn into a crisis or protracted entanglement.

3.7 The following represent some of the ways in which the maritime component can contribute to joint operations:

a. **Monitor a crisis.** Maritime forces can provide valuable information from the outset of a crisis. Intelligence collection can be conducted and monitored from ships, submarines, unmanned systems, forces ashore, and maritime aircraft.

b. **Mobility.** A maritime task group may be the principal means of initial deployment for an intervention force. It can move significant numbers of forces and materiel up to 500 nautical miles in 24 hours.

c. **Force protection.** A maritime force can provide air and missile defence and protection to forces in the water or on land through precision fires. An amphibious force with a tailored air group or other craft are capable of recovering personnel if required. They can provide harbour protection for the loading and unloading of civilian ships in support of military operations.

d. **Organic air support.** Maritime aircraft contribute to counter-air operations, antisurface warfare, and combat support in conjunction with land-based aircraft, when available. Maritime air operations should be integrated across the force and coordinated and synchronized with the air component commander (ACC).

e. **Fire support and close air support.** A maritime force can employ fires using maritime aircraft, missiles, and gun munitions, including coordination with shore-based fires. As well as engaging targets, it can also integrate fire support and conduct battle damage assessment. Naval fire support may also conduct preparatory fires, then complement land fire support once deployed, and may be available to any unit operating in the littoral.

f. **Air interdiction.** Surface and subsurface land attack missiles and maritime strike aircraft may provide the primary means of organic long-range attack, especially in the early stages of an operation, and have particular utility for coercion. They can subsequently complement other air interdiction forces.

g. **Amphibious operations.** An amphibious force is focused on the projection of landing forces ashore. The five principal types of amphibious operation are: assault, raid, demonstration, withdrawal, and amphibious force support to crisis response and other operations. The need for detailed coordination across all environments makes amphibious operations extremely complex. Some Alliance maritime forces can conduct or contribute to riverine operations.

h. **Sea basing and sustainment.** The ability to posture offshore may provide essential logistical and medical support to forces ashore and afloat through sea basing, possibly as an alternative to host-nation support. Additionally, maritime forces offer C2 facilities with secure communication and information systems to be used in support of joint forces. Once the focus of an operation moves ashore, the maritime effort may shift from enabling to supporting. A maritime force can provide sea basing to minimize risk to land forces, maximise surprise, and minimize the requirement for host-nation support. Joint sea basing is an option that offers flexibility across the different levels of command and military operations and throughout the different phases of an operation. Joint sea basing can optimize the agility with which expeditionary forces deploy into theatre and then exploit the maritime environment in the conduct of the joint operation. In doing so, it can increase political choice without irreversible commitment.

i. **Riverine operations.** A riverine force focuses on employing maritime, ground, air, and/or special operation forces elements to establish control of the waterways in a geographic area; establish limited control of specific land areas, populations, and resources; locate and destroy hostile forces, adversary installations, and adversary supplies; or establish and secure an area of operations.

Section 2 – Role of the maritime force

Introduction

3.8 Maritime operations include any actions performed by surface, subsurface, maritime air, and/or amphibious forces ashore to shape the operating environment and:

- provide a forward presence;
- provide freedom of manoeuvre and movement;
- project power at sea and ashore;
- contribute to a safe and secure maritime environment; and
- contribute to seizing and holding the initiative.

3.9 Figure 3.1 depicts the ends, ways, and means relationship among naval forces, warfare areas, and NATO core tasks. The MCCs align means (forces and tactical excellence across warfare areas), ways (C2 and operational art), and ends (tactical objectives) through orchestrating tactical activity to achieve decisive conditions for functional or maritime superiority, leading to tactical objectives in support of the joint force commander's operational objectives for the achievement of strategic objectives, pursuing the attainment of the end state.

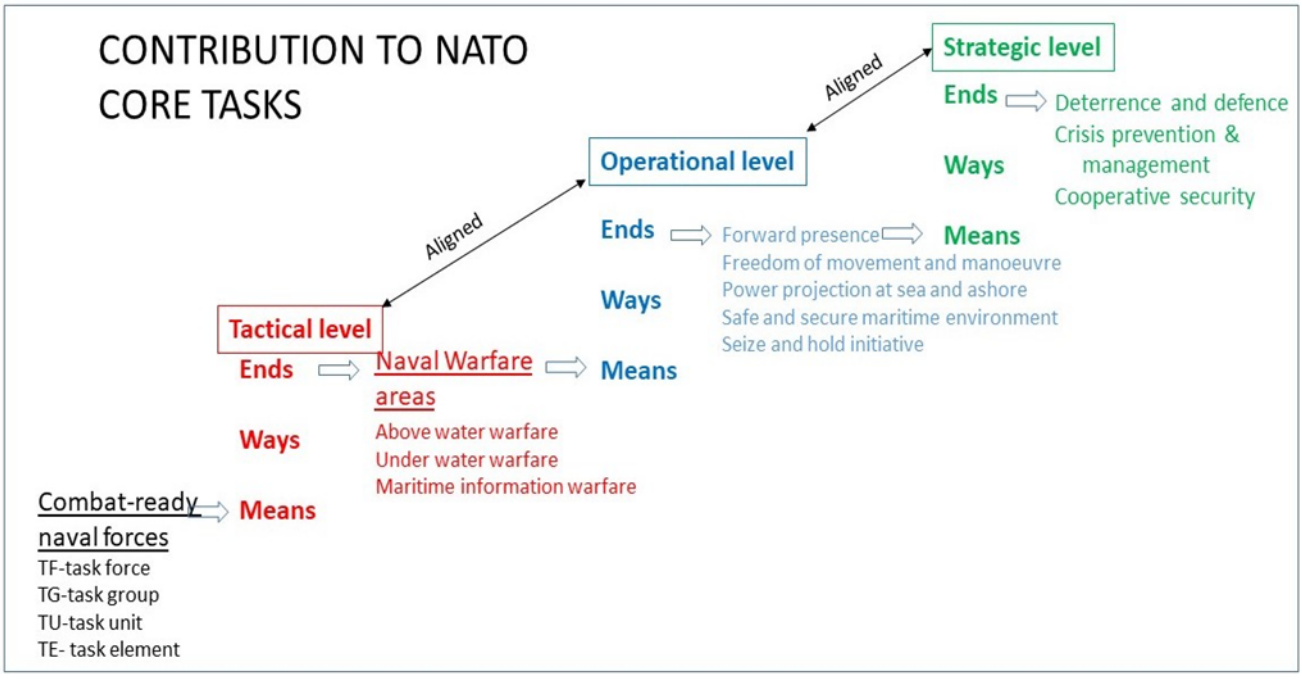

Figure 3.1 – Maritime contribution to NATO core tasks

For a further discussion of ends, ways, and means, see AJP-01, *Allied Joint Doctrine.*

Provide a forward presence

3.10 Forward presence enables naval forces to develop awareness of the operating environment, to include environmental conditions and military, commercial and criminal activity.

3.11 Joint/coalition forces operating from the sea, in conjunction with other globally based joint forces, provide an MCC with credible offensive and defensive capabilities during the early stages of a crisis. Forward-deployed joint forces can leverage forward presence to help deter or preclude a crisis from escalating while enabling the subsequent introduction of additional forces, equipment, and sustainment.

Provide freedom of manoeuvre and movement

3.12 Freedom of movement throughout the maritime area of operations is essential for any operation, as it contributes to freedom of action. Experience indicates that various factions may try to impose local restrictions on freedom of movement. These restrictions should be firmly and swiftly addressed—initially through negotiation, but, if necessary, through more vigorous and resolute action from freedom of navigation operations, up to and including the use of force, in accordance with the legal framework applied and subsequent rules of engagement. Movement extends the operational reach of maritime forces to affect the opponent's centre of gravity or critical vulnerabilities. Operational reach is the distance and duration across that a joint force can successfully employ its military capabilities.

3.13 The principal purpose of manoeuvre is to gain a position of advantage over enemy forces and to place the enemy at a disadvantage. To be successful, and to anticipate situations or exploit emerging opportunities, the MCC should be empowered with the freedom of action to deploy reserves, set priorities, and allocate maritime forces and support assets. However, the degree of freedom at the operational level depends upon the character of the conflict, the interaction of military and non-military lines of operation within the overall collective strategy, and the decisions of NATO’s and contributing states’ strategic leadership. Through manoeuvre, the MCC can concentrate forces at decisive points to achieve surprise, create psychological effects, and generate operational advantage. Manoeuvre may also enable or exploit the effects of massed or precision fires. Maritime commanders may achieve advantage by attacking enemy forces and controlling territory, the electromagnetic environment, key waters, critical assets, and lines of communication.

3.14 Movement and manoeuvre enables the MCC to:

- deploy, shift, regroup, or move forces, formations, and capabilities by multiple means or ways throughout the area of operations;
- achieve a position of advantage over an enemy or adversary;
- mitigate delays caused by terrain or obstructions;

- delay, reroute, or stop movement and manoeuvre by enemy formations;
- control significant areas; deny, expand, and manipulate access to information; and influence relevant populations relative to the objective whose access to possession or control provides either side an operational advantage; and
- empower commanders to pursue their designated missions and minimize the restrictions placed upon them.

Project power at sea and ashore

3.15 Maritime power projection is the threat, or use, of military force to influence events from the sea. It exploits the maritime operating environment through sea control and manoeuvre to demonstrate resolve and a willingness to act to achieve NATO objectives. This can be done for many reasons, including diplomacy, to maintain freedom of navigation or support ground units.

3.16 Maritime forces directly participate in operations ashore through the projection of power by executing strike warfare, amphibious operations, and riverine operations and by supporting special operations. They can enable or support missions ashore by influencing land operations through deterrence; naval fire support; sea basing of land, air, and special operations forces and their assets; moving land forces via sealift; and/or providing access. They also can be employed in littoral waters for the conduct of sea control or sea denial and function as joint force or component C2 platforms.

3.17 Maritime power projection is a proactive operation that involves seizing the initiative by projecting power and influencing events from the sea. However, power projection is not necessarily offensive. The mission may be to withdraw forces from ashore or to evacuate civilians.

3.18 There are numerous ways in which maritime power projection can contribute to a joint operation:

a. **Shape.** The sea is, in most cases, an area free of boundaries and frontiers that provides a valuable arena for joint force manoeuvre. In preparation for subsequent operations, maritime forces can take actions to cause an adversary to conform to a particular pattern.

b. **Reassure.** Before the build-up of friendly joint forces in theatre, the presence of maritime forces can reassure a friendly state. A state reassured by the presence of maritime forces may be more likely to provide access, basing, and overflight.

c. **Deter.** Maritime forces can deter an aggressor by deploying into a region at an early stage, at relatively low political risk, and, if necessary, in considerable strength.

d. **Coerce.** As maritime forces build up in theatre, they can demonstrate further resolve by launching discrete amounts of maritime power against key enemy targets to force an enemy away from one course of action or to be compelled to take another. They can do this while having some measure of control over escalation.

e. **Disrupt.** Maritime forces can help to shift the emphasis from defensive to offensive operations by disrupting enemy activity through the use of amphibious raids into enemy territory or conducting limited cyberspace attacks.

f. **Project.** An important role of maritime power projection, particularly amphibious forces, is to provide manoeuvre from the sea. Speed of manoeuvre at sea often surprises opponents ashore.

g. **Support.** During the execution of an operation, the maritime component's full range of capabilities, particularly precision strike, can support friendly forces. Additionally, the sea base may be used to flexibly and securely hold a reserve force or serve as an operations centre or command platform; these functions have equal utility at both the start and the end of a conflict or crisis. Maritime forces can provide force protection for aircraft and can supply ammunition, fuel, and water to other forces.

h. **Limit.** Alliance maritime forces can guard the maritime flanks of an area of operations and by doing so, limit the freedom of manoeuvre of an enemy. This also has the added advantage of greatly reducing the need for land forces to guard vulnerable coastal areas that are being protected by friendly forces at sea.

i. **Redeploy.** The sea base may be used to redeploy and reconstitute land forces that remain in theatre, acting as a strategic reserve.

j. **Withdraw.** When it comes to withdrawal, the ability of maritime forces to transport large numbers of personnel and heavy items of equipment out of the area of operations and protect them in the process, has often been a vital function.

Contribute to a safe and secure maritime environment

3.19 Contributing to a safe and secure environment includes conflict prevention, stabilization, capacity building, and development tasks. Since the provision of a safe and secure environment is primarily the responsibility of host-nation governmental authorities, NATO's role in this section could be to support their efforts if their capacity is insufficient. The primary role of maritime contribution to a safe and secure environment is to provide the necessary security conditions to reduce the chance of localised or wide-spread escalation, conflagration, or reversion into armed conflict. It supports the strengthening or re-establishment of a sufficient protective environment to enable conditions to develop long-term maritime security and stability where the population is served by a functional, legitimate, self-sustaining, and resilient government.

Contribute to seizing, holding and exploiting the initiative

3.20 The maritime contribution to seizing, holding, and exploiting the initiative is to gain a position of advantage. Maritime forces are able to achieve this advantage by forcing the enemy to react or a stakeholder not to act, increasing the friction and uncertainty that faces them, and creating confusion and overwhelming their ability to make decisions and act coherently. Seizing the initiative is intrinsically linked to applying the mission command tenet. Holding the initiative enables the commander to dictate the course of events and maintain relentless pressure on the enemy. Seizing and holding the initiative requires the application of several factors. Commanders should consider these factors as they develop their concept of operations supporting the joint operation. These factors are mutually reinforcing and should not be applied in isolation:

a. **Pre-emption.** This involves seizing an opportunity to deny the enemy an advantage before they themselves act. It denies them the initiative and frustrates their plan. Its success lies in understanding, taking calculated risk, speed of execution, and subsequent exploitation.

b. **Surprise.** Surprise is one of the most significant contributors to military success at all levels. Surprise involves using ambiguity, concealment, deception, originality, and audacity to confuse and disrupt decision-making. Surprise is a potent cognitive weapon, causing shock through unexpected action in time and location.

c. **Simultaneity.** Simultaneity seeks to overload the enemy's decision-making by confronting them with a concentration of simultaneous threats, which is achieved through the integration and synchronization of actions and effects. This overloads their ability to understand the situation or prioritize responses, thereby creating a dilemma that effectively paralyzes their C2. By operating simultaneously, the effect is cumulative; the enemy is threatened by so many concurrent threats that they are denied the ability to concentrate on one problem at a time or even establish priorities between them.

d. **Tempo.** Tempo is the rate of action relative to the enemy. Speed and quality of decision-making is key to gaining and maintaining a favourable tempo. Tempo is relative and can be achieved by slowing down the enemy's decision-making cycle through methods like surprise, simultaneity, or disruption of key services and functions.

e. **Exploitation.** Exploitation is the use of success or opportunity to maximise advantages or gains. It means seizing opportunities created by activities to achieve an objective, exploit points of influence, or directly fulfil part of the higher commander's intent. Success is exploited to maintain the initiative, extend and expand its effects, and accelerate the collapse of the enemy's will. Opportunities for exploitation may be fleeting and commanders at all levels should anticipate and seize opportunities as they occur, making mission command critical to exploiting the initiative.

Section 3 – Maritime superiority

Introduction to maritime superiority

3.21 Maritime superiority is the degree of dominance of one maritime force over an adversary that permits the conduct of maritime operations at a given time and place without prohibitive interference. Maritime superiority is achieved through sea control and sea denial operations. Maritime superiority is/may be a dynamic state relative to the adversary. It may be persistent but likely be transitory. Because of the nature and the challenge to maintain maritime superiority, commanders identify where and when they require a favourable situation and surge resources to maximise effects. The key to success is to develop the concept of operations to exploit the adversary's weakness at the appropriate time, when advantage is required. Thus, speed and timing in which the maritime superiority may take place is critical.

Sea control

3.22 Sea control is the condition in which one has freedom of action to use the sea for one's own purposes in specified areas and for specified periods of time and, where necessary, to deny or limit its use to the enemy. Sea control includes the airspace above the surface and the water volume and seabed below. In some cases, it may also require the control of key terrain to influence events seaward.

3.23 Key terrain in a maritime context is any land that affords a force controlling it the ability to significantly influence events at sea and is often associated with coastal areas or islands from which operations can be conducted to control or deny the use of adjacent waters, especially at strategic chokepoints.

3.24 Sea control is the manifestation of lethality afloat and the foundation of maritime superiority and it can never be assumed. Credible maritime combat power is the combination of sea control and power projection, the ability to exploit the sea as manoeuvre space to project influence and power ashore. The ability to control or deny sea space may also be applied to conduct blockades, to deny enemy use of sea lines of communications, or as a means to control crises. As a supporting effort, the joint force can break the cohesion of enemy naval forces by applying lethal and non-lethal fires against its operational functions (e.g., C2, intelligence, surveillance, reconnaissance, targeting, movement, and manoeuvre). The geographical extent of sea control required by the commander may vary from local control of a strategic choke point or concentration of forces to domination of very large sea areas and may or may not be contested. Because of the complexity of the maritime environment, achieving sea control is a more complex task in littoral regions than it is in open ocean areas and requires engagement space dominance over the beach and the necessary inland areas.

3.25 Sea control can be achieved in essentially two ways: defeat of the enemy in port or at sea, or containment of naval forces. Alternatively, adversaries can be contained through deterrence. Additional methods for sea control may be attained by limiting the enemy's ability

to use the information environment through cyberspace attacks. The degree of sea control required, and indeed achievable, depends upon the threat, mission, size, and capabilities of the maritime force. Commanders should consider how long-range weapons, cyberspace, and electromagnetic capabilities may impact efforts to achieve sea control. The need for sea control is not dependent upon the existence of a substantial threat. Even if there is a small risk to freedom of action, the establishment of sea control may be necessary and may require disproportionate effort.

3.26 Sea control operations involve actions to locate; identify; target; and restrict, deter, or deny actions of enemy forces that could inhibit Allied forces' freedom of action throughout the maritime area of operations. In many maritime or joint operations, sea control is a necessary condition to allow use of the sea for further purposes. Gaining the necessary level of sea control is a major component of any Alliance maritime or expeditionary operation. However, there can be no guarantee of protection from attack at sea, and the level and degree of control required should be related to acceptable risk. Sea control operations include establishment of local air and maritime superiority in the maritime area of operations.

3.27 The vastness of the world's oceans makes it impossible for even a preeminent naval power to achieve or maintain global maritime superiority. Thus, achieving local or regional maritime superiority may be desired by the joint force commander for a specific duration to accomplish specific objectives. Sea control can require maritime, air, land, space, and cyberspace forces.

3.28 NATO possesses a multifaceted naval force capable of dealing with opposed access and opposed transit scenarios in blue-, green-, and brown-water environments. Carrier strike groups, amphibious task forces, and associated landing forces, surface combatants, submarines, and other naval forces conduct sea control operations. Although often perceived as conducting operations only in the littorals, amphibious forces, with joint strike fighters, assault support helicopters, and other assets embarked on amphibious warfare ships, conduct sea control operations throughout the maritime area of operations. The amphibious force is most effective at conducting sea control operations when surface combatants, submarines, and other ships are part of a task force, or otherwise supported by joint forces.

3.29 In many other cases, when conducting operations in the littoral (e.g., the protection of ports and anchorages, amphibious operations, or providing support to land operations) sea control should be achieved and maintained up to the shoreline, the port perimeter, or estuary. Control of the air and land may then be required across the shoreline and some distance inshore.

3.30 The maritime commander should have the forces, authority, and determination to use the force accordingly to exercise sea control. In the contemporary operating environment, the political will, and thus, a suitable set of rules of engagement are major factors that need to be addressed during the planning stage of any operation.

Sea denial

3.31 Sea denial is exercised by choosing the times, places, and targets of attack when a force prevents an enemy from controlling a maritime area without being able to control that area oneself. Classic means of achieving sea denial are laying a minefield or deploying submarines to threaten enemy naval forces. Sea denial can be achieved using direct or indirect methods:

a. **Direct approach.** Attacks the enemy centre of gravity or principal strength by applying combat power directly against it.

b. **Indirect approach.** As a main or supporting line of effort to achieve sea denial, the joint force can shatter an enemy fleet's cohesion by disrupting its joint functions (e.g., C2, intelligence, movement, and manoeuvre). The joint force can employ a range of lethal and non-lethal fires to disrupt enemy C2 and land- or space-based intelligence, surveillance, reconnaissance, and targeting. Maritime forces operating ashore, mines, submarines, and obstacles can block enemy ports, delay or disrupt enemy movement and manoeuvre, or deny access to chokepoints or amphibious operating areas. Strikes, maritime raids, or direct action assaults on fuel depots, magazines, or repair facilities can disrupt the enemy's ability to sustain fleet operations. An indirect approach focuses on neutralizing critical requirements associated with the centres of gravity. At the operational level, the most common indirect method of defeating an enemy's centres of gravity is to conduct a series of attacks against selected aspects of the enemy's combat power. For example, the MCC may sequence combat actions to force an enemy to divide its forces, destroy the enemy's reserves or elements of the enemy's base of operations, or prevent or hinder the deployment of the enemy's major forces or reinforcements into the area of operations.

Relationship between sea control and sea denial

3.32 Sea denial and sea control operations are not mutually exclusive and may complement each other. The degree of denial of the enemy's freedom of action is typically proportional to the degree of effective sea control. Denial operations in one part of the maritime area of operations may be necessary to achieve sea control elsewhere. In a multi-threat environment, where maritime forces may encounter sea mines or be attacked by surface units, submarines, aircraft, landlaunched weapons, and maritime unmanned systems, each warfare area must succeed if sea control is to be achieved.

3.33 Coordinated actions create a considerable synergy that increase the likelihood of success. Each warfare area has its own unique characteristics, and, thus, different objectives and priorities that lead to conflicting requirements that are resolved by the MCC if unresolved at lower levels. In the absence of sea control, the tactical situation may require denial of the sea to achieve operational objectives.

3.34 As part of power projection and sea control, operations can be directed against enemy forces involved in sea denial operations. The indirect approach (e.g., attacking a mine depot) offers the possibility of bringing an offensive and preemptive element to bear far beyond the limits of defensive and reactive operations.

Forcible entry

3.35 Forcible entry operations provide the opportunity to seize and hold lodgments against armed opposition. A lodgment is a designated area in a hostile or potentially hostile area of operations (e.g., an airhead, a beachhead, or combination thereof) that affords continuous landing of troops and materiel while providing manoeuvre space for subsequent operations. The lodgment and the means to seize a lodgment depend upon the objectives of the operation or campaign. In most operations, forcible entry secures the lodgment as a base for subsequent operations. It often has facilities and infrastructure that may be used to receive large follow-on forces and logistics. In some operations, seizure of the lodgment may be the primary objective, and its retention lasts only until the mission is complete, at which time the assaulting forces withdraw. Forcible entry operations are inherently risky and usually joint, requiring land and air forces to assist in securing the lodgment. Forcible entry demands careful planning and thorough preparation; synchronized, violent, and rapid execution; and leader initiative at every level to deal with friction, chance, and opportunity.

