Ministry of Defence

Joint Doctrine Publication 0-10

UK Maritime Power

Sixth Edition

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Foreword

Since the last edition of this publication, we have witnessed the return of state-on-state war in Europe and the shifting political powers of allies and alliances. Even during a land war in central Europe, the importance of the maritime domain has been highlighted as essential to master. Through the imaginative exploitation of autonomous platforms and weapons, combined with effective digital networks and artificial intelligence, a nation without a traditional navy has contained a traditional naval power to its bases.

These experiences and lessons, emerging from the conflict in Ukraine, underline that we are in a period of deep transformational change. We should not be daunted by the challenge. Just as our forebears weathered the change from sail to steam, from cannon to breech loading rifled guns and then to missiles and aviation power, and evolved to use the new weapons of the submarine, the wireless and the computer – we will blend crewed, uncrewed and autonomous capabilities into a 'hybrid navy'. We must exploit faster than our competitors the benefits of digital, networked and autonomous systems. In this way we will ensure the delivery of the historically proven requirements in the maritime for mass, range and flexibility.

Whilst we transform to a Naval Service ready to fight and win in the 21st century, we must also remember and master the lessons history and hard earnt experience have taught us. Written for joint staffs, officials, allies and partners across industry this nevertheless is our doctrinal bedrock and the threshold to step forward into the future. I commend its study to you all.

First Sea Lord and Chief of Naval Staff

Preface

Purpose

1. Joint Doctrine Publication (JDP) 0-10, *UK Maritime Power* is the UK's keystone maritime domain doctrine publication. Whilst JDP 0-01, *UK Defence Doctrine* provides the broad principles and philosophy underpinning the use of UK Armed Forces, and the North Atlantic Treaty Organization's (NATO's) Allied Joint Publication (AJP)-3.1, *Allied Joint Doctrine for Maritime Operations* focuses on the application of NATO maritime power, JDP 0-10 is focused specifically on UK maritime power. It brings together higher-level doctrine, government policy and enduring knowledge and experience to provide a basis for understanding the utility of the maritime domain.

Context

2. The UK is an island state, and while this means that there is an inherent reliance on the sea, it also provides opportunities to use the sea in the pursuit of national objectives. Furthermore, the sea is critically important to the UK's economy, which is addressed in detail later, as well as a vital enabler for moving people and goods around the world.

Audience

3. JDP 0-10 will be of particular value to the Joint Services Command and Staff College, joint commanders and their staff, the broader Defence community and our allies, as well as elected representatives and other government departments.

Structure

4. JDP 0-10 is divided into four chapters and includes a supporting lexicon. The chapter content is outlined below.

   a. **Chapter 1 – An introduction to maritime power.** This chapter introduces the maritime environment and explains why maritime power is important to the UK. It introduces and defines maritime power, and provides an overview of the attributes and enduring utility of maritime forces. It also provides a snapshot of some of the key issues and

challenges that exist in the maritime environment. Finally, it briefly highlights the importance of fostering and maintaining resilience.

b. **Chapter 2 – Maritime power in context.** This chapter introduces the dimensions of the maritime environment and explains the significance for the UK. It then focuses on national considerations and how maritime forces contribute to the wider defence endeavour.

c. **Chapter 3 – The foundations of maritime power.** This chapter introduces the function of command and control and the conceptual, moral and physical components of fighting power. It then provides detail on the ways in which maritime forces fight and describes what maritime power projection can offer the joint commander.

d. **Chapter 4 – Employing maritime power.** This chapter describes the key roles of the UK's maritime forces. It then outlines some of the roles and capabilities that can be employed by the joint commander before highlighting the constituent parts of UK maritime power and how forces are organised for employment. Finally, a short section is included regarding joint operations.

Linkages

5. JDP 0-10, *UK Maritime Power,* as the keystone maritime domain doctrine publication, draws on JDP 0-01, *UK Defence Doctrine* and sits alongside other joint operational domain-centric doctrine: JDP 0-20, *UK Land Power*; JDP 0-30, *UK Air Power*; JDP 0-40, *UK Space Power*; and JDP 0-50, *UK Defence Cyber and Electromagnetic Doctrine*. The publication also reflects the Royal Navy *Command Plan 25* and Book of Reference 1806, *British Maritime Doctrine*. From a NATO perspective, JDP 0-10 is coherent with AJP-01, *Allied Joint Doctrine* and AJP-3.1, *Allied Joint Doctrine for Maritime Operations*. JDP 0-10 also complements the Royal Navy's Book of Reference 4487, *The Fighting Instructions* series.