3.36 Naval forces, in particular a carrier strike group, may launch strikes to shape the littorals prior to the arrival of the amphibious force into the amphibious objective area. Local maritime superiority is required to project power ashore in support of the forcible entry operation and to protect sea lines of communication. Sea lines of communication protection enables logistic support required to sustain operations ashore and support the transition to continuing operations by follow-on forces. Defeating the threat in the littorals typically requires a naval force that is prepared for sustained defensive and offensive operations.

3.37 An amphibious force is composed of an amphibious task force and a landing force, together with other forces that are trained, organized, and equipped for amphibious operations and conduct littoral manoeuvre by vertical and/or surface means. Amphibious forces seek to exploit gaps in the enemy's defences to secure key objectives associated with establishing a lodgment. In addition to serving as a forcible entry assault force, such forces are capable of conducting follow-on operations from the lodgment. Amphibious forces may also be inserted as follow-on forces. An amphibious force with a forcible entry capability may be forward-deployed to quickly initiate or join other forces in a forcible entry operation or as a show of force.

Striking the enemy in port

3.38 Sea control can also be obtained by destroying an enemy fleet in port. This can be done singularly or by combining maritime strikes, ground assaults, or special operations direct action raids. These types of attacks are usually synchronized with other joint operations in the theatre to maximise strategic or operational effects. A mission to destroy an enemy fleet in port generally requires surprise, or the enemy fleet may escape before the attack can be

delivered. Surprise is achieved through speed; stealth; deception; countering-intelligence, -surveillance, -reconnaissance, and -targeting; and operations security. Strikes are most effective when used in combination with mines, obstructions, submarines, or other capabilities deployed in a position to prevent the enemy fleet's escape.

Commerce warfare

3.39 Ninety percent of the world's trade travels by sea and 99 percent of international Internet traffic travels by undersea cables. Twenty five percent of the protein consumed in the world has origins in the sea. Much of the world's fossil fuels are shipped by sea from oil rich nations, and may be subject to interdiction. When directed, maritime forces can interdict these resources through blockades; control of key chokepoints; declaration of maritime exercise or danger zones; use of fishing fleets to prevent ships from fishing in their own economic zone, overfishing, and mining a nation's economic zone; or by maritime interdiction operations. The joint force can initiate a close blockade using difficult to detect capabilities (e.g., obstructions, mines, surface ships, or submarines). Surface ships are more suited to blockades, particularly around key strategic chokepoints. Land forces can also establish blockades in narrow chokepoints if equipped with sensors and antiship capabilities. Naval platforms can host boarding teams or special operations forces to conduct visit, board, search, and seizure operations to seize enemy commercial vessels and enemy ships. It does not require a high-end capability to rapidly convert merchants into offensive military platforms by adding containerized modules (e.g., electromagnetic warfare sensors and antiship cruise missiles).

Maritime raids

3.40 Maritime raids are an additional method to exercise sea control. Maritime raids can generate strategic or operational effects far greater than the effort or resources expended. Maritime raids are characterized by a swift incursion into the objective area followed by a planned withdrawal. The joint force can conduct maritime raids using a range of capabilities, including air, naval, amphibious, and special operations forces.

Fleet-in-being

3.41 A nation might choose, or be forced, to adopt a strategy of fleet-in-being. By avoiding confrontation with a superior enemy, a nation can hold back its own maritime forces while continuing to threaten those of the enemy. The risk of attack complicates the opposition's options and prevents them from taking the initiative elsewhere. The threat from a fleetinbeing can prevent superior opposing forces from establishing their desired level of sea control by diverting forces to other tasks (e.g., blockade or containment) and, as such, is a method of sea denial. A fleet-in-being can compel a superior force to concentrate their forces in a valuable area or around valuable units, or cause them to route their passage to their disadvantage or to amend their operation plans (OPLANs).

> *During World War II, the Tirpitz was a German battleship that never saw much action in combat but was still considered a significant threat to the Allied forces. The Tirpitz was part of a naval strategy known as a "fleet-in-*

being," which meant that even if the ship did not actively engage in battle, its mere presence posed a threat to the enemy. The Allies were forced to divert resources and manpower to monitor and contain the Tirpitz, limiting their ability to conduct operations elsewhere. The Tirpitz was eventually sunk by British bombers in 1944, but its status as a "fleet-in-being" demonstrated the strategic importance of having a powerful naval presence.

Concentration of forces

3.42 The attributes of maritime force may enable a weaker opponent to evade a superior's concentration of force; indeed the greater the concentration, the easier it may be to evade. Sometimes dispersion, or the pretense of dispersion, is a better way of luring a weaker opponent into battle. The more a maritime power concentrates its resources, the greater its potential to exert sea control in its area of operations. By concentrating a maritime force, it may not only deter a weaker opponent from seeking battle but may also discourage them from attacking elsewhere.

Section 4 – The maritime contribution to joint operations

3.43 In addition to activities inherent to maritime operations (e.g., fleet air defence, antisurface warfare, amphibious warfare, and antisubmarine warfare), the joint force commander may task the MCC with support responsibilities to other functional component commanders. This support may include integrated air and missile defence support, joint fire support, interdiction, and strategic attack. Supported commanders should understand that maritime platforms are multi-mission capable and are routinely tasked to support different missions and warfare commanders. They are rarely made available for tasking outside the maritime component because their multi-mission capabilities require them to fulfil activities inherent to maritime operations as well as supporting operations.

Maritime support to and from the air component commander

3.44 The MCC may request support from the ACC for maritime operations. The ACC can support the MCC in achieving maritime superiority by providing overwhelming air power in support of the MCC objectives. Air component forces can, for example, attack maritime surface and subsurface targets; conduct aerial mining; provide intelligence, surveillance and reconnaissance data; and conduct countering-intelligence, -surveillance, -reconnaissance, and -targeting activities. They are normally assigned under tactical control to either the antisurface warfare commander or antisubmarine warfare commander.

3.45 In exceptional circumstances a commander from any component can request immediate support directly from the MCC. If imminent danger to own forces occurs or a time-sensitive target appears, a re-tasking of units can be done at the discretion of the commander holding tactical control. For unforeseen support the ACC is more likely to task air sorties that have fulfilled their original tasking but still have fuel and munitions left to react to any additional task. Tasking of aircraft to respond to immediate requests would be accomplished through the use of a written or verbal tasking order to an aircraft.

3.46 The joint force commander normally designates a single authority to coordinate joint air operations and integrate air capabilities. Based on the complexity and scope of operations, the joint force commander can either retain authority or designate an air component command to conduct joint air operations. The ACC is usually chosen from the component with the preponderance of air assets and the necessary C2 systems to plan, task, and execute air operations. Air, maritime, and land forces assigned to operations are likely to include air forces that individual component commanders may make available for joint air operations. These forces are tasked directly by the ACC, according to the joint force commander's air apportionment plan. Should a component not have the organic air forces to support its assigned mission, it may request support from the ACC. The maritime force benefits from and contributes to the joint air and missile defence plan using surface-based and organic airborne early warning, fighter aircraft, and ships armed with surface-to-air missiles, theatre ballistic missile interceptors, long-range search radars, and electromagnetic warfare systems. The MCC and ACC normally provide mutual support in defensive counter-air, airborne early warning, strike warfare, antisurface warfare, and antisubmarine warfare.

3.47 The MCC sends liaison/coordination elements to the air component command. The basic guiding principle for coordination between the air component command and maritime component command is to ensure that each component's air missions appear on the air tasking order in as much detail as possible, especially where support (e.g., air-to-air refuelling) is required, and that the airspace requirements are included in the airspace control order.

a. At the operational level, the maritime air liaison element integrates the maritime plan with that of the air component command, thereby ensuring an effective and efficient joint execution of the joint force commander's OPLAN. The maritime air liaison element is integrated in the air component command to provide maritime air input into forward planning and to ensure that the apportionment of air assets reflects the joint force commander's priorities. Additionally, the maritime air liaison element should ensure that the airspace requirements of maritime air assets are represented in the airspace coordination order.

b. The maritime coordination element coordinates directly between the joint force air component headquarters (JFAC HQ) combat operations divisions and the maritime component's battle staff at the tactical level. The maritime coordination element provides expertise and liaison on naval matters relevant to tactical air planning, tasking, and execution and monitors and evaluates the maritime situation. The maritime coordination element also advises on planning and execution of air operations in support of naval operations and units and identifies and provides analysis of naval operations in support of current and future air component operations. Additionally, if a control and reporting centre is designated to execute tactical control over a maritime unit in coordinated air/sea procedures, the presence of a qualified maritime coordination element at this control and reporting centre is a precondition.

c. The maritime air coordination element provides the air component with maritime air input for the development and execution of the air tasking order, in accordance with the direction provided in the air operations directive and in consultation with the maritime coordination element. Maritime air coordination element personnel are assigned roles within both the JFAC HQ combat plans and operations divisions. The maritime air coordination element provides subject matter expertise for the planning, tasking, and execution of maritime air operations, as well as coordinate with all task force maritime air operations centres to ensure all maritime air inputs are integrated into the air operations directive and air tasking order.

d. The ACC also sends liaison elements to MCC. The air liaison element provides intercomponent coordination at the operational level. The ACC would, if deemed necessary, also dispatch an air operations coordination centre (maritime) to provide an air entity, functionally subordinate to the JFAC HQ, collocated with and an integral part of a maritime task force. The air operations coordination centre (maritime) provides air expertise and integrates the liaison and coordination functions relating to air operations, including, but not limited to, air power contribution to maritime operations.

3.48 The maritime component possesses a maritime air operations centre that is the planning and execution element for maritime air operations. It is subordinate to the MCC and can task organic air assets in direct support of the maritime component command. The maritime air operations centre provides air tasking order inputs to the joint forces air component battle staff and plans, coordinates, executes, monitors, and assesses the maritime air portion of maritime operations. A maritime air operations centre can be established within the static maritime command headquarters, within an existing national NATO force structure organization ashore, or with the task force afloat, as determined by operational requirements.

3.49 Joint air operations do not include air forces organic to a component and used by that component solely in pursuit of its own operations to accomplish its assigned mission. Notwithstanding, these organic assets should appear on the air tasking order to enable coordination and minimize the risk of friendly fire; however, their appearance on the air tasking order neither implies any command or tasking authority over them, nor does it restrict component commanders' flexibility to respond to changing engagement space dynamics. Component air forces not available for joint air tasking adhere to the guidance provided by the airspace control plan, the airspace control order, the air and missile defence plan, and special instructions to assure integration and minimize the risk of friendly fire.

3.50 The officer in tactical command exercises tactical command of all embarked aircrafts, coordinates all friendly air movement within the force air coordination area and ensures that airspace requirements are coordinated with the airspace control authority and that airspace control orders are adhered to.

3.51 The joint force commander normally designates the ACC as the supported commander and the MCC as a supporting commander for air and missile defence. The individual designated to be the ACC is also normally designated the air and missile defence

commander. On behalf of the joint force commander, the area air and missile defence commander coordinates air and missile defence planning across the joint force. The MCC may recommend establishing a subordinate regional or sector air defence commander for the maritime portion of the joint operations area. The MCC normally exercises operational control of maritime forces, to include multi-mission air and missile defence-capable ships, and transfers tactical control of multi-mission ships with air and missile defence capability to a subordinate commander. The MCC has the expertise to employ assigned and attached naval forces to achieve mission objectives. Air and missile defence-capable ships are normally provided in direct support with mission-type orders.

Maritime support to and from the land component commander

3.52 The MCC may be directed by the joint force commander to support the land component command through various means, to include amphibious operations, sea-based strike warfare, and maritime prepositioned forces. Maritime forces can also contribute significant intelligence, area surveillance, and communications capabilities to land forces. Maritime platforms (e.g., aircraft carriers, largedeck amphibious warfare ships, and dedicated hospital ships) can support evacuations, medical treatment, and the return to operations. Maritime forces can protect land forces by providing a sea-based defensive barrier or by preventing enemy manoeuvre from the sea.

3.53 As the maritime fight may become more predominate in future warfare, the MCC may request support from land forces. Land forces could be requested to:

- provide fire support for maritime forces;
- provide air support for the maritime force; and
- aid in identifying enemy units operating near to shore or in the littorals.

Within the maritime area of operations, the MCC authorises surface combatant engagements by other components. A constantly changing high-density maritime air operating environment in the littorals requires careful and constant deconfliction for safety of flight. Land forces should be aware that weather conditions can change rapidly, and unique maritime environmental factors (e.g., wave height and sea spray) may affect visibility and radar or sensor effectiveness of platforms and weapons systems.

3.54 Amphibious operations require coordination between the elements of the amphibious task force, the landing force, the land component (if any), and supporting forces at every level. This dictates that careful consideration is given to the formation of task groups and command structures to provide unity of effort.

3.55 **Sea-based joint fires.** Maritime-based aircraft contribute to joint fires by filling roles, such as close air support and air and maritime interdiction. Submarines and surface ships armed with landattack missiles or conducting fire support contribute to attacks on shore targets. Maritime forces can provide fire support to all operations within range of the sea,

which may be especially important in the early stages of an operation before land forces have fully deployed. Maritime forces can continue providing fire support to land units in situations where the footprint ashore is minimalized to only essential units (i.e., when conducting joint seabased operations).

3.56 **Maritime pre-positioning force.** Some nations possess the capability to pre-position equipment and supplies to support NATO operations. A maritime pre-positioning force enables all operations through any phase. When combined with the forces and their equipment arriving in the fly-in echelon, pre-positioning programmes provide forward-deployed equipment and supplies needed to sustain an amphibious expeditionary brigade-sized force for up to 30 days of operations, thus reducing total strategic lift requirements. Close coordination is required between the amphibious force and the land component command staff during a maritime pre-positioning force operation.

3.57 A maritime pre-positioning force is an option for the deployment of land forces made available to a land component command. The maritime pre-positioning force is assigned to a functional or service component commander as appropriate and perhaps based on the phase of the operation. For example, the deployment order may assign the maritime pre-positioning force to a maritime component command during transit and then transfer the maritime pre-positioning force to the land component command upon reaching the port of debarkation within the land component command's area of operations.

3.58 **Maritime support to urban operations.** Depending on the strategic objectives pursued, urban operations can take different forms, ranging from high-intensity conventional warfare to low-intensity combat, counter-insurgency, stabilisation, or military contribution to humanitarian assistance. Combat operations in urban areas are primarily defined by three factors: physical terrain, population, and infrastructure. The most important challenge in urban combat operations, however, is the presence of civilians. Conventional armed forces operating in urban areas are constrained by human, legal, and strategic considerations relating to the presence of civilians at the heart of combat zones.

3.59 Maritime forces (e.g., riverine forces, expeditionary forces, and coast guards) can protect strategic port facilities and strategic commercial shipping and naval ships in harbour approaches, at anchorages, and in ports, from bare beach to sophisticated port facilities, to ensure the uninterrupted flow of cargo and personnel to the joint force commander. These forces protect assets from waterborne and land-based threats. In urban areas that also house key port facilities, security of the port, port-related infrastructure, and the riverine and seaward approaches to the port are important for numerous reasons. For example, sea ports facilitate the flow of follow-on forces and sustainment (e.g., reception, staging, onward movement, integration, logistic distribution, evacuation, and maintenance). Additionally, ports support the flow of sustainment to the local population as well as the raw materials and finished products that support their economy, not to mention the large employment opportunities provided by the operating port and ancillary jobs base (e.g., warehousing, trucking).

For additional information on urban operations, see ATP-94, *Harbour Protection* and ATP-3.2.1.2, *Conduct of Land Tactical Operations in Urban Environments*.

Maritime support to and from special operations forces

3.60 Special operations forces are a scarce and valuable resource who should be employed with caution and in accordance with clear guidelines from the joint force commander. Special operations forces may require transport on or insertion to a location from maritime assets. Special operations forces may be embarked on board maritime assets to conduct operations as required by the joint force special operations component commander. When SOF operate directly in the area of operations of maritime forces, or when the likelihood of integrated or converging operations with maritime forces is probable in a joint operations area, the special operations component command commander may establish a special operations command and control element on board, to plan, synchronize, deconflict, and coordinate operations with conventional forces. Maritime forces may provide sustainment and fire support to the special operations units in the joint operations area. Maritime special operations forces conduct three principal tasks, military assistance, special reconnaissance and direct action. They may be focused on, but not restricted to, the following activities beach reconnaissance (hydrographic survey) in advance of an amphibious operation, route preparation in advance of an amphibious operation, coastal reconnaissance, coastal raids, ambushes, and assaults, including opposed boarding operations, recovery of ships and maritime installations, and maritime counterterrorism.

3.61 The special operations component command may dispatch a liaison element with appropriate communications means to the maritime component command as necessary. Conversely, the special operations component command may receive liaison elements from the maritime component command, particularly in the event of tactical-level integrated or converging operations between special operations forces and conventional forces, or when there is a supported/supporting relationship between the special operations component command and the maritime component command. The size, duration of employment, and scope of duties of these liaison elements vary according to their assigned functions.

3.62 Synchronizing maritime component command conventional forces and special operations forces offers unique capabilities, which may be necessary to achieve operational- or component-level objectives. Synchronization and interoperability enable the operational-level commander to take advantage of maritime component command capabilities and special operations forces core competencies and systems. Proper synchronization of conventional forces into special operations forces actions, depending on the supported/supporting relationship through effective coordination and liaison, can produce a greater effect at a higher tempo with less potential for friendly fires than if operating separately.

For additional information on special operations, see AJP-3.5, *Allied Joint Doctrine for Special Operations*.

Maritime support to and from space forces

3.63 Space operations provide support to operations in other domains, while often simultaneously requiring support to ensure the continuity of providing those space capabilities.

3.64 Satellite communications provide global communications and data (information) transmission to dispersed forces in austere environments. Satellite communications also provide critical connectivity for tactical manoeuvre forces and disadvantaged users whose rapid movement and geographically dispersed deployments remove them from direct access to terrestrial communications infrastructures. The inherent capabilities of satellite communications provide significant advantages over other communications systems, including global coverage; near-real-time, over-the-horizon transmission of voice and data; independence from terrestrial communications architecture; and flexibility.

3.65 Space-based positioning, navigation, and timing capabilities significantly reduce collateral damage from friendly fires, as many types of guided munitions and friendly force tracking devices use them for increased accuracy. Positioning, navigation, and timing further supports movement and manoeuvre of forces and assets and is integral to accurate C2, operations and intelligence.

3.66 Space-based intelligence, surveillance and reconnaissance collection platforms provide the advantages of mission longevity and coverage over denied areas where terrestrial, maritime, or airborne sensors may not be able to collect data. Space-based intelligence, surveillance and reconnaissance collection operations contribute to C2, enhancing the joint force's ability to observe areas of interest, understand the threat, and increase situational awareness.

3.67 Space-based environmental monitoring provides terrestrial information on meteorological and oceanographic factors that affect military operations in land, maritime, and air domains. Space-based environmental sensing supports the development of meteorological and oceanographic forecasts and assessments of environmental impacts on both friendly and threat military systems and operations. A prime advantage of space-based environmental monitoring is the ability to gather data in remote or hostile areas, where little or no data is available via surface reporting stations. For example, space-based environmental data is critical over most oceanic regions, where terrestrially observed data is often sparse.

3.68 Offensive space operations targeting an enemy's space capabilities and forces could employ reversible (e.g., jammers to disrupt the positioning, navigation, and timing signal for precise targeting) and/or non-reversible means (e.g., destruction of an anti-satellite launch site). Maritime forces may be requested to support offensive space operations to ensure the availability of critical space capabilities.

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Chapter 4 – Maritime command and the maritime component commander

Section 1 – North Atlantic Treaty Organization maritime organizational structure

4.1 Allied Command Operations commanded by Supreme Allied Commander Europe (SACEUR) consists of Supreme Headquarters Allied Powers Europe, joint force commands, theatre components, and supporting organizational elements.

Supreme Headquarters Allied Powers Europe

4.2 Supreme Headquarters Allied Powers Europe is the strategic-level command that plans, prepares, and executes North Atlantic Treaty Organization (NATO) military operations, missions, activities, and tasks to deter, defend, restore, and preserve peace, security, and the territorial integrity of Alliance member states and prevent conflict and project stability beyond SACEUR's area of responsibility.

Operational-level commands

4.3 The operational-level consists of three standing joint force commands: Allied Joint Force Command Naples, Allied Joint Force Command Norfolk and Allied Joint Force Command Brunssum. All have to be prepared to plan, conduct, and sustain NATO operations of different size and scope. Effectively, they need to be able to manage a major joint operation, either from their static location or from a deployed headquarters, when operating directly in a theatre of operation. In the latter case, the deployed headquarters is referred to as a joint task force headquarters and should be able to operate for a period of up to one year.

Allied Maritime Command

4.4 **Allied Maritime Command.** Allied Maritime Command (MARCOM), as part of the Allied Command Operations headquarters structure, is the theatre maritime campaign coordinator and is the operational maritime centre of the Alliance. MARCOM operates and fights across the competition continuum of maritime and operations, as well as advises SACEUR, as the principal maritime advisor, from seabed to space.

MARCOM provides operational maritime command and control (C2), as combined forces maritime component commander (MCC), and coordinates the maritime domain as maritime theatre component commander. As the combined forces maritime component commander, Commander MARCOM provides operational maritime C2, commanding maritime theatre assets including submarines and maritime aircraft. When directed by SACEUR, MARCOM provides the subordinate maritime component commands to joint force commands, supporting the joint forces commands by translating their joint-level operational requirements into maritime tactical effects and actions, to enable theatre wide maritime planning and enable joint multi-domain coherence from peace, through conflict to war.

4.5 Dedicated command elements integrated in MARCOM are:

a. **Commander Submarines NATO.** On behalf of MARCOM, Commander Submarines NATO serves as the coordinating authority with other NATO commands and national authorities on submarine matters and as NATO submarine operating authority, executes operational control on submarines assigned. Commander Submarines NATO also retains the responsibility for safety of submarine operations as NATO submarine movement advisory authority within the NATO area of responsibility.

b. **Commander Maritime Air NATO.** On behalf of MARCOM, Commander Maritime Air NATO serves as the coordinating authority with other NATO commands and national authorities to employ maritime air assets under its operational control. Commander Maritime Air NATO exercises C2 of land based or organic maritime air assets allocated to him/her. He/she also directs and facilitates the integration of maritime air assets into the joint battle space.

c. **Commander Surface Forces NATO.** On behalf of MARCOM, Commander Surface Forces NATO is responsible for the execution of operational and tactical plans and for the effective C2 of assigned surface forces, as well as the development of intelligence and situational awareness throughout NATO's maritime area of interest.

4.6 Notable dedicated staff elements integrated in MARCOM are:

a. **NATO Shipping Centre.** The NATO Shipping Centre within MARCOM is the primary point of contact in NATO for the broader maritime community, including commercial maritime shipping organizations/ agencies. It provides information exchange on merchant shipping matters and facilitates voluntary cooperation between NATO and commercial shipping operators. The NATO Shipping Centre collects and processes merchant shipping information, developing an understanding of merchant shipping activities in areas of interest, to facilitate and deconflict from military operations, and equally advise merchant shipping about the evolving situation.

b. **NATO Maritime Centre for the Security of Critical Undersea Infrastructure.** The NATO Maritime Centre for the Security of Critical Undersea Infrastructure supports allies in their national responsibility to protect their respective critical undersea infrastructure. It provides critical undersea infrastructure related situational awareness in the maritime domain and assists in the identification and possible mitigation of strategic vulnerabilities. It serves as a platform for operational-level information exchange among the critical undersea infrastructure-network 'community of trust', in order to deter, defend and optimise potential responses against the coercive use of energy and other hybrid tactics by adversaries.

4.7 Maritime portions of the NATO Response Force include:

- Standing naval forces that provide a continuous maritime capability to conduct operations, missions, and activities; and
- Naval Striking and Support Forces NATO that provide the Alliance a readily available, sea-based expeditionary force headquarters.

Section 2 – The nature of command

Command and control of maritime forces

4.8 The C2 structure of maritime forces is based on the mission and concept of operations; available forces; and staff composition, location, and facilities. It is shaped by the characteristics and complexity of the maritime operating environment and the traditions and independent culture of maritime forces. In developing the C2 structure the commander should consider:

a. **Simplicity.** Unity of command is maintained through an unambiguous chain of command, well-defined command relationships, and clear delineation of responsibilities and authorities.

b. **Span of control.** The authority and direction over assigned or attached forces varies depending on the mission and the ability to control the actions required. Span of control is based on many factors, including number of subordinates, number of activities, range of weapons systems, forces assigned or attached, size and complexity of operational area, and the method used to control operations (centralized or decentralized).

c. **Unit integrity.** Subordinate forces should remain organized as designed and in the manner accustomed through training to maximise effectiveness.

d. **Interoperability.** The C2 capabilities between higher, adjacent, and subordinate commands are interoperable.

4.9 The maritime force frequently changes with units joining and leaving a core group. These, in turn, could be dispersed over a wide area and be required to operate with many different nationally imposed limitations. To complicate the task further, submarines, aircraft, and mine countermeasure vessels that, by their operational nature, have limited communication facilities that remove a commander's ability to reissue further instructions over protracted periods of time. Additionally, whether commanders are supported or supporting may change as an operation develops, noting that they could be both simultaneously. This is particularly important in the undertaking of amphibious operations. In common with land and air forces, the maritime force is likely required to share the same area of operations with

neutral parties, both civilian and military, who are not constrained by any Allied imposed limitations and who are likely to use the full weight of international law to continue their own activities, be they counterproductive or not to the efforts of the MCC and assigned forces.

4.10 The joint force commander may designate an MCC to exploit the full maritime capabilities available to the joint force and reduce span of control. The MCC plans, coordinates, allocates, tasks, executes, and assesses maritime operations to accomplish joint force commander objectives.

4.11 Maritime forces are organized functionally into a task organization consisting of four levels: task forces, task groups, task units, and task elements. The use of these levels is flexible. See Figure 4.1.

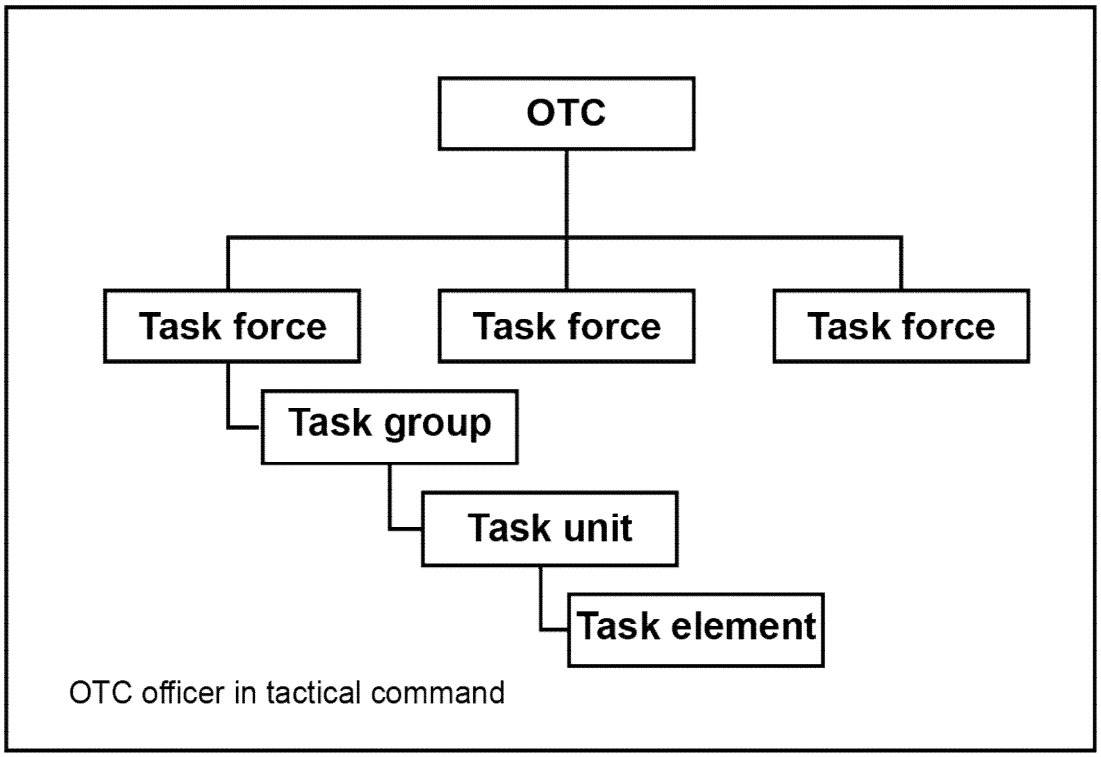

Figure 4.1 – Hierarchy of tactical formations

Command authority, responsibility, and accountability

4.12 **Command embraces authority, responsibility, and accountability.** It has a legal status and is vested in a commander by a superior commander. Authority enables an individual to influence events and to order subordinates to implement decisions and take specific actions. While commanders can delegate specific authority, they retain overall responsibility for their commands; responsibility is, thus, fundamental to command. Accountability involves a liability and obligation to answer for the proper use of delegated

authority and resources; it includes the duty to act. Thus, the authority granted to a subordinate should be commensurate with the task given; the subordinate, meanwhile, remains accountable to their superior for its execution.

Command and control in the context of multi-domain operations

4.13 The complexity of multi-domain operations makes establishing an adequate C2 structure challenging. The C2 structure should facilitate increased data collection and information sharing. Commanders should consider the provision of multi-domain capabilities to subordinate commanders at all levels of operations with the requisite agile and adaptable posture, authorities and resilience to enact the manoeuvring approach, and mission command. Additionally, during specific operations across domains, commanders and their staffs need to coordinate with their partners and achieve coherent activities across the levels of operations also outside their joint operations area. This could also involve capabilities that they may not command nor control.

Section 3 – Specific maritime command considerations

National caveats

4.14 When allocating forces to NATO, nations may specify restrictions on their employment. This may include rules of engagement-related issues, instructions to maintain national task group integrity, or restrictions generated by the interpretation of international law. Such restrictions may have an impact upon the maritime component command's flexibility of employment.

Command of task force operations

4.15 Potential threats to freedom of the seas and/or operations executed in the littorals may dictate the use of a task force instead of a single task group. For example, strike operations against a significant threat may require multiple aircraft carriers and amphibious task forces acting in concert.

4.16 In maritime usage, the officer in tactical command (OTC) is the senior officer present eligible to assume command, or the officer to whom has been delegated tactical command. When a task organization is established, the OTC shall be named in the establishing directive. If the OTC is unable to exercise command, the next senior officer present in the task organization eligible for command assumes and retains command unless otherwise ordered. When a task organization has not been established and the higher authority has not selected the OTC, the senior officer present eligible to assume command acts as the OTC. The OTC is normally under the operational control of the MCC. The maritime component command provides direction that specifies the mission, tasking, and forces assigned to the OTC and are also delegated tactical C2 of those forces to the OTC. The MCC may self-designate as the OTC of the constituted force(s) or group(s) or the task force/task group commander. Subject to the scope of the maritime operation, multiple OTCs may be assigned by the

maritime component command for discrete groups tasked with separate missions. The OTC designs the C2 organization to accomplish the assigned mission and effectively defend the force. Some functions arising from direction, coordination, or control may be delegated to subordinates.

Command of maritime air operations

4.17 Maritime air assets are an integral part of the maritime component and may be used to support the joint operation. In a joint operation, the maritime component command provides the joint force air component headquarters (JFAC HQ) with an air tasking order feeder of maritime air operations priorities and objectives. Excess maritime air sorties are offered to the air component commander (ACC) for tasking. The maritime component command retains operational control of maritime air assets, deconflicts with air component operations, and delegates tactical command/tactical control as appropriate. Maritime air assets might be apportioned by the joint force commander to the ACC for tasking.

4.18 Air assets supporting geographically limited operations (e.g., an antisubmarine warfare helicopter conducting screening operations or tactical air lift assets inside an amphibious objective area) operate under tactical command of the respective OTC. Such air movements are scheduled via the appropriate messages and, if applicable, should be mirrored in the respective air tasking order. All aircrew and unmanned aircraft operators should adhere to approved operational procedures. Typically, these procedures are promulgated by the ACC in the special instructions annex of the air tasking order. Besides the command and supported/supporting relationship, the guiding principle for coordination between the air and maritime components ensures that each component's air assets appear on the air tasking order in as much detail as possible and that the airspace requirements are realised and integrated.

4.19 Forces from other components requested by the MCC to support maritime operations are under the tactical control of the MCC for further tasking.

For additional information on air-maritime coordination see AJP-3.3.3, *Allied Joint Doctrine for Air-Maritime Coordination*.

Command in submarine operations (submarine operating authority)

4.20 Underwater operations require a theatre-wide command system to prevent fratricide and mutual interference and to ensure unity of effort in this complex environment. Underwater operations include independent and coordinated operations of submarines, unmanned underwater vehicles, maritime patrol aircraft/helicopters, and surface combatants. In all types of underwater operations, the submarine operating authority is the command designated to manage water space and prevent mutual interference.

ATP-18, *Allied Manual of Submarine Operations,* provides extensive elaboration on submarine C2 and the various methods by which submarine support operations are conducted.

Command in amphibious operations

4.21 In amphibious operations, the overall C2 relationships developed by the joint force commander or MCC needs to be flexible to account for the differing amphibious C2 structures used within NATO countries. The C2 relationships and organization described within this section may require modification to enable the amphibious force to accomplish its assigned mission. The organization and relationships chosen by the joint force commander are based on the mission, nature and duration of the operation, force capabilities, C2 capabilities, engagement space, and recommendations of subordinate commanders having close and continuous coordination during planning. The overall intent is not to limit the joint force commander's or MCC's ability to organize the force or to establish necessary C2 relationships (i.e., tactical command, tactical control, or support), rather, to clearly describe how the various forces should carry out amphibious C2 whilst highlighting the need for flexibility in the development of C2 relationships between the commander, amphibious task force, commander, and landing force and other commanders.

4.22 The variety of amphibious C2 constructs utilised within NATO countries for the commander amphibious task force and commander landing force include, but are not limited to, the amphibious task force commander with overall authority, a support relationship between commander amphibious task force and commander landing force, and an integrated staff.

For additional information on the command relationships during amphibious operations, see ATP-08, Volume I, *Doctrine for Amphibious Operations.*

Section 4 – Command during support operations

Support situations within maritime forces

4.23 Occasions may arise when one maritime force provides support to another maritime force. The establishing authority specifies the degree, manner, and duration of support that forces provide each other. The supported commander provides the supporting commander with the necessary information concerning the situation and the mission of the supported force in sufficient time to plan for the support that is needed. The commander ordering the support indicates which of the following relationships apply. Table 4.1 depicts the various types of support that may be used between maritime forces.

Support situation ALPHA	Two or more forces join into one force. The supporting force is to join and integrate with the other force. The senior officer present, or the officer to whom tactical command is delegated, is to become the officer in tactical command of the force.
Support situation BRAVO	Two or more forces remain separate. A single officer in tactical command directs actions of all forces. The supporting force does not integrate. Unless otherwise ordered, the senior officer in tactical command of the two forces is to coordinate the tactical operations of all forces.
Support situation CHARLIE	Two or more officers in tactical command coordinate actions.

Table 4.1 – Support situations

Other types of support within maritime forces

4.24 Other support may be in one of four forms. Individual units may be assigned to provide support to forces at sea.

a. **Area operations.** Area operations are normally conducted in a geographic area not related to the protection of a specific force. Areas may be related to the protection of maritime forces scheduled to enter the area or to provide defence in depth to distant forces. Tactical command of units conducting area operations remains with the establishing authority.

b. **Associated support.** A unit assigned in associated support operates independent of the supported force but may be tasked to provide contact information to and receive intelligence from the OTC who is being supported. The designated unit operates under the tactical control of the establishing authority who coordinates the tasking and movement of the supporting unit in response to the supported OTC's requirements.

c. **Direct support.** The support provided by other units not attached to or under the command of the supported unit or formation but required to give priority to the support required by that unit or formation. A unit assigned in direct support operates under the tactical control of the supported OTC. Operational command and tactical command remain with the establishing authority. The direct support unit reports to the designated controlling authority for employment.

d. **Integrated operations.** Integrated operations are those operations in which a designated unit provides support to a specific task force/task group, operating directly under its tactical command and tactical control. During integrated operations, the assigning authority retains operational control.

Section 5 – Tactical command at sea

Introduction to tactical command at sea

4.25 The OTC is responsible to the MCC or other superior commander as applicable for accomplishing the assigned mission or task. The OTC may assign a composite warfare commander for the overall direction and control of defence of the force. The OTC/composite warfare commander may delegate authority for principal warfare areas to designated warfare commanders.

4.26 Subordinate to the OTC/composite warfare commander the five principal warfare commanders are: anti-air warfare commander, antisurface warfare commander, antisubmarine warfare commander, strike warfare commander and information warfare commander. The principal warfare commanders collect and disseminate information and, in some situations, are delegated authority to respond to threats with assigned forces.

4.27 Coordinators are asset and resource managers. They conduct air coordination, electromagnetic and acoustic warfare coordination, surveillance, and naval mine warfare coordination. They carry out the policies of the OTC/composite warfare commander and respond to specific tasking of the warfare commanders. Coordinators may also exercise control of specified forces.

Officer in tactical command responsibilities

4.28 The OTC defends the force and executes the assigned mission. The OTC's policy and procedure for succession of command authority, as well as designation of the standby OTC, should be specified by orders in advance of the operation. The chain of command between the OTC and, when designated, the composite warfare commander, principal warfare commanders, coordinators, supporting commanders, and the forces under their tactical command/tactical control, shall be specified by the OTC. This may be done by task number designation or by stipulating which task groups, task units, or task elements are designated for each commander. The OTC's responsibilities cannot be delegated. The OTC generally delegates the detailed planning of operations to the principal warfare commanders.

4.29 **Authority and responsibility.** The OTC may retain tactical command and tactical control authority or may delegate some of that authority (i.e., tactical control) to subordinate commanders and coordinators. In deciding what degree of control is to be delegated, and when, the OTC should observe one cardinal principle: to operate effectively, each unit and command should know in detail its obligation to the OTC, warfare commanders and coordinators, and other units. To achieve this, it is essential that the OTC clearly specifies the chain of command. Although control of different force weapons systems in a single ship may be delegated to different warfare commanders, only one commander may exercise control over the movements of an individual unit at any one time. Should it be necessary to change tactical control to meet specific circumstances, the OTC clearly specifies under what circumstances and when such change is to take place. Should another commander wish to

move a unit to better carry out duties in a warfare area, the order goes through the commander having tactical control of that ship or unit, as specified in the task organization, with the OTC or composite warfare commander adjudicating any differences.

Section 6 – The roles of the commander and the staff

The role of the maritime component commander

4.30 The MCC, when appointed, is responsible for the maritime aspects of the joint force commander's mission. The joint force commander or joint task force commander may retain the direct command functions without appointing an MCC, delegating only specific responsibilities to a naval commander. The MCC coordinates operations with other component commanders, ensures unity of effort, and establishes liaison accordingly.

4.31 The commander provides clear guidance and intent. There is a widespread perception that the intrusiveness and pervasiveness of modern communications can act against the principles of mission command. It can, of course, but it need not and it should not. The amount of information available through F communications systems, and the requirement to consult widely, means that there is a greater need for clarity of the commander's intent—and the associated freedom to act.

4.32 Successful command depends upon a climate that encourages subordinate commanders at all levels to think independently and to take the initiative. In training serials and exercises, it should be recognised that, even when the principles of mission command or command by veto have been fully grasped, mistakes will be made. These occasional mistakes should not lead a superior commander to instantly adopt a more rigid and tighter approach to command. Trust and confidence are necessary both up and down the chain of command and should be an integral part of a commander's approach.

The role of the commander during an operation

4.33 The commander should be satisfied that the staff battle rhythm and that of all subordinates satisfy the needs of the operation. The commander should ask: What has changed and what do I need to know?

4.34 Media reports, social media trends, and political caution exacerbate demands for information from higher authorities. During operations, it is the commander's and the staff's task to scrutinize and respond to these requests.

4.35 The commander should allocate a reserve to allow for periods of high tempo and a possible surge in activity. The increasing paucity of Allied maritime forces mean that individual units may be required to serve for longer periods while conducting operations, greatly increasing the risk of personnel fatigue and material failure. While own-force capability and capacity relative to the adversary are critical to a combatant's success—and it is always desirable to have both quantitative and qualitative advantage—human factors are often the difference between winning and losing. Training, morale, discipline, unit

cohesiveness, physical and mental preparation for battle, and, ultimately, effective leadership, all influence the battle. Commanders should continually strive to improve the warfighting effectiveness of their forces and then employ them in combat based on an understanding of their individual and collective strengths and weaknesses.

4.36 In addition to the list of duties of all component commanders, the MCC:

- selects units for assignment to subordinate task force/task groups according to capabilities, the joint force commander's intention, and required missions;
- if the supported commander, integrates and synchronizes manoeuvre, fires, and interdiction within a maritime area of operations of above water and underwater forces;
- conducts liaison with the airspace control authority for airspace control;
- coordinates the maritime contribution to, and required support from, air and missile defence with the air and missile defence commander;
- provides cross-component support as directed by the joint force commander and agreed to by the respective national contingent commander;
- maintains liaison with the submarine operating authority;
- maintains liaison with the NATO White Shipping Cell; and
- develops a contingency plan for the continuity of operations, should the headquarters come under attack or the staff is incapable of planning and conducting operations.

Command relationships

4.37 The commander builds relationships up, down, and across the chain of command. This can be particularly challenging in Allied operations where the different elements of the command team often come together for the first time, normally from a wide range of different national backgrounds and with different levels of experience and expectations at the beginning of an operation. That said, a certain level of compromise and understanding is required to best achieve unity of effort. The use of liaison officers at all levels is particularly useful and pays dividends by avoiding potential misunderstandings and confusion at an early stage, whether during planning or execution. These liaison officers should cross over nationalities, components, and tiers of command.

Role of the staff

4.38 Operations are to be command-led, not staff- or process-led. That said, the commander cannot operate effectively without the full support of the staff. The staff, be they a large body or a small core of individuals, should understand their particular role and what

is expected of them at each stage of the process. Whilst this management responsibility rests with the chief of staff, the commander should ensure contentment with the division of responsibilities and that the staff is capable of undertaking the duties assigned to them in the time available. Ultimately, the staff are responsible for keeping the commander fully informed regarding the production of plans and the issuing of orders to subordinates, the overall conduct of operations, and the support functions required to undertake them. These support functions include liaison at all levels (up and down the command chain and with the other component commanders) as well as provide medical, legal, cultural, political, and any other advice deemed necessary for a particular operation.

Staff structure

4.39 The maritime component command should be organized in a structure that makes the best use of their resources and enables them to integrate with a higher headquarters and provide direction to assigned forces. The headquarters should be organized to manage plans from their formulation through development and refinement to execution. This is a key element within the maritime operational art, and the structures need to be robust enough to cope with changing circumstances. The maritime component command headquarters normally comprise the following staff areas:

a. **Principal advisors.** The commander usually has three principal advisors: the chief of staff, political advisor, and legal advisor.

b. **Plans.** This is the core planning branch that develops long-range joint plans and orders (including the initiating directive in the case of an amphibious operation) and associated estimates of the situation. It should be staffed by experienced warfare officers, ideally with a strong nucleus of joint staff trained personnel. Other specialist staff augment this nucleus as required. Plans produces the maritime estimate, maintains a long-range planning function, and produces the maritime operation plan. Thereafter, its focus remain on contributing to joint force contingency planning and any other branches and sequels that become evident within the operation.

c. **Future operations.** The future operations cell focuses on the development of orders and plans in a midterm time frame. It should be staffed by experienced warfare officers, ideally with a strong nucleus of joint staff trained personnel. Future operations planning also develops the branch plans in support of current and ongoing operations. The operations planning teams work closely with the current operations cell to maintain situational awareness and ensure that there is a smooth transition of responsibility for the plans. Operations planning teams are small planning groups that are focused on a specific or specialist planning activity with membership according to the task. A number of operations planning teams may run simultaneously with leadership devolved to the most appropriate staff branch.

d. **Current operations.** The current operations cell focuses on the management and execution of plans. Current operations conducts any last-minute adjustments to

operation orders through fragmentary orders, monitors their conduct, and coordinates any execution. It also maintains situational awareness through quality control in the production of the recognized maritime picture.

e. **Operational support group.** The operational support group acts as the central repository of information and knowledge so that future plans/future operations/current operations can function effectively. Resident within it are various specialists (e.g., combat support; combat service support; intelligence; targeting; civil-military cooperation; security force assistance; chemical, biological, radiological and nuclear (CBRN) defence; and information operations). These staff functions contribute to the current operations/future operations/future plans cells as required or contribute to discrete operations planning teams when they are stood up to address an issue. A red cell may be formed during the conduct of the estimate and when maritime planning demands their involvement.