Contents

Chapter 1

This chapter introduces the maritime environment and explains why maritime power is important to the UK. It introduces and defines maritime power, and provides an overview of the attributes and enduring utility of maritime forces. It also provides a snapshot of some of the key issues and challenges that exist in the maritime environment. Finally, it briefly highlights the importance of fostering and maintaining resilience.

1

> A good Navy is not a provocation to war. It is the surest guaranty of peace.
>
> Theodore Roosevelt

Chapter 1

An introduction to maritime power

Section 1 – What is maritime power?

1.1. Maritime power is defined as: 'the ability to apply maritime military capabilities at and from the sea to influence the behaviour of actors and the course of events.'[1] For the purposes of this publication, maritime capabilities include not just surface forces (ships), but also subsurface forces (submarines), fixed- and rotary-wing aircraft that operate from maritime units (this includes British Army and Royal Air Force (RAF) assets) and from ashore, as well as amphibious forces. It also includes less traditional capabilities such as: information warfare, cyber, electromagnetic, uncrewed and remotely piloted systems. More widely, maritime capabilities refer to ports, merchant ships, undersea pipelines and cables, energy platforms, fisheries and mineral extraction, along with the institutions, norms, skills, resources and infrastructure that enable the wider use of the sea. Maritime power seeks to protect all of these.

1.2. Maritime power is an inherently broad concept, founded on a state's maritime tradition and dependency. It encompasses economic, political, military and influence elements, realised through the ability of a state to use the sea.[2] The effectiveness of maritime power, both practically and psychologically, then creates considerable diplomatic effect.

> The function of the fleet [is] three-fold: firstly, to support or obstruct diplomatic effort; secondly, to protect or destroy commerce; and thirdly, to further or hinder military operations ashore.
>
> Julian Corbett

1 Joint Doctrine Publication (JDP) 0-01.1, *UK Terminology Supplement to NATOTerm*.
2 Speller, I., *Understanding Naval Warfare*, 2014.

1.3. More broadly, UK maritime forces seek to contribute to all four instruments of national power – diplomatic, information, military and economic.[3] Chapter 2 covers these in more detail, but the following provides an overview.

a. **Diplomatic.** As a permanent member of the United Nations Security Council and a major contributor to international organisations such as the North Atlantic Treaty Organization (NATO), the UK has significant diplomatic influence on the global stage. This can be used to shape the international rules and norms that govern the use of the oceans and seas.

b. **Information.** Maritime forces gather and protect information in the maritime domain to support decision-making, and use information to inform, influence and persuade.

c. **Military.** In the UK, military force in the maritime domain includes the integration of the Royal Navy, the British Army and the RAF in the projection and sustainment of maritime power at, to or from the sea. The British Army is reliant on seaborne logistics to sustain the defence of Europe and carry out its missions around the world. Equally, specialist British Army regiments[4] provide a vital role in port operations for Defence. The RAF is integral to carrier strike and anti-submarine warfare. Maritime power is the integrated effect of navy, army, air forces and civilian assets to gain control of the seas and to enable allied actions on land, whilst preventing adversaries from doing so.

Military force in the maritime domain includes the integration of the Royal Navy, the British Army and the Royal Air Force

3 JDP 0-01, *UK Defence Doctrine.*

4 17 Port and Maritime Regiment and 165 Port and Maritime Regiment Royal Logistic Corps.

d. **Economic.** The UK is a major economic power. Being an island nation, maritime capability plays a crucial role in safeguarding our economic interests. Protecting lines of communications, ensuring availability of ports as well as maintaining freedom of navigation and good order within the maritime domain are vital for enabling trade within a globalised society.