4.40 The traditional makeup of an Allied commander's staff uses the N1 to N9 functions. In this case, there needs to be a clear delineation of responsibilities to ensure the cross-functional staff areas are covered. The key is to have the right balance, using reachback where appropriate but also having the key expertise close at hand when it is needed. Each situation requires minor modification, but in essence each has a role to play.

Legal support

4.41 The effective application of national and international law governing the conduct of armed conflict relies on a sound knowledge and understanding at all levels. There are two areas of international law that influence maritime operations: the law of the sea and the law of armed conflict.

4.42 The legal basis for operations is specific to each operation, and commanders should be aware of the legal conditions that pertain to any military operation. All personnel at all times observe the laws and regulations under which they are operating. Any member of the force who acts outside of lawful powers may be the subject of criminal proceedings.

4.43 Commanders ensure that their subordinates understand the law of armed conflict, the rules of engagement, and the mandate authorising the use of force. Maritime commanders are supported by legal advisors. It is important to coordinate across NATO and national rules of engagement to ensure a joint understanding of the rules of engagement.

Medical advisor

4.44 The medical advisor is part of the command group or special advisory group and provides appropriate medical advice to the commander, ensuring that the commander and the commander's staff are aware of all medical implications their actions and decisions might have, as well as of any health-related issues affecting the force or the operation, to include wounded and sick members of the adversary armed forces, wounded and sick civilians, and the medical condition of captured persons. Direct access of the medical advisor to the

commander ensures that all health and medical support related matters requiring the commander`s attention, decision, or action can be addressed in time and based on professional expertise.

4.45 The medical advisor advises the MCC on specific force health protection measures, to include general medical, dental, veterinary, or environmental health services. They can liaise with host nations on support that is available beyond that provided by joint forces.

Political advisor

4.46 Political advisors are civil servants or military personnel selected to advise the commander, but they rarely form a cell or branch within the headquarters. Principally they advise on NATO policy; local, national, regional, and international political issues; political issues related to Allies, partners, non-NATO contributing nations, and host nations; and the relationships with international organizations, non-governmental organizations, and others.

4.47 The roles of the political advisors have increased during operations since the end of the Cold War. This is partly due to NATO forces now operating outside its original theatre of operations and the realization that these key advisors, often civilians, have much to offer the commander and staff. An understanding of strategic intent, geopolitical issues, and local cultural issues, particularly where Allied forces are operating alongside indigenous forces, which, if overlooked, may lead to incorrect decisions and a loss in operational capability.

Cultural advisor

4.48 Cultural advisors have detailed knowledge of and field experience with people, cultures, religions, and concerns in the area in which an operation is taking place. Cultural advisors provide commanders and staffs with expert information about the cultural aspects, implications, consequences, and, when appropriate, possible courses of action to address requirements and events that affect accomplishing the mission.

Gender advisor

4.49 Gender advisors advise, assist, and support the implementation of NATO policies on gender perspectives within the headquarters' functions and processes. The gender advisor serves as a cross-functional staff enabler, incorporating gender analysis and perspectives into all planning for an operation or mission, thereby enhancing effectiveness.

Human security advisor

4.50 The commander may establish a human security advisor to aid in combatting trafficking in human beings, children and armed conflict and the protection of civilians.

Liaison officers

4.51 Exchanging liaison officers is the most commonly employed technique to establish close, continuous, physical communication among organizations. Liaison officers at all levels are key to the cohesion of the different commanders' staffs and greatly increase interoperability and mutual understanding amongst NATO forces. Liaison should be established between the MCC and the joint force commander, between adjacent units, and between supporting, attached, and assigned forces. Liaison officers can be used between the different levels of command; the different components, nationalities, or units participating in operations—from civilian governmental or non-governmental organizations; or from partner nations. The maritime component command identifies the requirement for liaison personnel based on command relationships and mission support requirements. Liaison officers should be requested at the earliest opportunity, and any specific qualifications and functions for these personnel should be noted. Liaison officers to the joint force command headquarters should be of sufficient rank (recommend equal rank to primary staff officers) to influence the decision-making process. Ideally, liaison officers should possess the requisite skill sets (technical training or language) to liaise and communicate effectively with receiving organizations. If asked to provide a liaison officer, the commander should seek to send some of the most experienced and competent members of the staff, vested with the proper decision-making authority where necessary. The embedding of liaison officers not only seeks to clarify issues between different organizations but can often have the added benefit of providing an interpreter in a foreign language, a subject matter expert in an area of expertise not contained within the staff, a facilitator at improving communication beyond the staff, or simply a person who can help expedite a variety of external issues required by the commander and the staff. To help ensure liaison officers are properly employed and not misused, the maritime component command should follow certain basic guidelines:

- Liaison officers are personal and official representatives of the sending commander and should be treated accordingly.
- Liaison officers support the gaining organization and serve as official conduits between organizations.
- Liaison officers remain part of their parent organization's chain of command.
- Liaison officers should have sufficient access to information to be effective.
- Liaison officers are not substitutes for delivering critical information through the normal chain of C2 channels or a conduit for general information sharing.
- Liaison officers do not have the authority to make decisions for their commander without coordination and approval.

Reachback support

4.52 With today's technology, reachback support has improved dramatically. In a conflict against a near-peer or peer competitor, the enemy is unlikely to permit unfettered communication. Commanders assume they will fight in a communication degraded or denied environment and weigh the risks involved regarding the use of reachback for key functions. As always, it is important that the commander identifies at an early stage what is required at close hand and what is best placed elsewhere and accessible using reachback (e.g., intelligence support, cyberspace support, CBRN defence support, and meteorological and oceanographic support). The balance of having too big of a deployed staff footprint is weighed against the communications and information systems available to support it and the impact those personnel have on their immediate environment, be that at sea or ashore. As an example, a staff officer that relies on near-constant access to a telephone system, is better suited to be placed back in a shore headquarters, whilst an advisor that needs to monitor all that is said at command meetings and briefs should be collocated with the commander and core staff.

4.53 During a protracted high-tempo operation lasting many months or even years, the need for staff rotation needs to be planned. This is where the use of reachback support, even on a temporary basis, can be sufficient to allow deployed staff personnel to leave the immediate area of operations for short periods, even if no other subject matter expert in their particular field is available to take their place.

Section 7 – The exercise of command and methods of control

Mission command

4.54 Mission command is the philosophy of conducting military operations through decentralized execution. Successful mission command demands that subordinate leaders at all echelons exercise disciplined initiative and act independently to accomplish the mission. Essential to mission command is the thorough understanding of the commander's intent at every level of command. Commanders issue mission-type orders focused on the purpose of the operation rather than on the details of how to perform assigned tasks. They delegate decisions to subordinates wherever possible to minimize detailed control and empower subordinates to use their initiative to make decisions based on understanding the commander's intent rather than on constant communications. When joint maritime operations are decentralized and reliant on mission command, coordination and planning considerations should include the procedures, measures, and resources (including time) required to implement those plans. The maritime component command and staff should anticipate requirements for joint support, prioritisation of operations or force elements, and extensive coordination with other affected components.

4.55 Mission command does not end with the commander of that particular group or unit. It is the duty of everyone, at whatever level, to ensure that they fully understand the general and specific intentions of their commander and, if necessary, act on those intentions without recourse to their commander. There is a clear responsibility on the part of a subordinate to

fulfil the superior's intention. In the context of mission command, it is likely that the subordinate would have to personally work out how to meet that intention. Therefore, an essential first step is to be absolutely sure about what the intent is. If in doubt, ask.

4.56 Subordinate commanders play a part in developing trust. Total silence is unlikely to engender trust nor are repeated requests for further guidance or approvals. It is vital to keep a superior informed to the extent that is comfortable to both parties. The command estimate provides the best discipline for this, even if used in an abridged form. It identifies the centres of gravity, main effort, and the objectives to be achieved.

Control methods used in the maritime environment

4.57 In practice, no commander relies solely on detailed control, decentralized control, or even command by veto. The type of control used depends on the nature of the operation or task, the operating environment, the nature and capabilities of the adversary, and, perhaps most of all, the quality of the force and its respective commanders. Detailed control may be more appropriate in performing specific, precise tasks of a procedural or technical nature (e.g., controlling airspace), but it is less effective in the conduct of high-tempo operations where judgement, creativity, and initiative are required.

4.58 **Detailed control.** When using detailed control, a commander manages with a tight rein. Command and control is centralized. Orders and plans are explicit, as when a formation of ships is conducting tactical manoeuvring. Such control emphasizes vertical information flow, with information flowing up and orders flowing down the chain of command. Detailed control is often the preferred method when procedures are to be closely adhered to for safety reasons or when restrictive rules of engagement demand close monitoring and extensive reporting of events. It should be avoided when time is a critical factor. Detailed control, however, neither works well in a rapidly changing situation, nor does it function well when the vertical flow of information is disrupted or when the force is facing major/critical interoperability problems. Therefore, it is not the preferred method of control under conditions of great uncertainty, risk, and when there are tight time constraints.

4.59 **Decentralized control.** Decentralized control enables subordinates the freedom of action to act independently, which enables agility in changing situations and the ability to exploit opportunities in accordance with their overall objective. Commanders should delegate the maximum freedom of action in line with their subordinates' ability.

4.60 **Command by veto.** In many aspects of naval warfare, it is necessary to preplan the actions of a force to an assessed threat and to delegate some missions to a subordinate. Once delegated, the subordinate is to execute the mission without delay, always keeping the commander informed of the situation. The commander retains the power to veto any particular action.

Location of the commander and staff

4.61 Unlike land or air commanders, the maritime commander may be faced with different locations from where to exercise command. Whilst each location is different and bring about its own challenges and opportunities, the maritime commander's first decision is whether to exercise command from at sea or ashore. Each has its own pros and cons. Whilst the maritime professional might logically feel drawn towards the sea and the maritime units they command, the reality of a particular operation might mean that command is better executed from a permanent shoreside headquarters, possibly even alongside the joint force commander. This eases interaction and does not have the same limitations for the staff that a floating headquarters is likely to bring, in terms of physical space and with regard to access to communications and information systems.

4.62 The commander decides, with the advice of the chief of staff, whether the staff are to remain in one unified group or not. There may be occasions where it is necessary to split the staff, perhaps when the commander is based at sea with a core element, or leave a large supporting team ashore or in other vessels to conduct the remainder of the supporting functions required. Modern communications and information systems allow for considerable reachback to headquarters and additional staff when bandwidth is available, often in other parts of the world, thereby reducing the personnel footprint immediately around the commander and the core staff.

4.63 Should the commander be sea-based, the travel challenges associated with the need to interact face-to-face with others should not be underestimated. The use of precious air assets and the repositioning of units to enable air or boat transfers to take place should also be fully considered when deciding from where best to command. The unpredictable vagaries of weather systems and sea states further complicate such transfers. Likewise, having a commander and the staff embarked on some vessels could pose an unnecessary distraction or even hamper the prime operational effectiveness of that ship.

4.64 In contrast, command ships or large amphibious warfare ships offer all the capabilities needed to command at sea efficiently, enabling seamless communications with the shore and the full accommodation of large staffs. Command at sea gives a better proximity between the commander and the subordinate units, enabling frequent interaction and a better understanding of the commander's intent, as well as a finer knowledge of the subordinates' characters and skills. It facilitates and enhances the commander's and associated staff's assessment of the environment and situation.

Chapter 5 – Naval warfare areas

Section 1 – Introduction to naval warfare areas

5.1 The primary focus of the North Atlantic Treaty Organization (NATO) is the prevention of conflict through deterrence and to deal with the causes rather than the consequences of international tension by de-escalation. However, in the event that conflict cannot be prevented, military forces should have the ability to confront and defeat aggressors. Even if lethal combat power is not applied, the credible threat of a maritime force may form the basis of the maritime contribution to conflict prevention.

5.2 The conduct of warfare demands that commanders and subordinates should have a determination to win, whatever the difficulties. This attitude has nothing to do with the actual method of warfare being employed and should never be confused with an offensive (vice defensive) course of action. Indeed, the offensive mentality is as necessary in defensive operations as it is when conducting an offensive; it is about seizing and maintaining the initiative.

5.3 The execution of maritime operations centres upon the tenets of sea control and maritime manoeuvre, which together enable the achievement of objectives at sea and from the sea. As with other aspects of maritime power, they are intimately interrelated and each relies upon the other for success.

5.4 Warfare at sea is conducted by missions in the following warfare areas: underwater warfare, above water warfare, and maritime information warfare. These are enabled by maintaining situational awareness and a common operational picture.

5.5 Many of these warfare areas are supported by unmanned systems that support a wide range of activities at sea and enable the maritime force to monitor larger areas without deploying warships, reduce the risk to human life in dangerous environments, remain on patrol for long periods and are less expensive to operate.

Section 2 – Underwater warfare

5.6 Underwater warfare employs maritime assets to establish dominance in the underwater environment, which permits friendly forces to accomplish the full range of potential missions and denies an opposing force the effective use of underwater systems and weapons. It includes offensive and defensive submarine, antisubmarine, and naval mine warfare operations and seabed operations.

Antisubmarine warfare

5.7 The objective of antisubmarine warfare is to stop adversary submarines from having an adverse influence on missions assigned to friendly forces. Maritime forces may be assigned the tasks to locate, neutralize and destroy enemy submarines; protect territorial

seas and land targets from submarine insertion; deny submarine operations in specific areas; protect forces and shipping; and conduct precursor operations (sometimes referred to as precursor sweeping). Unlocated enemy submarines often have the most influence in the joint operations areas, possibly affecting fleet manoeuvre and commercial shipping operations. The maritime component commander (MCC) should consider designating enemy submarines as time-sensitive targets and develop and implement a comprehensive plan to reduce this threat.

a. Antisubmarine warfare missions are typically centrally planned under the direction of the MCC and executed by the officer in tactical command (OTC) in a decentralized manner in support of the joint force commander's concept of operations. Some nations use a theatre antisubmarine warfare commander to plan and execute antisubmarine warfare operations. Antisubmarine warfare is complex, requiring the coordination and integration of multiple platforms and systems to mitigate the risks posed by enemy submarines. Antisubmarine warfare planning should include consideration of the submarine threat, unmanned underwater vehicles, operating environment force planning, intelligence collection, and communications systems.

b. The air component commander (ACC) can provide support to antisubmarine warfare by searching, locating, classifying, and attacking submarines as well as their support assets. Should rules of engagement permit, air assets can be used to target submarines while at home base, which may be less of a challenge than locating them in open water.

c. Although often viewed as a navy-only mission, the MCC may be supported by a variety of joint forces and combined forces and capabilities (air, land, maritime, space, cyberspace, information warfare, and special operations) to facilitate or conduct antisubmarine warfare. In particular, given the nature of the operating environment, the size of the maritime area of operations, and the mission to find, fix, track, target, and, if required, engage enemy submarines, the use of joint intelligence, surveillance and reconnaissance capabilities and activities is one of the essential resources to antisubmarine warfare mission accomplishment.

d. The complexity of the underwater acoustic environment provides both opportunities and threats. The threats should be mitigated via emission control policy and acoustic signature management.

For additional information on antisubmarine warfare, see ATP-01, Volume I, *Allied Maritime Tactical Instructions and Procedures*; ATP-18, *Allied Manual of Submarine Operations*; and ATP-28, Volume I, *Allied Antisubmarine Warfare Manual – Tactics and Procedures*.

Naval mine warfare

5.8 Naval mine warfare is divided into two subdivisions: mine laying and mine countermeasures. Naval mines are an effective means of contributing to anti-access, sea denial, and sea control operations and can be legally used in support of joint operations to

help shape the maritime environment. This is accomplished by denying freedom of movement through an area, funnelling maritime traffic, protecting infrastructure/resources, weakening opposing forces, forcing the enemy to divert sea lines of communications, or delaying/ceasing invasion of opposing naval forces. Until cleared, mines can sink or damage ships (mission kill) or may force ships to avoid mined areas or perhaps close a port. It is a covert weapon with no visible warning of the type of mines or the extent of the minefield. Because they are covert, the threat of mines can have the same effect as establishing a real, declared, or assumed minefield by compelling a mine-countermeasure effort where it is not actually necessary. A mine threat (real or perceived) can have an immediate and exponential effect on maritime trade and military operations. Mines are relatively inexpensive to produce, little skill is required to lay them, their damage often results in the sinking of a ship or a mission kill, and they are a persistent threat until cleared. It often takes months to repair a mine-damaged ship. Not only is that ship taken out of service, but a shipyard now spends time and effort to repair a ship instead of building a new one. Mine countermeasures are slow and difficult to perform, and one never really knows if all mines are cleared. However, mines are weapons that wait. Thus, if the ship does not enter a minefield or if the mines do not explode, one may be unaware of their presence. Generally, mines are indiscriminate. They target ships, and, on occasion, a friendly ship has set off a mine laid by the same nation or a merchant ship can trigger a mine. Mines are mostly passive weapons systems. Additionally, mines can be deployed by a variety of non-military maritime platforms, such as fishing vessels and cargo ships. See Figure 5.1 for an overview of naval mine warfare.

a. Mine laying inflicts damage or sinks ships or denies their use of the sea.

(1) Sea denial mining could deny the use of a port, blockade a nation, or force ships to avoid coastal waters or hamper access to the oceans.

(2) Sea control mining supports military objectives in a specified area, (e.g., to protect an amphibious objective area or in deeper waters to force submarines to the surface).

b. **Mine countermeasures.** The objective of mine countermeasures is to prevent, reduce, or minimize the risk of mines to ships by:

- preventing the enemy from laying mines (countering enemy forces capable of impeding the mine countermeasures effort are addressed as part of the joint targeting process);
- forcing or enticing the enemy to lay mines in waters, which Allied forces do not use;
- causing mines to explode without loss or with acceptable loss or rendering them ineffective by removing them to a safe place or preventing the firing system from operating;

- reducing the danger to Allied forces by confining ships to routes where no mining has taken place or where the risk from mines has been reduced to an acceptable level; and

- altering the characteristics of a ship's signatures.

c. The maritime component command should plan to prevent enemy mine laying as mine clearance is a slow and difficult task, especially in hostile or uncertain operating environments. Complete clearance may not be practical and commanders may have to accept the risk of operating in waters in which some mines remain. Aircraft, ships, or unmanned systems conducting mine countermeasure operations have limited ability to defend themselves. Mine countermeasures operations should be carefully coordinated with the other component commanders. The presence of mines may hamper or even prevent operations of naval and merchant ships. Timely coordination between all authorities concerned and proper warning minimize interference. The legal advisor provides legal support relevant to the use of mine warfare in naval operations.

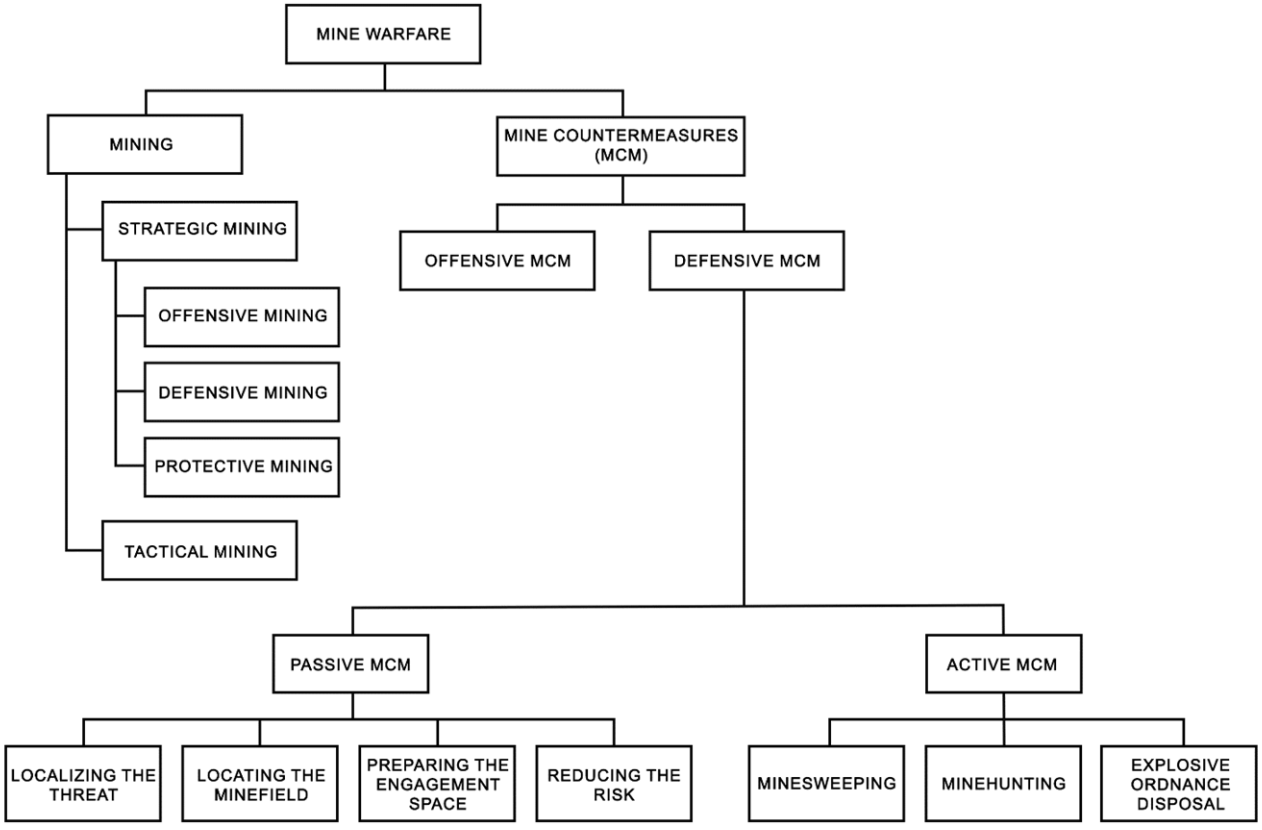

Figure 5.1 – Naval mine warfare

For additional information on naval mine warfare, see ATP-06, Volume I, *Naval Mine Warfare Principles*; ATP-06, Volume II, *Naval Mine Countermeasures Operations, Planning and Evaluation*; ATP-24 series of publications; AHP-01, *Allied Worldwide Navigational Information System (AWNIS)*; and Allied Mine Warfare publications.

Seabed warfare

5.9 The seabed is a complex environment, hostile to humans, and difficult to reach. It therefore remains largely unknown. Government and private activities are developing on the seabed, be it oil and gas extraction, the submarine cable market, or deep-sea exploration for the exploitation of mineral resources. These multiform activities come with increasingly advanced technological innovations. At the same time, major strategic competitors are stepping up their ambitions in this area. In a continuum of competition context, where the seabed resources play an essential role for the nation's and Alliance's prosperity, it becomes essential to:

- guarantee freedom of action;
- protect underwater critical infrastructure; and
- guarantee the legal national interests in the exploration and exploitation of mineral and energy resources.

Section 3 – Above water warfare

Above water warfare

5.10 Above water warfare employs maritime assets to counter the enemy surface and air threat. It is all actions to defend the maritime force against attack by airborne weapons launched from aircraft, ships, submarines, and land-based sites or to destroy the enemy fleet. In a joint operation, the use of land-based joint force air component or land component commander forces for anti-air warfare and antisurface warfare in support of MCC objectives is an important factor that necessitates close cooperation between naval, air, and land forces.

a. Above water warfare is influenced fundamentally by three factors:

- diversity of the threat;
- means available to counter the threat; and
- speed with which the threat develops and the reaction time required to meet the threat adequately.

b. The maritime component command ensures that the OTC has the intelligence, surveillance, early warning, and mutual support from the ACC and land component commander (as required) to conduct warfare at sea.

c. Ships/surface units can be detected by a range of maritime-, land-, space-, or air-based sensors; however, it is often difficult to identify specific vessels as targets with sufficient certainty to engage them, especially if they are not radiating unique electromagnetic and/or acoustic signatures. Additionally, weather conditions can change rapidly, and unique maritime environmental factors (e.g., wave height and sea spray) may affect visibility and radar or sensor effectiveness of platforms and weapons systems.

Anti-air warfare

5.11 Anti-air warfare consists of those measures to defend a maritime force against attack by airborne weapons launched from ships, aircraft, submarines, and/or land-based sites. Anti-air warfare destroys the launching platform and, secondarily, the weapon or reduces it to an acceptable threat level through effective employment of sensors and weapons systems. Denial of intelligence and achieving adequate attack warning (known as indications and warning) are crucial to the anti-air warfare battle. The most common posture for anti-air warfare is defence in depth or layered defence using organic and shore-based aircraft, long and medium range surface-to-air missile systems, point defence missile systems, guns, close-in weapons systems, and electromagnetic countermeasures. These layers are necessary to gain early warning, counter the threat's surveillance and targeting effort, destroy attacking aircraft before they can achieve weapon release, and/or destroy/decoy missiles in flight and swarming attacks from unmanned systems.

5.12 Maritime and land-based anti-air warfare forces frequently operate in mutually supportive roles requiring careful coordination between forces at all levels of command. In or adjacent to a joint operations area, the layers of maritime anti-air warfare overlap or be contained with those of land-based air commanders. If a force at sea is to be supported by land-based aircraft, the appropriate commander informs the OTC of the type and nature of support being provided in response to a support request. Therefore, careful planning, combined with well-established procedures and clearly specified authorities, is necessary to avoid mutual interference between land-based and maritime air and missile defence forces.

For additional information on anti-air warfare, see ATP-01, Volume I, and ATP-31*, NATO Above Water Warfare Manual.* For additional information on air and maritime coordination, see AJP-3.3.3, *Allied Joint Doctrine for Air-Maritime Coordination*.

Integrated air and missile defence

5.13 Supreme Allied Commander Europe designates an air and missile defence commander with overall responsibility for air and theatre ballistic missile defence. The air and missile defence commander plans and executes integrated air and missile defence operations, integrating and coordinating the air and missile defence forces of each component by developing a coherent joint air and missile defence plan. Anti-air warfare activities are largely removed from a land-based air and missile defence commander's governance when naval forces are executing maritime task group defence.

5.14 Maritime assets may be part of NATO's integrated air and missile defence where Commander Allied Air Command exercises command and control (C2) of air defence operations. To achieve optimum mutual support and to avoid mutual interference between land-based and maritime air and missile defence forces, careful planning and coordination is necessary. Well-established and practiced procedures (e.g., the coordinated air sea procedures for air defence) provide the necessary interoperability to establish and maintain a joint air and missile defence umbrella within a defined area.

5.15 Integrated air and missile defence differs from anti-air warfare in that it encompasses non-traditional airborne weapons (ballistic missiles). Integrated air and missile defence maritime missions include defence of maritime forces and assets, defence of the population and civil infrastructure, and defence of deployed forces. Maritime integrated air and missile defence is conducted from the maritime area of operations using forces that are principally naval or under the maritime component command force structure. Multi-mission units do not conduct integrated air and missile defence at the exclusion of other tasks and would execute integrated air and missile defence tasks simultaneously with other maritime operations, such as antisubmarine or antisurface warfare. Integrated air and missile defence requires two general functions that are not mutually exclusive: sense and effect/act.

For additional information on integrated air and missile defence, see AJP-3.3.1, *Allied Joint Doctrine for Counter-Air*; ATP-3.3.3.1, *Air-Maritime Coordination Procedures (AMCP)*; ATP-01, Volume I; and ATP-31.

5.16 The maritime contribution to integrated air and missile defence is required to be interoperable at the joint and combined levels with the wider operational and tactical C2 structures, systems, and procedures. Potential maritime integrated air and missile defence roles include, but are not limited to:

- anti-air warfare, including antiship missile defence;
- active and passive air defence;
- a command and control platform to integrate into existing integrated air and missile defence systems;
- a theatre ballistic missile defence sensor; and
- a theatre ballistic missile defence interceptor.

Ballistic missile defence

5.17 Ballistic missile defence is a standing NATO peacetime mission and combines assets commonly funded by all Allies as well as voluntary contributions provided by individual Allies. For ballistic missile defence planning, Allied Air Command develops a defence design with a maximised level of protection for the whole NATO European territory. Certain missions may require close coordination between theatre ballistic missile defence and ballistic missile defence operations.

5.18 Maritime units afloat may operate beneath high-intensity, friendly air traffic in areas of an air threat. Maritime forces comply with (regional) airspace control procedures and with the air and missile defence plan. Ships with a theatre ballistic missile defence capability (theatre ballistic missile defence radar and/or upper/lower layer interceptors) may be able to contribute to theatre ballistic missile defence by providing early warning and cueing and/or by engaging enemy ballistic missiles.

For additional information on coordinated air-sea procedures and theatre ballistic missile defence taskings, see AJP-3.3.3. For additional information on anti-air warfare, see ATP-01, Volume I, and ATP-31.

Antisurface warfare

5.19 Antisurface warfare should take full advantage use of the offensive potential of Allied surface, submarine, and air forces to deny the enemy effective use of their surface forces. Antisurface operations by surface forces and submarines include all actions to combat enemy surface forces. The OTC may assign a surface action group comprised of surface units and/or submarines in an offensive or defensive role. The OTC may either detach a surface action group to counter the surface threat, maintain the integrity of the force, or avoid action by altering course of the whole force depending on the significance of the surface threat.

5.20 When receiving support from the ACC the area of attack and other factors that influence tactics, weapons mix, and support requirements should be clearly identified, and primary targets should be specified, especially when surface combatants are escorting amphibious craft and supply ships.

5.21 Some nations may employ a theatre antisurface warfare commander during operations when conducting operations in a geographic area unrelated to the protection of a specific surface force.

For additional information on antisurface warfare, see ATP-01, Volume I; ATP-18; and ATP-31.

Section 4 – Maritime information warfare

5.22 Maritime commanders fight in and defend an increasingly complex information environment to enable freedom of action of not just the maritime force but possibly the joint force.

Maritime information warfare

5.23 The areas of responsibilities within information warfare are an enabling function whereby a special relationship with the information warfare commander at sea and maritime component command staff ashore require close synchronization. Maritime information warfare is underpinned within three pillars of operations (assured C2, battlespace awareness, and integrated and joint operations). The enabling of these pillars, which are joint by nature,

requires constant monitoring. Maritime information warfare can support any of NATO's core tasks and core policies during any of the campaign themes. This could be during peacetime engagement activities or transitioning, up to or including wartime fighting; information warfare is always present and conducted at all levels of command.

5.24 Maritime information warfare is applied across the continuum of competition and is long-lasting and constantly present. The information warfare commander is supported within large-scale multinational forces by federated mission networking/the mission partner environment, information operations, joint electromagnetic operations, joint targeting, joint intelligence surveillance and reconnaissance, joint tactical data link, and joint cyberspace and space operations.

5.25 Traditional N2/N6 staff ashore enable and maintain communication and information system connectors and information flow across the joint force. The N2/N6 fuse and distribute battlespace awareness through common operating pictures accessible by the "push/pull" of information within the maritime and joint community. N2 staffs and the information warfare commander synchronize intelligence information sharing. Joint intelligence, surveillance and reconnaissance activities require synchronization between fleets' organic intelligence assets and shore-based inorganic intelligence resources. N3 and joint targeting and effects staff planners synchronize task group information operations activities and joint targeting and effects across the strategic, operational, and tactical levels of warfare; all of which require synchronization and support to create the desired effect.

5.26 The enemies' fleet manoeuvre may also be disrupted by maritime information warfare functions that span across the three levels of warfare. While modern information warfare manoeuvre considerations are based largely on Cold War-era practices, technological advances have increased the complexity of scheme of manoeuvre planning. That planning is inclusive of:

- electromagnetic manoeuvre warfare considerations; and
- counter-intelligence, surveillance, target acquisition, and reconnaissance considerations for adversarial air and space layer surveillance.

5.27 The information warfare commander, along with the advice from N3/J3 and maritime component commands, coordinates the task group's scheme of manoeuvre to maximise countering-intelligence, -surveillance, -reconnaissance, and -targeting considerations while maintaining communications links, critical information exchanges for battlespace awareness, and integrated fires functions required to complete the mission.

5.28 **Joint Maritime Information Warfare Integration.** The integration of maritime information warfare into operational plans should be clearly identified. Planning products as well as targeting directives maximise the integration of joint effects into maritime operations to enhance operations.

For additional information on maritime information warfare, see ATP-01, Volume I, and ATP-113, *Maritime Information Warfare (MIW).*

Maritime cyberspace operations

5.29 The advent of new technology has resulted in vessels with ship's propulsion, navigation, and cargo handling systems routinely being automated. Navigation aids and port handling facilities are similarly automated, increasing the vulnerability to cyberspace threats. The impact of cyberspace and space, as parts of the operating environment, should be understood by the Allied maritime commander insomuch as both present challenges to the security of maritime operations.

5.30 All devices reachable via cyberspace could be a target or a threat. This includes networks and devices connected by wired connections and wireless connections and those that appear to be not connected at all. Maritime forces rely on cyberspace to navigate ships, submarines, and aircraft to control weapons systems and manage, store, process, and move essential data required to plan, coordinate, and execute operations. Cyberspace vulnerabilities can jeopardize sensitive information capabilities and expose critical C2 systems as well as hull, mechanical, electrical, and weapons systems. If compromised, these systems can be controlled, destroyed, or disrupted by an enemy and cause significant damage to the networks or to the maritime force. Defensive cyberspace operations prevent and/or terminate and mitigate ongoing malicious activities in cyberspace and enable recovery from their effects. Commanders should be aware of adversaries' capabilities to launch cyberspace attacks against NATO forces and therefore plan to respond to them as appropriate.

5.31 Maritime commanders can request and benefit from offensive cyberspace operations to target enemy cyberspace functions or initiate a cascade of effects in the physical environments on enemy platforms, weapon systems, C2 processes, and other key resources. Other offensive cyberspace operations may support information operations to create effects in the cognitive dimension of decision makers. Freedom of action in cyberspace crosses theatre boundaries and supports the joint force. Effective cyberspace operations depend on many unique relationships and authorities among military, national, and Allied partners and require significant planning to ensure tactics, techniques, and procedures are not compromised and friendly networks, including critical national infrastructure, industrial control systems, weapon systems, C2 systems, and logistics systems are not affected.

5.32 Cyberspace operations may be executed at any level of warfare depending on the authorities required for execution, but they are rarely planned at the joint force or below level. They may require national-level integration and coordination. Any effect in or through cyberspace beyond NATO communication and information systems come through the Sovereign Cyber Effects Provided Voluntarily by Allies' process. Before conducting cyberspace operations, commanders, planners, and operators should understand the relevant legal framework and authorities under which they are operating to comply with

applicable laws, treaties, and policies. It is essential to consult legal advisor familiar with cyberspace operations during the planning and execution phases. Targeting using cyberspace operations require specific national approvals.

For additional information on cyberspace operations, see AJP-3.20, *Allied Joint Doctrine for Cyberspace Operations.* For additional information on targeting, see AJP-3.9, *Allied Joint Doctrine for Targeting.*

Section 5 – Strike warfare

5.33 The term "strike warfare" is used in the maritime operating environment and commonly includes joint fire support, interdiction, and strategic attack. Strike warfare may be conducted by cruise missile-carrying submarines, aircraft carrier strike aircraft, surface action groups of one or more naval surface vessels, land-attack missiles, naval surface gunnery, rotary-winged aircraft, unmanned aircraft systems, and amphibious forces. Strike operations may include the employment of cruise missiles, aircraft, amphibious forces, and special operations forces to attack targets. Air strikes require close coordination with air component command planners. Integration of land-attack missiles with strike aircraft in the same attack requires close coordination between the airspace coordinating authority, ACC, MCC, and, possibly, the land component commander to deconflict airspace and target selection. The maritime component command ensures that strike support from the air component command and land component command are coordinated with the organic maritime force strike assets.

5.34 Maritime strike operations may be conducted to accomplish a number of operational objectives, including protecting sea lines of communications, denying the enemy commercial and military use of the seas, protecting naval logistic support to deployed forces, and establishing maritime power projection. These missions help to shape the operating environment to support decisive operations to damage or destroy an enemy objective or capability.

Section 6 – Amphibious operations

5.35 Amphibious forces offer strategic mobility with both political and military flexibility. Amphibious operations, which occur across the maritime environment, are complex and may involve all components of the joint force. They provide a unique capability: as an integrated part of a maritime capability they have utility in all phases of a campaign, from benign presence to the conduct of forced entry combat operations. While amphibious forces provide a wide range of options at the tactical level, they also have distinct roles at the operational level. They can sail early in a developing crisis situation and, with the use of complementary information operations, demonstrate a nation's or the Alliance's will and capability. Amphibious forces can, in common with all naval forces, transit international waters without infringement of territorial boundaries; they can be kept ready off-shore ("poised") almost indefinitely, offering presence without occupation and deterrence without commitment of forces ashore. An uncommitted amphibious force is a factor in the estimate of an enemy theatre commander and requires them to retain coastal defence forces and a

counterbalancing reserve as a contingency against the threat of an amphibious landing. The poised landing force can land on virtually any coast that meets the physical requirements for a landing, at a time and place of political choosing, entirely independent of infrastructure ashore. Once the landing force is ashore, it can be sustained for protracted operations by its integral logistic organization and amphibious task force ships as long as a beachhead or air corridor remain open. Once the decision to execute an amphibious operation is taken, the amphibious force conducts operations at the tactical level; but when the landing force is re-embarked and redeployed, it can again play a role at the operational level, in a sequence that can be successively repeated time and again.

5.36 Amphibious operations are synonymous with projecting military capability from the sea; the most readily recognised being an amphibious assault onto a beach. However, the world is becoming increasingly more complex, unpredictable, and contains new challenges. Operations within the littorals are therefore expected to become prevalent, especially as mega-cities and resource hubs draw closer to the coast and are more easily influenced from the sea. From traditional warfighting through counter-insurgency and onto asymmetric ambiguous conflicts, the littoral offers manoeuvre space that can be exploited by amphibious forces. The global reach of amphibious forces combined with littoral manoeuvre enables operations across a wider geographic area in a more decentralized manner. The amphibious force's ability to conduct littoral manoeuvre provides an advantage for the joint force by imposing a continuous littoral threat on the enemy that may cause dispersal of an enemy's defence forces. Although their points of entry are, to a certain extent, constrained by geography and hydrography, amphibious forces at sea pose a significant problem to an enemy who is therefore compelled to disperse forces to meet the threat and defend all possible landing options. Given sound, up-to-date intelligence, amphibious forces can exploit the element of surprise and capitalize upon an enemy's weaknesses through application of the required type and degree of force at the most advantageous time and place. Reduced signature of forces, flexibility of action, responsive fires, and control of dispersed landings are essential to pit amphibious force strengths against an enemy's weaknesses. Informed by awareness of the enemy's capabilities, the ability to potentially manoeuvre within the enemy's weapons employment zone and evade detection by enemy sensors and weapons is perhaps the critical consideration for littoral manoeuvre.

5.37 Depending on the amphibious operation, the joint force commander and MCC may need to shape the amphibious objective area or operational area by employing carrier strike groups and other maritime and joint forces. The supported/supporting relationship between the carrier strike groups and other joint forces conducting the shaping operations and the amphibious force are provided in the initiating or establishing directive. Amphibious forces using embarked aircraft and other assets, which could also include attached surface combatants, submarines, and other joint and naval forces, can effectively conduct or support sea control operations. Establishing sea control or landing site superiority may also require the amphibious force to project power ashore to neutralize threats or control key maritime terrain in the landward portion of the littorals.

5.38 There are five types of amphibious operations: assault, raid, demonstration, withdrawal, and amphibious force support to crisis response and other operations.

a. **Amphibious assault.** An amphibious assault is launched from the sea by an amphibious force, embarked in ships or craft, to employ a landing force on a hostile or potentially hostile shore. An amphibious assault requires the rapid build-up of combat power ashore, from an initial zero capability to full coordinated striking power as the attack progresses toward amphibious force objectives. The assault begins on order after sufficient elements of the assault echelon arrive in the operational area and specified operational criteria for landing are met. For an assault, the action phase ends when conditions specified in the initiating directive are met, as recommended by the commander amphibious task force and commander landing force and approved by the joint force commander or designated commander. Assaults may be coordinated with the air component command and land component command for a first entry operation.

b. Amphibious raid. An amphibious raid is an operation involving a swift incursion into or the temporary occupation of an objective to accomplish an assigned mission followed by a planned withdrawal. An amphibious raid may be conducted to temporarily seize an area to secure information, confuse an adversary or enemy, capture personnel or equipment, or to destroy a capability. Amphibious raids are conducted as independent operations or in support of other operations. Depending on the purpose of the raid, it may be conducted using clandestine insertion means, relying on stealth to approach the objective, or overtly with full fire support in a manner that may resemble the early stages of an amphibious assault.

c. Amphibious demonstration. An amphibious demonstration is a show of force intended to influence or deter an enemy's decision. An amphibious demonstration's intent is to deceive the enemy, causing the enemy to select an unfavourable course of action. An amphibious demonstration may be executed to confuse the enemy as to time, place, or strength of the main effort. Amphibious demonstrations may be conducted to deceive or confuse the enemy. In the area of operations, an amphibious demonstration may be conducted in or near the landing area in conjunction with an amphibious assault. In other cases, a demonstration may be conducted outside the area of operations by forces not attached to the supported amphibious force to divert or immobilize enemy strategic reserve forces that could threaten the amphibious assault. Likewise, the demonstration could be used to divert enemy attention from other operations.

d. **Amphibious withdrawal.** Amphibious withdrawals are operations conducted to extract forces by sea in naval ships or craft from a hostile or potentially hostile shore. They may be conducted under enemy pressure or under operational urgency in permissive, uncertain, or hostile environments to obtain forces needed elsewhere or to remove forces whose mission is completed. Withdrawal begins with establishment of defensive measures in the embarkation area and amphibious objective area or area of operations and ends when all elements of the force have been extracted and embarked on designated shipping.

e. **Amphibious forces support to crisis response and other operations.** Amphibious forces support to crisis response and other operations focuses on providing a rapid response to crises, deterring war, and resolving conflict. Amphibious forces routinely conduct support to other operations, such as security cooperation, humanitarian assistance, non-combatant evacuation operations, peace support, recovery operations, or protecting facilities and personnel abroad.

For additional information on amphibious operations, see ATP-08, Volume I, *Doctrine for Amphibious Operations.*

Section 7 – Special operations

5.39 Maritime special operations forces primarily conduct operations in the coastal, riverine, and maritime environments. They may utilise small, flexible, mobile units operating under, on, and from the sea. These operations are characterized by stealth, speed, and precise application of force. They may be focused on, but not restricted to, the following activities:

- insertion/extraction by sea;
- discreet beach reconnaissance (hydrographic survey) in advance of an amphibious operation;
- discreet route preparation in advance of an amphibious operation;
- coastal reconnaissance;
- coastal raids, ambushes, and assaults, including opposed boarding operations;
- recovery of ships and maritime installations; and
- maritime counterterrorism.

For additional information on special operations, see AJP-3.5, *Allied Joint Doctrine for Special Operations.*

Section 8 – Riverine operations

5.40 A task-organized riverine force conducts riverine operations and screens against belligerent actions by denying an enemy the use of navigable waterways. The force counters current and emergent threats in the riverine operational environment, which includes lakes, rivers, harbours, deltas, coasts, and fjords, in both littoral and inland regions. If equipped and supported, a small, flexible, lethal, and highly manoeuvrable riverine force is capable of conducting operations in this environment. Typically, the forces in the riverine environment operations area are commanded by the MCC if the effects are in support of maritime operations or integrated into an amphibious operation. If in support of land operations they are typically under the land component commander. Likewise, as power is projected inland,

C2 could be shifted after termination to the land component commander or joint force special operations component commander; in either case, coordination for handover is required, and the riverine forces are assigned in a supporting relationship to the appropriate commander.

5.41 Amphibious forces are not the only forces that can conduct riverine operations, but, by nature of their training and equipment, they can be configured to conduct or contribute to riverine operations as part of amphibious operations within the littoral regions or in support of a land component further inland. However, a detailed mission analysis and threat assessment are always conducted before committing an amphibious force to riverine operations to ensure that their training and equipment is suitable for the mission and anticipated threat.

5.42 Riverine combat operations consist of employing maritime, ground, air, and/or support to special operations forces to achieve one or more of the following objectives:

- establishing control of the waterways in a geographic area;
- establishing limited control of specific land areas, population, and resources;
- locating and destroying hostile forces, enemy installations, and supplies; and
- establishing and securing an area of operations.

For additional information on riverine operations, see ATP-08, Volume III, *Riverine Operations*.

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Chapter 6 – The planning and conduct of maritime operations

Section 1 – Operational art and maritime principles

Operational art

6.1 Operational art is the conceptual framework underpinning both the planning and conduct of operations. It includes the commander's vision and skills, operations design, and operations management. Operational art seeks to clarify the situation, assess risk, foster actions that continually gain advantage, and deliver logical solutions to complex problems.

6.2 The goal of operational art is to best employ forces to achieve defined objectives through the design, organization, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art seeks to ensure that the maritime commander uses the four operational factors of forces, space, time, and information effectively through the appropriate sequencing and synchronization of component activity to support the design of joint operations. Operational art requires a broad vision, the ability to visualize the operating environment and anticipate enemy actions, a careful understanding of the relationship of means to ends, an understanding of the risk inherent in pursuing these, and effective joint cooperation.

6.3 The commander’s active participation is essential in operational art as it is a blend of science and art requiring their intuition, experience, and leadership. The application of operational art enables the maritime component commander (MCC) to answer four questions. These questions require the MCC to consider the ends to be achieved to support the joint force commander, the ways to achieve those ends, and how to use the means available:

- What is the objective of the maritime operation and what conditions in the maritime environment will achieve the operational objectives in the theatre or area of operations?
- What sequence of maritime actions is most likely to produce those conditions?
- How should maritime resources be applied, within established limitations, to accomplish that sequence of actions?
- What risks are involved?

During planning activities and later, during the conduct of operations, within the operations management inside the staff battle rhythm, the MCC creates the vital intellectual core and basis for the various decisions and staff products to develop, implement, and execute the plan.

Principles and operational considerations in joint and multinational operations

6.4 The following principles of joint and multinational operations are established in AJP-01, *Allied Joint Doctrine*. The commander and the staff should understand and apply these fundamental principles to approach problems coherently:

- unity of effort;
- definition of objectives;
- maintenance of morale;
- initiative;
- freedom of action;
- offensive spirit;
- concentration of force;
- economy of effort;
- security;
- surprise;
- flexibility; and
- sustainability.

6.5 **Operational considerations.** The principles listed above are supported by operational considerations. The commander and the staff should incorporate these operational considerations, which are further elaborated in AJP-3, *Allied Joint Doctrine for the Conduct of Operations*:

- protection of civilians;
- consent;
- political will;
- mutual respect and understanding;
- diversity;
- transparency;

- interoperability;
- freedom of movement;
- strategic communications;
- intermediate force capabilities; and
- environmental protection.

Operations framework and operations design

6.6 The operations framework describes tactical operations as shaping, decisive, or supporting and links them to the commander's manoeuvre plan. It sets the operating scheme and desired result. The commander uses the operations framework to synchronize their forces' activities in time and space according to the objective. It enables a clear view of relationships between the effects and objectives. It also enhances the forces' focus on the end state and avoids mission creep. Concepts for tactical operations stemming from the operations framework are best described in relation to the decisive conditions/supporting effects and lines/grouping of operations. A number of shaping and decisive operations may be needed to realize decisive conditions/supporting effects along a line of operations. Shaping, decisive, and sustaining actions can apply to all effect dimensions.

6.7 Once an initial operations framework has been further developed and elaborated during the operations planning process, it becomes the operations design by the commander's decision. Other frameworks that may aid a commander in operations planning can be found in AJP-01.

Section 2 – Operations planning activities, commander's intent, concept of operations, operation plan, and tactical orders

The sequence of operations planning activities

6.8 The sequence of planning activities to be conducted at the operational level as well as the higher tactical (component) level, including required input and output, is described in detail in AJP-5, *Allied Joint Doctrine for the Planning of Operations* and the *Comprehensive Operations Planning Directive*. The *Comprehensive Operations Planning Directive* gives Supreme Allied Commander Europe's (SACEUR's) detailed and elaborated direction and guidance for operations planning at strategic, operational, and tactical (component) levels; the linkages and interaction between them; and the formats of related documents, directives, plans, and orders. The maritime commander follows both publications and subordinated maritime force element commanders should be familiar with them for support to the maritime component command and transcription into processes, plans, and orders at their own level.

6.9 The sequence of planning activities is a series of logical, sequential, analytical processes to examine a mission; develop, analyse, and compare alternative courses of

action; select the best course of action; and produce the concept of operations and the operation plan (OPLAN). Operational art and operations design provide the conceptual basis for structuring operations. The sequence of planning activities provides a proven process to organize the work of the commander, staff, subordinate commanders, and other partners to develop plans. It focuses on defining the military mission and developing and synchronizing detailed plans to accomplish that mission. The planning activities are:

- initiation;
- mission analysis;
- course of action development;
- course of action analysis;
- course of action validation and comparison;
- commander's course of action decision; and
- plan development (concept of operations and OPLAN).

6.10 The joint force commander's operational planning directive provides the joint force mission and initial guidance and direction for planning at maritime component command level. This directive is the formal tasking to start planning (with mission analysis), and it is, as well as the later, subsequent joint concept of operations and joint OPLAN, the basis for the maritime component command's planning staff work on the maritime concept of operations and maritime OPLAN, outlining the maritime role in the overall operation.

6.11 The maritime commander, despite the formal tasking character of the operational planning directive, is continuously involved throughout the operations planning right from the start in activity "initiation." The maritime commander may also be involved (partially) even earlier, within the context of the North Atlantic Treaty Organization (NATO) crisis management system phases 1–3. The commander is the central figure in both operations planning and conduct of the operation. The commander guides the staff through all phases of an operation. Commanders draw on doctrinal frameworks to mitigate the challenges of complexity and uncertainty to generate a clearer understanding of the operating environment and conditions required to focus effort and achieve success. Commanders should be proactive in sharing their perspective with their higher headquarters, and both levels should resolve differences at the earliest opportunity.

Commander's intent

6.12 The commander´s intent is the foundation of the operations design. It is a concise, written statement of how the commander envisages the forces will conduct the operation. The commander communicates the intent to the staff and subordinate commands, ensuring a common understanding. The commander produces the intent based on the findings

depicted in the mission analysis and initiates the development of the courses of action through the commander´s planning guidance. While there is no specified format for the commander's intent, a generally accepted construct includes the purpose and objective(s). The commander's intent can be reinforced by restating it on each occasion that they provide direction to their subordinates. The commander's intent should be broadly enduring unless there is a significant change to the situation or the mission. The commander's intent serves as the core for the concept of operations to be developed.

Concept of operations

6.13 The maritime concept of operations is the formal, elaborated expression of the commander's intent for the conduct of the operation, including the deployment, employment, and sustainment of forces. The concept of operations provides the basis for the development of the OPLAN. The operations design described in the concept of operations therefore establishes the sequence and purpose of critical actions in distinct phases from initial entry to termination and transition, including the required operational outcomes in terms of objectives and the deducted decisive conditions to be achieved within each phase and line of operation.

6.14 The concept of operations provides the basis for the assignment of missions to subordinate and supporting commands, as well as priorities for each functional area, and risk assessment. The operation is described from the perspective of the commander, encompassing the employment of forces. The concept of operations provides an enduring reference point to which subordinates can refer to confirm their understanding of commander's intent and to orientate themselves to their role in the overall scheme. In setting out the commanders' vision to subordinates, the maritime concept of operations details the purpose of the operation, its phases and activities, the main effort, and how the entire operation would achieve the maritime tactical objectives and contribute to the achievement of operational and strategic objectives.

6.15 In particular, the maritime commander declares the main effort to direct the concentration of capability or activity. Main effort indicates what an MCC considers to be crucial to the success of the operation. This is given substance in a variety of ways.

a. Additional resources may be allocated to a subordinate commander assigned to bear the main effort.

b. Other commanders may be assigned specific tasks to support the main effort either directly or indirectly in line with the level of transfer of authority.

c. Whenever the simultaneous support of multiple efforts cannot be sustained, economy of effort elsewhere should be the first planning consideration in support of the main effort. This could be achieved through reallocation of forces, narrowing the boundaries, or further appropriate measures.

d. A scheme of manoeuvre describes how an MCC sees the operation unfolding; it sets the missions assigned to subordinate commanders in a broader context. It explains where and when the maritime force is to achieve its objectives so that subordinate commanders can understand their role in the overall plan.

e. When subordinates are cognizant of the MCC's main effort and priorities they can use their initiative to take timely and independent decisions and action, thereby optimizing tempo. A subordinate commander may declare an additional main effort to support that of the MCC.

f. The key themes and messages are the key ideas in the MCC's concept and intent that have been derived from the strategic narrative. They are designed for broad communication across all audiences and explain the overarching operational approach. They are supported by messages that are more narrowly focused on specific target audiences.

Operation plan

6.16 The MCC's OPLAN is developed in close cooperation with the joint force commander, other component commanders, and subordinate commanders; normally, it is approved at the joint force commander level since it also reflects cooperation with, and support from, other commanders in the joint operation. The MCC's OPLAN provides or addresses the following:

- analysis of the background to the crisis or contingency, as well as its causes and any assumptions and limitations upon which planning is based (it should clearly articulate the maritime component's role in the overall joint plan);
- the mission statement and maritime concept of operations (intent, scheme of manoeuvre, and main effort);
- the assignment of maritime force elements and prioritisation of logistic effort;
- command and control (C2) and liaison arrangements for the maritime force with the joint force commander and other components and arrangements for interagency coordination if and when required;
- increased detail and focus on selected aspects of the joint force commander's OPLAN (an OPLAN can trigger force preparation and the detailed coordination/synchronization of activities (e.g., fires, information, and manoeuvre) between subordinate maritime commands and other bodies); and
- identification of any requirement for subsequent branches and sequels as well as for support plans (e.g., by maritime air and submarine C2 elements).

6.17 Products requiring attention and closely linked to and deducted from both maritime concept of operations and maritime OPLAN development frame essential resources,

capabilities, and opportunities (limitations, respectively) affecting the later conduct of operations are:

- the maritime component command proposal for target categories and target sets;
- the maritime component command rules of engagement request; and
- the maritime component command input to the combined joint statement of requirements; theatre capability statement of requirements; and personnel/crisis establishment.

Mission statements

6.18 An MCC should write a mission statement—a clear concise statement of the task and purpose of the maritime force—for each subordinate commander. The mission statement contains the elements of who, what, when, where, and why; but seldom specifies how. There are three broad types of mission statement: single task, multiple task, and (usually for forces assigned as reserve) a list of contingent or be prepared to tasks.

a. Each mission statement contains a task, purpose, and unifying purpose (the "in order to or effect required" statement in relation to the concept of operations). Subordinates' freedom of action and scope for initiative should be made clear.

b. All the mission statements when taken together make up the MCC scheme of manoeuvre (otherwise some aspect has been left untasked).

Operational general message

6.19 An operational general message (OPGEN) conveys general matters of policy, general instructions, and general information about aspects common to all forms of warfare. Like most operational messages and orders, it conveys instructions in a standardized format, allowing for additional information and paragraphs if required. It also contains detailed instructions about the warfare responsibilities of the officer in tactical command (OTC).

Operational tasking message

6.20 An operational tasking message (OPTASK) provides supplementary instructions and supporting information to the maritime force; it complements the OPLAN and the OPGENs. OPTASKs can be used by maritime commanders to provide detailed guidance, operational intent, and clear tactical instructions for a particular event or warfare discipline. They are not necessarily limited by time or space. Amplifying signals and orders can also be used where deemed necessary. All supporting forces should review the tactical execution OPTASK. OPTASKs convey detailed information regarding specific warfare areas and resource tasking. The OTC provides guidelines for operational conduct using OPGENs, OPTASKs, and coordination supplements. OPTASKs should be read in conjunction with the OPGEN as they are subordinate documents.

6.21 As the operation unfolds, additional detailed orders can be provided when/as required: they can either be in the form of an update to one of the above documents or be issued as a fragmentary order.

6.22 Warning orders indicate the commander's intent to subordinates, who can then contribute to higher-level planning and conduct their own informed planning. The MCC should strike a balance between providing too little information too late and inundating subordinates with a succession of evolving, but potentially contradictory, directions. There is no prescribed format; warning orders are likely to become more definitive as the planning process progresses.

Section 3 – Considerations for the maritime operation within the stages of a joint operation

6.23 As the joint force commander develops the OPLAN, the maritime component command staff conducts more detailed supporting planning that considers many facets of the operation.

Analysis

6.24 **Framing the problem.** Framing the problem enables the MCC to visualize effects and to articulate their intent. A framework enables the commander and others conducting the operation to share a common language and understanding of what is required to be done. It helps to "operationalize" analysis and planning and assists with decision support. Understanding the framework and their contribution to it enables actors to achieve unity of effort. For commanders and their staff, it also highlights the links between the effects sought and the tactical activity needed to create them. It has utility across all levels of command.

6.25 Joint **intelligence preparation of the operating environment** (JIPOE)**.** JIPOE is a continuous process that is used to produce intelligence estimates, assessments, and other products to support decision-making. A separate discussion of how the JIPOE process is employed to develop understanding of the adversary and the maritime operating environment is needed as the products of the JIPOE process are foundational to many intelligence support activities at all levels of warfare. JIPOE is integral to planning and execution efforts in all military operations. The JIPOE process generates an understanding of adversary capability and intent by taking a holistic, systematic view of the adversary, the operating environment, and how that operating environment may favour or constrain the activities of adversary and friendly forces. It is also vital, as part of the JIPOE, to fully understand the human environment (gender, age, race, religion, culture, critical and valued infrastructure), their main threats, and insecurities and to identify vulnerable groups within the area of operations, thus assessing population actions or activities to own military decisions. By creating a baseline set of intelligence products (e.g., an order of battle analysis or a beach study), JIPOE provides a foundation that other specialized analytic processes (e.g., targeting) can use as a starting point. These products also help to identify intelligence gaps that can be addressed by the application of additional collection or analytic resources. The JIPOE process can be tailored

to meet numerous situational or level of warfare requirements. While the process has many components, each unique intelligence problem requires application of the steps to a greater or lesser degree.

6.26 Tasking, processing, and dissemination may involve close cooperation with partner nations and non-NATO entities as appropriate, clear presentation, and early background advice to commanders. Intelligence collection and surveillance continue throughout an operation, although its focus shifts from the strategic and general in the early stages to the operational and tactical and, hence, become more specifically military as the operation develops.

6.27 Maritime staff and maritime forces can collect a wide variety of useful intelligence and provide a significant surveillance capability (e.g., recognition of potential mining, suspicious shipping or air activities, warning of changes in an adversary's operating patterns, determining pattern of life, exercise and work-up programmes, and communications). Early assessment of the military capability of any enemy or adversary will play a significant part in assessment of the size and composition of forces needed to address a crisis. This information would support adequate framing of the operational problem and tailoring of their own operational approach.

6.28 The comprehensive understanding of the operating environment is a crisis-specific, cross-headquarters process, led by the intelligence staff, to develop a comprehensive understanding covering all political, military, economic, social, infrastructure, and information systems, including associated potential threats risks and opportunities, in support of planning and the conduct of operations/support of a wider campaign. With intelligence preparation of the operating environment, the staff develops an integrated understanding of the main characteristics of the operating environment, including its land, air/space, and maritime dimensions, as well as those systems of main adversaries, friends, and neutral actors that may influence maritime operations.

6.29 **Maritime situational awareness.** Maritime situational awareness is an enabling capability that contributes to information superiority in the maritime environment to achieve a common understanding of the maritime situation and to increase effectiveness in the planning and conduct of operations. It improves operational effectiveness and efficiency, is an enabler to trigger effective Allied military action against specific and potential threats to the Alliance, promotes synergies between nations, and ensures a better use of national resources. Recent trends in the maritime environment demonstrate that non-traditional maritime threats, counter-proliferation, and piracy are increasingly more important to Alliance security. These trends necessitate the tracking and managing of extensive and often obscure details, such as manifests about many more vessels, from merchant tankers to fishing trawlers and pleasure craft. Additionally, maritime situational awareness may include tracking and identifying people aboard those vessels and vessel ownership and understanding the global supply chain of cargoes and regional political, social, economic, and environmental trends.

For additional information on maritime situational awareness, see ATP-101, NATO Procedures for Maritime Situational Awareness and Responding to Incidents of Intrusion and Harassment and ATP-102, NATO Procedures for Maritime Intelligence, Surveillance, and Reconnaissance. For additional information on tracking merchant vessels and materials, see ATP-71, Allied Maritime Interdiction Operations.

Developing an operation plan

6.30 Developing an OPLAN follows the stages of the joint planning process as discussed in AJP-5, the *Comprehensive Operations Planning Directive,* and the previous section of this publication.

Force generation and preparation

6.31 The maritime component command may have any combination of forces assigned to conduct the campaign or operation.

a. Each nation may be requested to transfer operational control or tactical control of forces.

b. The standing naval forces may be assigned by the NATO Allied Maritime Command.

c. Allied Joint Force Command Norfolk, Allied Joint Force Command Naples, and Allied Joint Force Command Brunssum may transfer forces to the MCC from outside of NATO and may be assigned an additional coalition. The size and composition of the forces required to respond to a developing crisis are shaped by:

- the policy objectives and strategic concept of what the Alliance wants to achieve, how it wishes to act, and, being a multinational operation, what national contributions should be;
- an understanding of the military conditions for success—what the military commander needs to achieve to be successful;
- an assessment of the threat—and, therefore, the combat power and levels of protection that may be required to achieve the objective;
- the forces available and their readiness, which depend in part on the priority given by the various national governments to the policy objectives;
- the time available to respond; and
- the size and location of the area of operations.

6.32 Among the factors that are considered is the requirement for a robust, flexible, and responsive C2 system able to adapt to changing force levels and threats. The potential duration of the operation, the need to sustain or increase force levels, and logistic support

requirements throughout the operation also have a profound influence on force preparation. Whilst NATO has some standing naval forces at high readiness, the reality is that for most operations, a maritime force has to be put together, which may take time to assemble and may demand the MCC's thorough consideration on how to manage the integration of units and training requirements of the force in preparation of the mission.

Deployment of the force and theatre entry

6.33 **Deployment operations.** Deployment operations are the activities required to plan, prepare, and move forces and materiel from home station to a destination required to execute a mission. The focus of these operations is to globally position forces in time to conduct military activities, including campaigns and major operations, and to respond to other contingencies.

6.34 Deployment planning and execution decisions are based on the anticipated operating environment to be encountered in the area of operations. Understanding the operating environment helps commanders anticipate the results of various friendly, adversary, enemy, and neutral actions and how they impact operational depth and reach, as well as mission accomplishment.

6.35 Deployment to a theatre of operations involves: embarkation and sailing the force from various national home bases or often from their current locations forward-deployed; passage to the area of operations; transit; and arrival in the theatre of operations in a posture appropriate to the threat and mission.

6.36 Coordination of the deployment requires detailed planning and close liaison with diplomatic posts, other civil authorities, Allied military authorities, and, probably, foreign government agencies. Consideration is given to the legal status of the forces, authorised rules of engagement, and the use of civil transport, such as chartered ships.

6.37 The routing of forces should be carefully considered to ensure their security. The protection of shipping, forming a part of a maritime force and providing strategic lift into theatre, may take on the characteristics traditionally associated with the wider wartime task of protecting maritime trade and strategic sea lines of communication. This can take different forms and depends upon whether the objective is to deter attacks or to defend against them.

6.38 **Force integration.** Under the operational control of the joint task force commander, through J3, integration is the process of conducting the synchronized transfer of deploying and combat ready units into the higher echelon within the multinational joint force to be capable of meeting the joint task force's operational requirements. Some elements of integration could occur at any stage during deployment. Integration completes deployment and may include acclimatization, training, and situational awareness. Integration is complete when the receiving commander establishes C2 over the arriving unit and after having achieved full operational capability.

6.39 During this stage, nations retain control of their maritime forces until released to NATO, through the transfer of authority mechanism. Transfer of authority assigns forces to the operational command of SACEUR and should take place as early as possible during the deployment process. SACEUR normally delegates operational control of NATO or attached forces within a joint operations area to the joint task force commander, who may in turn transfer operational control or tactical control to the MCC.

For additional information on the deployment of forces, see AJP-3.13, *Allied Joint Doctrine for the Deployment and Redeployment of Forces*.

Conduct of operations

6.40 The MCC and maritime component command staff execute the operation in accordance with the OPLAN. Previous chapters of this publication highlight maritime capabilities, maritime activities, and the maritime contribution to joint operations. Additionally, aspects of the role of the commander and staff as well as nature of command, command methods and authorities, command relationships, task organization, staff structure, and staff elements are addressed.

6.41 **Operations management.** Through operations management, the MCC integrates military actions and coordinates activity between maritime forces and other military forces and civilians to achieve coherency.

a. When two or more force elements operate in the same engagement space, their activities should be coordinated and, where necessary, integrated. Where these activities are concurrent and cannot be separated, they should be subject to some form of control.

b. Synchronization enables otherwise discrete force elements to be concentrated at a time and place that is anticipated to be decisive. Dynamic coordination and synchronization of actions enables greater interaction between force elements and the potential for better mutual support to achieve coherency across force elements for increased scope of mission command, enhanced tempo, and efficiency. Thorough engagement space management and shared (common) situational awareness are required.

c. Engagement space management should involve all assigned forces and all cooperating national contingents operating in the maritime component command area of operations and civilian authorities. The commanders and other leaders should try to achieve at least unity of purpose with others, even if they lack unity of command.

d. Shared situational awareness provides own forces the knowledge of each other's location, where enemy forces are, and the location of neutral agencies (e.g., the International Committee of the Red Cross and civilians), as well as their intentions and the freedoms and constraints they are operating under. In broad terms, the common operational picture comprises different georeferenced layers, consisting of status,

capabilities, and possible intentions of own and enemy (as well as of other groupings of interest) posture and sustainability, important locations, critical infrastructure, and actions. Information on the physical environment is also important.

6.42 **Information management.** Information management is how an organization manages information resources and optimizes access to information. Knowledge sharing and understanding within the staff is key, as all staff functional areas rely on it for best efficiency, tempo, interaction, and product output.

6.43 The effective flow of information requires the information to be:

a. **In the right place and the right time.** The requirements for specific types of information often are predictable. Positioning the required information at its anticipated points of need speeds the flow and reduces demands on the communications system (e.g., using portals and folders to post required information).

b. **Mobile.** The reliable and secure flow of information should be commensurate with the headquarters' mobility and operating tempo. Information flow supports vertical and horizontal data sharing.

c. **Accessible.** All levels of command who have a need to know should be able to pull the information they need to support concurrent or parallel planning and mission execution. If possible, information is channeled to the required user via automated means, reducing manual exchange (e.g., graphic depiction of forces in a current operations picture).

d. **Fused.** Fusion is the logical blending of information from multiple sources into an accurate, concise, and complete summary. The main goal of information management is to reduce information to its essential elements in usable formats.

6.44 **Commander's critical information requirements.** The commander focuses the staff by designating certain information as critical. These commander's critical information requirements change over time as the situation continues to evolve. Properly developed information requirements ensure that subordinate and staff effort is focused, resources are employed efficiently, and decisions can be made in a timely manner. Commander's critical information requirements are limited since they are linked to the critical decisions the commander anticipates making. This focuses the commander's subordinate commanders' and staff's efforts. They are central to effective information management, which directs the processing, flow, and use of information throughout the force.

6.45 Mission analysis highlights gaps in the critical information required for subsequent command decisions. These requirements are expressed with the commander's critical information requirements. Commander's critical information requirements cover all aspects of the commander's concern, including friendly forces information requirements, essential elements of friendly information, and priority intelligence requirements.

6.46 **Battle rhythm.** The maritime component command battle rhythm (with its repeating boards, groups, and teams activities and corresponding flow of estimates, assessments, decisions, and resulting plan adjustments, orders, and reports) forms the process setup to operationalize the maritime component command headquarters' decision cycle: "Monitor-Assess-Plan-Direct."

6.47 **Operations assessment**. The purpose of an operations assessment is to monitor and validate the plan during execution and is a significant part of the decision-making process. The maritime operations assessment process starts with the support of the maritime component command's permanent assessment cell to the maritime operations planning group and the development of a data collection plan during OPLAN development. During execution, data collection, processing, and analysis are ongoing. Assessment efforts are continuous and integrated throughout maritime component command activities. For additional information on operations assessment, see AJP-3, the *Comprehensive Operations Planning Directive,* and the *NATO Operations Assessment Handbook*.

a. In the battle rhythm, prepared and coordinated by the assessment cell, the members of the assessment working group analyse data, and the results are presented with recommendations to the MCC in the assessment board. The assessment board seeks the commander's direction and guidance to adjust ongoing actions or the plan and prioritize resources. The assessment board record of decisions enables other groups and boards to act on the MCC direction and guidance resulting from the assessment board. The MCC direction and guidance feeds the maritime component command assessment report to inform own maritime component command staff and the joint force commander's and other components' battle rhythm events.

b. The maritime component command's assessment cell should analyse the joint force commander's desired effects and objectives, develop measures of effectiveness and measures of performance that are relevant to the maritime component command's objectives, ask for clarifications if necessary, and integrate assessment measures and collection requirements into the concept of operations, OPLAN, or operation order. The assessment cell ensures any maritime component command's measures of effectiveness and measures of effectiveness indicators are consistent with, and not contrary to, the joint force commander's desired effects and objectives.

Termination and transition

6.48 It is likely that once the objective(s) of an operation is (are) achieved, effort will be directed at supporting increased stability as well as the handover of responsibility to regional organizations, non-governmental organizations, and international organizations.

6.49 Elements of the maritime force might find themselves conducting tasks designed to improve stability, even if other elements of the force are still engaged in combat. As military activities draw down, transition to another stage, or even to another operation with different objectives, the force usually adopts one of two broad options: facilitating the transfer of authority to civilian authorities or acting as an occupying force. Military resources may also

be diverted at any stage to contribute to humanitarian assistance, either in the form of life saving or in life-sustaining aid.

6.50 Redeployment is the transfer of deployed forces and the transfer or disposal of accompanying materiel from one area of operations to support another joint force commander's operational requirements within a new area of operations or home/demobilization station as a result of end-of-mission or rotation. Planning for the recovery and/or redeployment of forces begins well before an operations successful conclusion and needs to be planned as carefully as the deployment to the area of operations. JIPOE addresses to what degree a potential threat can interdict, disrupt, or block redeployment operations. Indeed, there may be the added complication of recovering unusable equipment and a political requirement for a speedy extraction and return. Amphibious forces may need to use an intermediate staging base to arrange loads prior to another operation.

6.51 Moreover, if objectives have not been achieved and an amphibious withdrawal is to be made in the face of continuing or escalating conflict, it becomes even more problematic. There may be a need to increase combat power ashore before a withdrawal can take place. Command and control may be difficult and fragmented. An afloat headquarters may provide the most secure and capable communications to assist in this respect, and the requirement to provide protection, logistics, and medical support for both the maritime forces supporting the withdrawal and the forces being withdrawn still remains. Protection of a withdrawal, like a landing, but in reverse, requires the establishment of necessary levels of sea control.

6.52 Similar to deployment operations, redeployment operations are the sum of activities required to plan, prepare, and move forces and accompanying materiel from origin to destinations within a new area of operations or to home station to achieve the operational status required to execute a mission or demobilize.

6.53 Like deployment operations, redeployment planning decisions are based on the operating environment at the time of redeployment. The authority to de-activate and redeploy forces and to execute the OPLAN is retained by the North Atlantic Council and delegated through the Military Committee to SACEUR. The joint task force commander is responsible for redeployment planning and execution. This planning should be considered at the outset of an operation and continually refined as the operation matures. The individual activities within each phase of redeployment are similar to those described in the deployment process.

For additional information on redeployment operations, see AJP-3.13.

Identify lessons

6.54 Lessons learned are an important part of ensuring that the planning and execution of NATO operations and the development of Alliance capabilities benefit from best practices. Lessons identified, once resolved, are instituted in doctrine, training and exercises, and operations. Lessons should be collected and submitted in accordance with guidance and

written at the lowest possible classification level to allow for widest dissemination. Additionally, lessons should be collected and submitted for each nation's own purposes and written for release to other nations as much as possible.

Section 4 – Maritime targeting

6.55 The purpose of targeting is to plan, integrate, and synchronize all capabilities into operations, which enables the commander to select the most appropriate actions to generate the desired effects to achieve the mission. Targeting is not conducted in isolation and should be coherent with and support not just the current operation but also the NATO strategic communication strategy and the end state. The targeting process provides a methodology that aids decision-making, linking effects with the appropriate prosecution of prioritized targets and the assessment of any effect generated. The process is flexible enough to be adapted to any type of operation.

6.56 Targeting involves the process of selecting and prioritising targets (which are classified as being either a facility, individual, virtual entity, equipment, or organization) and matching the appropriate response to them, taking account of operational requirements and capabilities. Targeting systematically analyses and prioritizes targets considered for possible engagement or action and matches appropriate capabilities to them to create specific lethal or non-lethal effects, accounting for operational limitations and the results of previous assessments. Targeting emphasizes the identification of resources and activities the adversary can least afford to lose or that provide the greatest advantage (high-value target) and whose loss significantly contributes to the success of the friendly course of action, such as a high-payoff target. Additionally, targeting threats to friendly centres of gravity or critical capabilities or requirements is essential. Targeting links desired effects to activities and tasks. This contributes to creating the decisive conditions necessary to achieve the objectives. One critical aspect in the nomination of maritime targets is the fact that individual platforms and vessels are targeted independently from their crews. To target a specific platform holistically, the vessel itself is nominated and its crew is nominated.

6.57 The maritime targeting cycle is a continuous process that is not always time constrained or rigidly sequential, as some steps in various phases may be conducted concurrently. It provides a framework to describe the phases and steps that are accomplished to successfully provide targeting products to the maritime and joint force. The maritime targeting cycle supports maritime planning and execution of operations by providing flexibility required to support the concept of operations as the operating environment changes, opportunities arise, and plans change.

6.58 The MCC establishes objectives and provides guidance and intent to focus and guide maritime planning and execution to achieve operational and tactical objectives to attain the end state. From these objectives, activities and tasks are planned and executed to create the desired effects (e.g., compelling an adversary to comply with specific requirements or modify their behaviour) necessary to accomplish the assigned mission. A target's operational

importance is determined by conducting an analysis to determine if engaging the target is consistent with planned operations to achieve the commander's objective(s).

6.59 Targets should be logically and causally tied to objectives at all levels—strategic, operational, and tactical. Misinformed targeting (e.g., poor intelligence, unclear commander's guidance, or inaccurate target identification) at any level can have unintended effects at other levels. For example, improper targeting at the tactical level can create significant negative effects at the operational and strategic levels, such as feeding adversary propaganda, civilian casualties, or reducing cohesion within the joint force.

6.60 Maritime targets may be nominated by task force or task group commanders to support the scheme of manoeuvre. The maritime targets may be selected from the joint target list or nominated for inclusion in the joint target list. Most are in the maritime operations area. They may be addressed with organic maritime capabilities or nominated for other joint forces action.

6.61 Maritime targeting has also established the following target lists:

a. **Maritime target nomination list.** A list of validated targets selected from the joint target list and restricted target list that are either outside of the maritime area of operations or inside the maritime area of operations for which the maritime force is unable to achieve the desired effect. The maritime target nomination list is delivered to the joint targeting working group target nomination list for consideration for inclusion on the joint prioritized target list. Some nations refer to the joint prioritized target list as the joint integrated prioritized target list.

b. **Maritime prioritized target list.** The maritime prioritized target list is the derived and maritime specific part of the joint prioritized target list for the MCC and its allocated forces. Thus, it contains a list of validated targets selected from the joint prioritized target list inside the maritime area of operations that the maritime force intends to affect with organic maritime capabilities as part of their scheme of fires and scheme of manoeuvre.

c. **Maritime dynamic target list.** A list usually depicted as the maritime dynamic targeting matrix for maritime critical targets.

6.62 Once the maritime component and subordinates identify, research, develop, vet, and validate potential targets, the targets are nominated by the MCC and placed onto target nomination lists that are compiled into a draft joint integrated prioritized target list, coordinated with the components, and submitted to the joint force command for approval. Once approved, the list is transmitted to all components and appropriate agencies as the joint force command's approved joint integrated prioritized target list, which includes the maritime prioritized target list with maritime forces allocated, and focuses targeting efforts for a designated period.

Section 5 – Other considerations for planning and conduct of operations

Gender perspective

6.63 Maritime forces (less marines) may have less interaction with the local population than land forces but should understand gender implications as they support the land component commander, who would be more fully engaged with the local population during non-combatant evacuation operation and humanitarian assistance. Maritime forces may need to consider gender aspects during safety of life at sea activities and maritime interdiction operations where NATO troops may come in contact with vulnerable men, women, boys, girls, and/or marginalized groups. It is equally necessary to be aware of gender aspects within the maritime force at all levels (e.g., when establishing berthing accommodations).

Human security

6.64 Human security is a multi-sectoral approach to security that gives primacy to people and includes topics like combatting trafficking in human beings; protection of children in armed conflict; preventing and responding to conflict-related sexual violence; protection of civilians; and cultural property protection. For NATO, the term human security relates to risks and threats to populations where NATO has operations, missions, or activities and how to mitigate and respond to them, recognising the importance of reducing the impact of its actions on civilian populations in conflict zones and wherever else it may be conducting activities. The critical objectives for this approach are to understand the human environment (e.g., culture, history, demographics, strengths, and vulnerabilities), safeguard civilians from harm by belligerents, facilitate access by the population to basic needs and services, and contribute to a safe and secure environment through support to the local government and its institutions.

Personnel recovery

6.65 Personnel recovery is the sum of military, diplomatic, and civil efforts to effect the recovery and reintegration of isolated personnel. Personnel recovery involves a balance of activities between the three elements of the personnel recovery system: commanders and staffs, recovery forces, and isolated personnel.

6.66 The joint force commander has overall responsibility for personnel recovery in the joint operations area. Personnel recovery responsibilities are executed through the joint personnel recovery centre, staffed by appropriately trained personnel, and embedded in the joint staff (usually in the joint operations centre) or by designating a component commander's personnel recovery coordination cell to function as the joint personnel recovery centre. The operation's joint force commander and staff conduct a thorough mission analysis that considers all available personnel recovery options and capabilities to successfully plan recovery operations within the joint operations area.

6.67 Component commanders plan, coordinate, conduct, and control personnel recovery operations in assigned areas of operations. The maritime component command exercises personnel recovery responsibility through the personnel recovery coordination cell. Even if a component commander conducts a personnel recovery mission using assigned forces, the joint personnel recovery centre should be notified for deconfliction and oversight.

6.68 Maritime forces can be used to search and recover military or civilian personnel who are separated from their unit or organization, resulting in a loss of positive and/or procedural control. Combat aircraft can be used to protect isolated personnel until the arrival of transport aircraft, small boats, or land forces on scene to execute the evacuation. Commanders of naval forces are also charged with maintaining SAR plans for their forces. Such plans are to provide for liaison with national SAR authorities to provide mutual assistance in SAR operations and assistance of mariners in distress. More detailed information regarding SAR ops is provided in AJP-3.7, *Allied Joint Doctrine for Recovery of Personnel in a Hostile Environment*.

Detention

6.69 Maritime operations can potentially lead to detention situations whose rules vary according to the applicable legal framework. In situations of armed conflict, international law states that prisoners of war must be interned on premises located on land. This means that internment on ships is prohibited. This rule is intended to ensure that prisoners of war are interned in a relatively safe and healthy environment. However, there are some exceptions to this principle, such as when picked up at sea or when prisoners of war are wounded or sick, but only as a temporary measure. In all circumstances, detainees are to be treated humanely. Legal advisors should be consulted prior to engaging in any detention operations to ensure that all additional obligations are also respected.

Obligations to wounded, sick, shipwrecked and dead

6.70 Maritime operations may face situations of protected people at sea or private vessels in distress carrying people, including people in need of international protection. The duty to rescue persons in distress at sea is a fundamental rule of international law. It applies during both peacetime and wartime, albeit with the necessary adjustments to take into account the different circumstances. In peacetime, international law requires all states to oblige ships flying their flags to render assistance to persons “in distress at sea” and requires their shipmaster to render assistance to “any person found at sea in danger of being lost” and to “proceed with all possible speed” to the rescue of persons in distress. The obligation applies regardless of the nationality or status of such persons or the circumstances in which they are found and in all sea zones. This obligation is widely considered customary law applicable to all ships in all sea zones. During wartime, the *Second Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea* states that belligerent parties must take all possible measures to search for and collect the wounded, sick, shipwrecked, and dead at sea after engagements. There are also specific

obligations in relation to accounting for the shipwrecked, wounded, sick, or dead persons belonging to the enemy, who fall into the hands of NATO nations. The dead must receive respectful and honourable treatment, burial, and respect for their resting.

Protection of civilians

6.71 Protection of civilians is relevant to all three core tasks of NATO. A sound approach to the protection of civilians in operations based on legal, moral, and political imperatives is important for NATO's credibility and legitimacy. Protection of civilians includes all efforts taken to avoid, minimize, and mitigate the negative effects that might arise from NATO and NATO-led military operations on the civilian population and, when applicable, to protect civilians from conflict-related physical violence or threats of physical violence by others, including through the establishment of a safe and secure environment. During the conduct of maritime operations and missions, training, education, exercises, when implementing lessons learned, and whilst conducting defence and security-related maritime capacity building activities, commanders shall share best practices and experiences on protection of civilians, particularly civilian harm mitigation.

Chapter 7 – Joint functions in maritime operations

7.1 The joint function framework assists commanders to integrate political, military, and civilian actions through the operational domains. The joint functions describe the detailed capabilities of the force. In any operation, these joint functions are to be considered, although the individual function's contributions, significance, and demands vary. The joint function framework uses a combination of manoeuvre, fires, information, and civil-military cooperation to affect the audience's attitude and behaviour. It is "informed and directed" by the joint functions of command and control (C2) and intelligence and "supported" by the joint functions of sustainment and force protection. See Figure 7.1 for the relationship between all the joint functions.

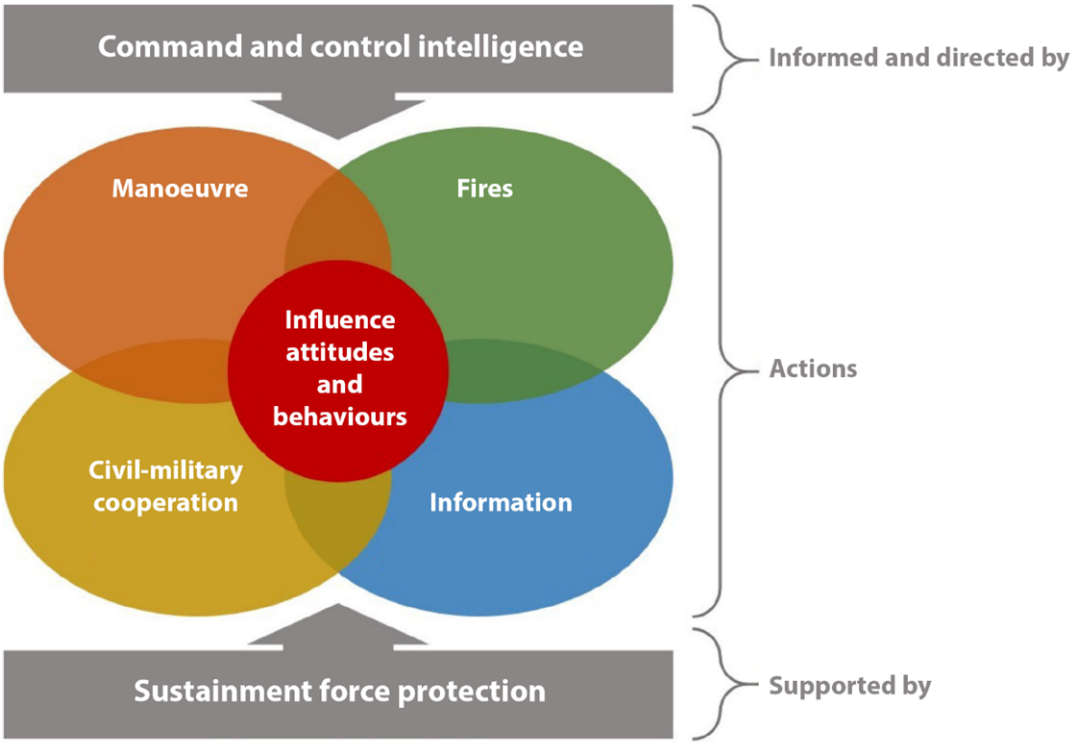

Figure 7.1 – The joint function framework

Manoeuvre

7.2 Maritime operations use manoeuvre to employ ready-to-fight combat forces at sea and ashore to achieve a position of advantage over the enemy. The ability to conduct maritime operations from the sea, without the requirement for diplomatic clearance or host-nation support, provides the joint force commander with flexible and sustainable options. Maritime forces can alleviate unnecessary political and logistical burdens on host nations by operating from the sea base and reducing the footprint ashore. This adaptability and versatility enables additional options for the joint force commander that do not limit the activities of the other components. As the operating environment intensifies into conflict, tactical commanders

execute warfare area missions to eliminate enemy capability and forces. These tactical actions can encourage enemy de-escalation, expand areas of relative sea control necessary for further naval or joint force activity, protect shipping necessary for joint force sustainment, enable additional joint force freedom of action, or deliver forces or resources to designated areas. Maritime forces can be manoeuvred freely while at sea, rarely restricted to normal egress points, thus placing the enemy at a disadvantage as enemy intelligence resources are stretched to locate Alliance forces.

Fires

7.3 The combat power of a maritime force is a combination of its combat systems and its ability to bring fires to bear effectively and integrate with all other joint functions. The ability to conduct fires is not constrained to just weapon systems, maritime security, and military engagement; it can, and in many operations also include non-lethal effects. It therefore encompasses the joint force's applied fighting power orchestrated with the capabilities applied by partners. Individual units should be given suitable tasks, and commanders should be given the necessary direction so that they can coordinate their efforts to execute the concept of operations.

7.4 Non-lethal weapons are explicitly designed and primarily employed to incapacitate or repel persons or to disable equipment, while minimising fatalities, permanent injury and damage to property and the environment. Non-lethal weapons are intended to have reversible effects on personnel and equipment. Planners should consider non-lethal weapons to enhance mission effectiveness, facilitate lethal engagements by resolving complex situations and isolating the threat, reduce risk to joint forces, and mitigate collateral damage, including civilian casualties.

Command and control

7.5 Command and control should be robust, flexible, and capable of dealing with a rapidly changing situation. It should permit swift decision-making so that opportunities can be exploited as they are provided. Additionally, it should support the principle of centralized direction and decentralized execution, thus allowing and encouraging freedom of action within the overall concept of operations. Where a maritime operation is conducted in a broader joint setting, then the support and supporting relationships between components needs to be clearly defined. If the C2 arrangements, including task organization, command authority, and communications systems, are inadequate or lacking in some way, an operation may be undermined and an entire mission placed in jeopardy. While an operation never succeeds by effective C2 alone, it will undoubtedly fail if the C2 arrangements break down.

a. To achieve unity of effort and peer-to-peer relationships within and across a coalition force, a commander may require the establishment of a mission network in which all partners operate at the same mission-specific classification and releasability level, using their respective communications and information systems and C2 capabilities. Federated mission networking is the Alliance's approach to unifying coalition networks between the

North Atlantic Treaty Organization (NATO), NATO nations, and non- NATO entities to conduct the full range of operational activities within NATO-led operations. When establishing a federated mission network, the generation and use of joining, membership, and exit instructions provide a required set of mission-specific implementation guidance, polices, and best practices to present and future mission network contributors. Regular and frequent practice in establishing a federation of mission networks during exercises should improve NATO and NATO nation ability to establish and operate using current materiel and non-materiel capabilities. Practicing the establishment of a federated mission environment also contributes to common processes and best practices within NATO organizations that are consistent and coherent regardless of the theatre of operations.

b. NATO forces need to be rapidly deployable and sustainable in austere environments regardless of the duration and tempo of operations. Accordingly, this requires that NATO maritime forces be agile, joint, combined, and truly interoperable in character and design; enabling them to be employed wherever and whenever needed. Additionally, the military interacts with NATO and non-NATO entities; consequently, a more comprehensive approach to operations is required. The combination of national operations and/or the handover from national-led operations to NATO-/coalition-led operations also provides a significant degree of complexity, resulting in diverse communications information requirements.

7.6 **Communications information services.** Communications information services support information collection, situation assessment, decision-making, collaboration, and mission execution and control from the strategic level to the tactical level. The capacity of the networks and systems meet the information exchange requirements of the forces by efficient and timely transfer of data through appropriate network and bandwidth management. Interoperability is a crucial element in supporting the information flow. Therefore, it is essential that the deployed forces and elements involved in military operations have agreed interoperable services and apply agreed standards.

7.7 Command and control in a denied and degraded environment is how a commander commands and controls forces when the capability of communications networks has been reduced or removed due to enemy action or friendly measures taken to mitigate or pre-empt enemy action. The maritime component commander (MCC) ensures all necessary and appropriate steps are completed to ensure a robust communication network and preplanned mitigation measures are in place to support command and control in a denied and degraded environment.

7.8 Command and control in a denied and degraded environment may be encountered by NATO forces for a variety of other reasons, including technical equipment faults, deliberate enemy actions, or network congestion. It affects shared situational awareness, the synchronization of data between platforms and ashore, and application and database performance (particularly those designed for the strategic network), which ultimately affect shared situational awareness.

a. NATO's communications capabilities are designed for operations within a command and control in a denied and degraded environment. Communications bearers and networks should be resilient and ready to transition from a completely benign environment where all access through its communication bearers are fully functional or to a point where maritime units are completely denied assured access. Maritime forces should also be experienced in operating at all levels of conflict and command within a command and control in a denied and degraded environment. This requires realistic individual and collective training and integration of command and control in a denied and degraded environment into tactics, techniques and procedures development. Training activities provide exposure to command and control in a denied and degraded environment, but more complex training is required. Teams should be able to reconfigure communications routing paths to counter the denied or degraded environment. Sub-net relay, multipath switching, frequency shifting, and many other options should be considered to re-establish vital communication links. Synthetic training should routinely include command and control in a denied and degraded environment so that staffs can experience the full spectrum of effects, including fully disconnected operations. Training for operations in a command and control in a denied and degraded environment is especially critical for task group commanders and staff, who are critically reliant on shared situational awareness and the production of the intelligence preparation of the operating environment identifying when NATO forces are most susceptible to entering a command and control in a denied and degraded environment.

b. Tactical-level warfare commanders should be capable of sustaining operations and C2 relationships under a denied or degraded environment. Ultimately, the threat, rules of engagement, and task force/task group communications and control capabilities determine whether or not the officer in tactical command executes centralized or decentralized control and how other principal warfare commanders design their fighting plans and preplanned responses. During command and control in a denied and degraded environment, communications personnel should be capable of identifying affected bearers and networks, lost and residual capabilities, and information availability. Communications personnel should be included in command and control in a denied and degraded environment training scenarios, allowing them to practice their core role in fighting the network. Automated and assistive technologies are also needed to enable communications personnel to quickly identify and respond to dynamic command and control in a denied and degraded environment across complex bearer and networks architectures.

7.9 In developing the communication plan the maritime component command should:

a. **Establish liaison early**. In multinational operations, liaison teams can counter interoperability problems. Their importance as a source of both formal and informal information exchange cannot be overstated. Requirements for liaison should be established early.

b. **Identify information requirements early.** The demand for information often exceeds the capabilities of the communications system within joint and multinational commands. It is crucial that the joint force commander identifies early communications system requirements external to the command or required support from national, multinational, and host-nation resources.

c. **Standardize principles.** Standardization of principles and procedures for communication with partners is essential.

d. **Coordinate agreement in advance of military operations.** Logistics arrangements for communications should be coordinated in advance of all phases of military operations with probable multinational partners.

e. **Determine releasability.** This planning consideration pertains to nations security procedures and includes communications security material and equipment, and multinational connectivity to each nation's networks.

f. **Identify system boundary protection criteria.** All established networks that involve multinational communication systems should include boundary protection (e.g., firewalls, guards) with security classification and restrictions, in accordance with all the pertinent security policy directives and instructions.

g. **Identify cross-domain (network) criteria.** Information flow between different network security domains requires the use of a cross-domain (network) solution.

h. **Provide/acquire linguists, interpreters, and translators.** Linguists, interpreters and translators are crucial to ensure communications are understood in the correct context.

Intelligence

7.10 The role of intelligence is to contribute to a continuous and coordinated understanding of a complex maritime operating environment. It informs the commander, supports planning and execution, counters enemy deception and surprise, supports friendly deception efforts, and is crucial for operations assessment. Commanders define type, quantity, and quality of intelligence required to keep focus on relevant factors to inform decision-making. There are always gaps in a commander's knowledge, particularly in the matter of enemy intent, and a commander should be prepared to take decisions in situations of incomplete intelligence. Maritime intelligence, surveillance and reconnaissance (ISR) synchronizes and integrates the planning and operation of sensors; assets; and processing, exploitation, and dissemination systems in direct support of current and future operations in support of the joint ISR process. In brief, maritime ISR is the application of processes and mechanisms using all available sensors and assets to understand the operational environment where maritime forces carry out their mission. Maritime ISR encompasses all intelligence collecting and operations capabilities to synchronize and integrate the planning and operation of all maritime collection capabilities. This includes all steps of task, collect, process, exploit, and disseminate of the

joint ISR process. As such, ISR is considered a critical enabler for maritime activities, ranging from combat to humanitarian assistance. Maritime ISR, as an integral part of the joint ISR process, supports the collection phase of the intelligence cycle by coordinating, integrating, deconflicting, and synchronizing the collection of data and information assigned to the available maritime ISR assets. The maritime ISR results are further processed within the intelligence cycle and fused with intelligence results from other collection disciplines and sources to produce all-source intelligence products to meet the commander's intent.

For additional information on maritime intelligence, surveillance and reconnaissance, see ATP-102, *NATO Procedures for Maritime Intelligence, Surveillance, and Reconnaissance*.

7.11 Sea-based surface platforms have varying degrees of reconnaissance and surveillance capability. Radar, sonar, and underwater acoustic surveillance components are required for defence of maritime forces. These facilities monitor enemy submarines, surface ships, aircraft, and surface targets. Other capabilities, such as signals intelligence gathering assets, can support a variety of military activities, ranging from monitoring arms control treaty compliance to establishing enemy orders of battle and preparation of combat strike plans. Deployment aboard ships provides sea-based joint ISR assets with several advantages. Ships have greater power and load-carrying capabilities than some other collection platforms, enabling them to carry heavier and bulkier equipment that may have greater information gathering and processing capabilities. Ships also possess the advantages of mobility and sustainability, enabling them to position and reposition joint ISR assets. Access is relatively unrestricted because maritime areas of interest to reconnaissance and surveillance are often close to international waters. Many classes of ships have organic air assets that can extend shipboard sensor horizons and provide valuable on-site reconnaissance. Submarines, on the other hand, are invaluable platforms for clandestine reconnaissance operations in waters adjacent to hostile territory. Considering their long-time endurance, unmanned air vehicles and unmanned surface vessels can also be used for gathering continuous intelligence by conducting reconnaissance and surveillance operations in the maritime environment. Maritime forces operating from ashore can also contribute to the recognized maritime picture.

Information

7.12 Information is a military function to provide advice and coordination of military information activities to create desired effects on the will, understanding, and capability of enemies, adversaries, and other North Atlantic Council approved parties in support of Alliance mission objectives. Key enablers are strategic communications, information operations, psychological operations, and military public affairs. All military information activities should be closely coordinated with overall strategic communications and NATO military public affairs to ensure consistency in the messages to external audiences and to promote overall effectiveness and credibility of the campaign. Maritime forces provide capabilities to execute information activities.

7.13 Commanders should assure an efficient information flow within their own staff, through all levels of subordinated forces, and to superior and adjacent commanders. Additionally,

commanders should establish sufficient information management staff and feasible data handling as well as engender a culture of information sharing throughout the force and with partners and non-military actors, finding a balance between security (the need to protect information) and effective civil-military cooperation.

Sustainment

7.14 Forces and their fighting power need to be sustained through all phases of operations. Sustainment provides for the comprehensive provision of personnel, logistics, medical, military engineering support, and finance and contract support necessary for Alliance operations and missions throughout all phases of the operation.

7.15 **Afloat support.** Afloat support consists of one or more support ships for replenishment at sea to provide petroleum, oil and lubricants, ammunition, dry cargo (including food and supplies), repair parts, medical facilities, repair capabilities, and personnel to operating forces. Unlike dedicated naval auxiliary ships, most merchant vessels used by navies in times of crisis lack the ability to transfer items by line transfer. However, they can often be used to conduct replenishment at sea operations using helicopters and boats. The MCC assigns a force logistic coordinator to coordinate afloat logistic support and interface with shore-based logistics. Larger forces may be divided into smaller groups with corresponding group logistic coordinators below the force logistic coordinator.

For additional information on the force logistic coordinator and group logistic coordinator, see ALP-4.1, *Multinational Maritime Force Logistics.*

7.16 **Ashore support**. Specific logistic sites and facilities (like forward logistics sites) are determined by the logistic needs and geographic distribution of the maritime forces. It is the shore logistic coordinator's responsibility to coordinate this ashore support for the maritime force in close cooperation with the joint logistics organization, host nations, nations, and contractors. The shore logistic coordinator function is normally covered by the maritime component command N4. In specific situations it can also be executed by a joint logistic support group, provided it contains sufficient capabilities in both maritime expertise and manpower.

7.17 **Joint logistics support**. For joint operations, usually a joint logistic support group headquarters is established at the component level to coordinate and/or provide theatre-level logistic support for the joint force. Although, a joint logistic support group headquarters may assume the role of the shore logistic coordinator, a joint logistic support group headquarters does not replace a forward logistic site. Ideally, a joint logistic support group headquarters includes a maritime or ship support cell in its structure to advise the joint logistic support group commander on maritime issues concerning both support to maritime forces and support that maritime forces may be able to provide to the joint task force (e.g., additional helicopter support if available).

7.18 **Resupply support.** Resupply is the support required to replace the consumption of the classes of supply. Due to the limited availability of air and sealift assets and the fact that maritime units generally operate over a wide area, this type of logistic support is the most challenging. To meet joint force integration and prioritisation requirements, maritime force logisticians require direct support from the joint logistic support group commander.

7.19 **National support.** The movement of passengers, mail and cargo, ammunition, repair parts, subsistence stores, and/or unique petroleum, oils, and lubricants between national facilities and multinational logistic support sites is the responsibility of each nation with forces assigned. However, increased NATO coordination of assigned logistic support is essential.

For additional information on national support, see ALP-4.1.

7.20 **Host-nation support.** In common with the other components, and where appropriate, the maritime component uses host-nation support for services, such as port facilities, accommodation, transport, food, and water. Host-nation support agreement is also required for establishment and operation of a forward logistic site.

7.21 **Medical Support.** Medical support is a vital element of sustainment, significantly affects the moral and physical component of fighting power, and enhances force protection. Afloat medical support largely depends on the availability of platforms suited to accommodate medical treatment capabilities. Many ships can only carry a limited organic medical capability. Reinforcement of embarked medical treatment facilities is difficult when they are deployed. Most maritime platforms are not dedicated exclusively to a medical role or capability package. This normally creates a tension between medical and operational tasks. In the Alliance, nations remain responsible for the provision of medical support for their own forces; however, in operations, the medical structures, capabilities, and processes serve the interest of all.

7.22 The MCC establishes a continuum of care and set up medical C2 under the maritime component command medical advisor and with the subordinated medical advisor at task force level and further general medical officers at task group levels and below. The maritime component command medical advisor coordinates and assesses the overall medical support and situation within the maritime component command area of operations to meet the established standards of medical care throughout the operation for own forces or, dependent on the mission, to provide medical support to other entities (e.g., in military assistance to humanitarian assistance).

7.23 When a forward logistic site/joint logistic support group is deployed, the staff usually includes medical expertise. This includes specific medical responsibilities with respect to the theatre's medical C2 structure (forward logistic site/joint logistic support group medical advisor and forward logistic site/joint logistic support group headquarters medical director), the coordination of patient evacuation, medical input to the evacuation of patients out of theatre, the coordination and possible control of medical assets assigned to the forward logistic site/joint logistic support group, and medical resupply. Shore medical support can be

accomplished by various medical support detachments and facilities associated with the shore logistic coordinator staff or a forward logistic site.

7.24 Besides organic capabilities afloat, including rotary wing assets qualified for medical evacuation, the maritime component command usually uses medical treatment facilities ashore and medical evacuation assets from NATO members or a host nation, based on specific agreements. Additionally, the maritime component command may further use the land component's medical treatment facility. Strategic air medical evacuation is under the control of the air component commander and requires appropriate coordination.

For additional information on medical support, see AJP-4, *Allied Joint Doctrine for Logistics*; AJP-4.3, *Allied Joint Doctrine for Host-Nation Support*; AJP-4.6, *Allied Joint Doctrine for Joint Logistic Support Group*; AJP-4.10, *Allied Joint Doctrine for Medical Support*; and ALP-4.1.

7.25 **Logistics during joint sea basing.** Logistically, the use of properly loaded ships, military afloat support, or commercial charters to support other components, may assist in issues, such as force protection, the environmental impact on stocks, and even the joint desired order of arrival where capability held in the maritime force could allow earlier movement of forward elements that might otherwise have had to await lift assets. Use of the joint sea base for logistic support is determined by the logistic estimate process and involves a high level of coordination between the maritime component and the joint logistic support group.

7.26 For the joint force commander, joint sea basing offers the flexibility to conduct selected offload in theatre at a desired time and place. The joint force commander can also choose which assigned elements, that normally would operate ashore, remain afloat, considering the potential threat to these assets. Afloat support vessels can offload in ports with minimal infrastructure. Using amphibious offload enablers (helicopters and surface movement), the joint force commander also has the option to bypass seaports of debarkation if desired, either due to non-suitability, host-nation constraints, and congestion or in circumstances where force build-up needs to occur at an alternative point. The advantages that this ability to bypass the seaport of debarkation (SPOD) brings should be balanced against the potential reduction in tempo of offload across a beach compared to that achieved in a port. It is also dependent upon the amount of enablers that are available.

7.27 Over a lengthy period of operations, possibly lasting several years, the need to rotate elements becomes essential to ensure vessels undergo both defect and preventative maintenance and crews are rested to avoid fatigue. In some scenarios, substantial maintenance can be conducted at sea, and personnel can be rotated (including entire crews) whilst vessels continue their operational task. This tends to work better with aircraft, smaller warships, and naval auxiliaries. The logistical requirements to achieve this for a large task force would be complex, and the rotation is likely to be staggered to ensure no operational capability is lost during a protracted operation. Host-nation basing, or at least limited support, would greatly assist such sustainment.

7.28 If the focus of a maritime operation moves ashore, the emphasis of maritime force operations shifts from being enabling to being supportive. Maritime forces can contribute to all the components required for the conduct of operations ashore. In particular, the focus is on enhancing the manoeuvre characteristics of land forces by application of the attributes of maritime forces and applying force where it is least expected. Lengthy operations may require the rotation of major units, a common technique enabling both the relief of forces in place as well as the introduction of differently configured forces.

7.29 **Military engineering support.** Military engineering support to maritime operations monitor, maintain, restore, and, if necessary, provide mission-related maritime infrastructure to maximise maritime operations, Military engineering support to maritime operations includes early identification of a potential SPOD; reconnaissance; information gathering; analysis, assessment, and definition of force requirements; analysis and assessment of capabilities, capacities, and shortfalls; and planning and initiation of necessary mitigation measures. It can enable restoration of minimum port facilities, including improving beaches and port facilities to increase cargo and personnel throughput, shore stabilisation, site grading, mine clearance on land, explosive ordnance disposal, drainage, facility construction and improvements at SPODs, environmental damage mitigation, and utility installation. Tasks are processed in accordance with host nation national, and NATO procedures. Unforeseen damages or limitations at mission critical maritime installations could ultimately lead to closure of the SPOD, which could lead to a reduction of capability for the joint force command.

Force protection

7.30 Commanders at all levels evaluate the hazards and threats and assign resources to protect vulnerabilities to the mission and maritime forces themselves. As it is difficult, if not impossible, to protect all resources at all times, commanders conduct risk analysis and management to protect those forces that are critical for the current mission.

7.31 Force protection is a joint function with layered responsibilities that requires careful coordination between military commanders, host nations, and troop contributing nations. The protection of maritime forces as an operational function is concerned specifically with preserving the combat power of the force. It includes measures and means to minimize the vulnerability of personnel, facilities, materiel, operations, and activities from threats and hazards to preserve freedom of action and operational effectiveness. This can take a variety of forms: layered defence of high-value targets, including harbours, ports, and critical infrastructure; routing to avoid enemy capabilities; deception to prevent successful enemy attack; and, of course, the destruction or neutralization of the enemy’s combat power. The commander declares the security alert state and force protection level for forces assigned in the maritime component command area of operations.

For additional details for force protection, see ATP-74, *Allied Maritime Force Protection*.

Civil-military cooperation

7.32 Civil-military cooperation integrates the understanding of the civil factors of the operating environment and that enables, facilitates and conducts civil-military interaction to support the accomplishment of missions and military strategic objectives in peacetime, crisis and conflict. Maritime operations are influenced by the civil factors of the operating environment and create impacts on the maritime and littoral civil environment. These planners focus on the critical civil factors within the operating environment, which are likely to have an impact on the military mission. Civil-military liaison enables and facilitates the civil-military interaction of other maritime functions contributing to a comprehensive approach and safety and security of the seas. Civil-military cooperation in the maritime operating environment requires authority to exchange information and the ability to communicate, plan, and coordinate with a variety of relevant non-military actors. Cooperation includes interaction with all governmental authorities operating at sea, such as coast guard forces, maritime police; fisheries enforcement authorities, hydrographic authorities, civilian search and rescue authorities, National Red Cross and Red Crescent societies, port authorities, environmental protection authorities, transport authorities responsible for the safety of maritime navigation, judicial authorities, and other relevant coastal state authority with jurisdiction or activities at sea or in coastal areas. This cooperation may also apply to international and non-governmental organizations and others, whose activities require interaction with maritime forces.

7.33 In the maritime operating environment, one of the most significant actors is the shipping industry, which is likely to be present in the theatre/joint area of operations and wish to continue its activities with minimal interference. Merchant shipping aims, methods, and perspectives may have to be reconciled with those of NATO so that the operational commander's mission can be fulfilled. There are clear legal obligations to have due regard to civilian shipping in peacetime and during armed conflict.

7.34 **Naval cooperation and guidance for shipping (NCAGS)**.The NCAGS institution is the NATO Shipping Centre (NSC) which is the link between military and civilian shipping. The NCAGS organization supports the naval forces' freedom of movement and provides the MCC with expertise from merchant shipping. NCAGS provides support to merchant shipping through cooperation, advice and guidance and enhances the safety of merchant ships.

7.35 **Allied Worldwide Navigational Information System (AWNIS).** AWNIS ensures the compilation, coordination and timely publication of information on nautical safety and safety of life at sea or military commanders (classified) as well as for civilian shipping (unclassified) in an area of operations. AWNIS as a system has no organizational or infrastructural assets of its own. Existing military and civilian authorities concerned with maritime safety, navigation and routing are interconnected in a way to ensure a continuous exchange of information and thus to allow the compilation of a complete operational picture of nautical safety.

For additional details on civil-military cooperation, see AJP-3.19, *Allied Joint Doctrine for Civil-Military Cooperation*.

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Lexicon

Part 1 — Acronyms and abbreviations

ACC	air component commander
C2	command and control
CBRN	chemical, biological, radiological and nuclear
JIPOE	joint intelligence preparation of the operating environment
ISR	intelligence, surveillance and reconnaissance
JFAC HQ	joint force air component headquarters
MARCOM	Allied Maritime Command
MCC	maritime component commander
NATO	North Atlantic Treaty Organization
OPGEN	operational general message
OPLAN	operation plan
OPTASK	operational tasking message
OTC	officer in tactical command
SACEUR	Supreme Allied Commander Europe
SPOD	seaport of debarkation

Part 2 – Terms and definitions

This lexicon only lists terms applicable to maritime operations. Please refer to the NATOTerm database at https://nso.nato.int/natoterm for any other terms and the most up-to-date terminology.

amphibious assault
The principal type of amphibious operation which involves establishing a force on a hostile or potentially hostile shore.
(NATO Agreed)

amphibious demonstration
A type of amphibious operation conducted for the purpose of deceiving the enemy by a show of force with the expectation of deluding the enemy into a course of action unfavourable to him.
(NATO Agreed)

amphibious force
A naval force and landing force, together with supporting forces that are trained, organized and equipped for amphibious operations.
(NATO Agreed)

amphibious objective area
A geographical area, delineated in the initiating directive, for purposes of command and control within which is located the objective(s) to be secured by the amphibious task force. This area must be of sufficient size to ensure accomplishment of the amphibious task force's mission and must provide sufficient area for conducting necessary sea, air and land operations.
(NATO Agreed)

amphibious operation
A military operation launched from the sea by a naval and landing force embarked in ships or craft, with the principal purpose of projecting the landing force ashore tactically into an environment ranging from permissive to hostile.
(NATO Agreed)

amphibious raid
A type of amphibious operation involving swift incursion into or temporary occupation of an objective followed by a planned withdrawal.
(NATO Agreed)

amphibious task force
A task organization of naval forces and a landing force, with their organic aviation and other supporting forces, formed for the purpose of conducting an amphibious operation.
(NATO Agreed)

amphibious withdrawal
A type of amphibious operation involving the extraction of forces by sea in naval ships or craft from a hostile or potentially hostile shore.
(NATO Agreed)

antisubmarine warfare
Operations conducted with the intention of denying the enemy the effective use of their submarines.
(NATO Agreed)

associated support
In naval usage, operations in which a designated unit operates independently of a specified force or group, but is tasked to provide contact information to, receive intelligence from and, if authorized, to cooperate and coordinate operations with the supported force. Tactical control of the unit remains with the assigning authority who coordinates tasking and movement of the unit in response to the requirements of the supported force commander.
(NATO Agreed)

composite warfare commander
An officer to whom the officer in tactical command of a naval task organization may delegate authority to conduct some or all of the offensive and defensive functions of the force.
(This term is a new term and definition and has been processed for NATO Agreed status via terminology proposal forms 2022-0221.)

direct support
1. In land operations, a primary tactical task given to an artillery unit to provide fire requested by a supported unit other than an artillery unit, without specifying the command relationship.

2. In maritime usage, operations related to the protection of a specific force by other units, normally under the tactical control of that force.

3. The support provided by a unit not attached to or under the command of the supported unit or formation, but required to give priority to the support required by that unit or formation.

(NATO Agreed)

landing force
The task organization of ground and aviation units assigned to an amphibious operation.
(NATO Agreed)

maritime interdiction operation
An operation conducted to enforce prohibition on the maritime movement of specified persons or material within a defined geographic area.
(NATO Agreed)

maritime operation
An action performed by forces on, under, or over the sea to gain or exploit control of the sea or to deny its use to the enemy.
(NATO Agreed)

mine warfare
The strategic and tactical use of mines and their counter-measures.
(NATO Agreed)

mission-type order
An order issued to a subordinate unit that indicates the mission to be accomplished without specifying how it is to be done.
(NATO Agreed)

officer in tactical command
In maritime usage, the senior officer present eligible to assume command, or the officer to whom he has delegated tactical command.
(NATO Agreed)

precursor sweeping
The sweeping of an area by relatively safe means in order to reduce the risk to mine countermeasures vessels in subsequent operations.
(NATO Agreed)

sea control
The condition that exists when one has freedom of action within an area of the sea for one's own purposes for a period of time in the subsurface, surface and above water environments.
(NATO Agreed)

sea denial
Preventing an adversary from controlling a maritime area without being able to control that area oneself.
(NATO Agreed)

task force
A component of a fleet organized by the commander of a task fleet or higher authority for the accomplishment of a specific task or tasks.
(NATO Agreed)

task group
A component of a naval task force organized by the commander of a task force or higher authority.
(This term is a new term and definition and has been processed for NATO Agreed status via terminology proposal forms 2016-0087.)

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