The maritime environment

1.4. In the physical sense the maritime environment comprises all those areas related to, or affected by, the sea, the high seas, exclusive economic zones and territorial seas. It is important to recognise that the maritime environment is multidimensional. It includes the: oceans, seas, coastal areas, and seabeds; natural resources available on the surface, in the depths of the sea, on the seabed, and in the area below them; and artificial infrastructures and the artefacts present therein.[5] Therefore, maritime forces operate above, on and below the surface of the sea. In addition, to fully appreciate the utility of maritime power it is necessary to understand the littoral,[6] particularly when considering how maritime power can be projected onto land from the sea, noting that more than one-third (2.75 billion) of the world's population lives within 100 kilometres of the coast.[7]

1.5. One of the more significant physical characteristics of the sea is the importance of maritime choke points, such as the Strait of Hormuz joining the Gulf to the Indian Ocean.[8] Choke points act as funnels for international shipping. They can restrict freedom of navigation, increase collision risk, and provide opportunity for piracy, terrorism and maritime crime. Many choke points provide the quickest and most cost-effective route for commercial shipping; disruption within such areas is therefore likely to have widespread economic consequences.

5 Allied Joint Publication (AJP)-3.1, *Allied Joint Doctrine for Maritime Operations*.
6 The littoral region is defined as: 'those land areas (and their adjacent sea areas and associated air space) that are susceptible to engagement and influence from the sea.' JDP 0-01.1, *UK Terminology Supplement to NATOTerm*.
7 Reimann, L., Vafeidis, A. T., Honsel, L., 'Population development as a driver of coastal risk: Current trends and future pathways', *Cambridge Prisms: Coastal Futures*, Volume 1, 2023.
8 Other choke points include the Suez Canal, the Panama Canal and the straits of Skagerrak, Malacca, Gibraltar, the Turkish straits, Bering and Bab-el-Mandeb.

The importance of the maritime environment

1.6. The importance of the sea is not only economic, it: allows the most efficient global movement of goods and equipment at scale; is a source of power in terms of both fossil fuels and renewable energy; provides a source of food (in many locations the most significant source); is an area of recreation; and, finally, delineates a country's territory, which can be policed and defended.

1.7. Conversely, the ability to stop or obstruct others doing any of this can be hugely powerful. Just as the UK would seek to have unhindered access to the sea, the ability to deny another nation or organisation from using the sea has significant impact, the scale of which is dictated by the way the sea is being used. This could be by:

- preventing the passage of essential cargoes required for national survival, for example, German U-boats sinking merchant shipping during the Second World War;
- interdicting banned goods from reaching a country, such as the ongoing United Nations embargo operations off North Korea;
- preventing the passage of economically important cargoes through strategic choke points (China's economic model is entirely dependent on the ability to move goods economically and at scale, predominantly through the Malacca strait[9]); or
- preventing the movement of military materiel.

9 In November 2003, President Hu Jintao described China's situation as the 'Malacca dilemma', referring to the lack of alternatives and vulnerability to a naval blockade.

Why does the UK need maritime power?

1.8. The UK needs to exercise maritime power for several reasons. These are summarised below.

a. **National defence.** The Royal Navy is responsible for defending the UK's shores and territorial seas, as well as contributing to the defence of NATO Allies.

b. **To safeguard the UK's economic interests.** Maritime power contributes to the stability and economic prosperity of the UK by being deployed around the globe to protect trade routes and guard the flow of food and energy resources into our ports. Tasks include protecting critical national infrastructure,[10] ensuring the integrity of the UK's exclusive economic zone and ensuring the safe passage of maritime trade, both in the UK's territorial seas and through certain global choke points.

c. **Protecting UK interests overseas.** Maritime power projection plays a role in protecting the UK's Overseas Territories, as well as its economic and strategic interests abroad, including contributing to the defence of partners.

d. **Maintaining international security.** The UK is committed to upholding the rules-based international order. Maritime power supports this through its contribution to international peacekeeping efforts, participation in embargo operations and its operations to maintain stability in regions of the world that are of strategic importance to the UK, most notably the strategically vital choke points.

e. **Projecting power.** Maritime power contributes to the projection of military power overseas, which can be useful in a variety of situations, including responding to threats to international security and supporting allies and partners.

f. **Humanitarian assistance and disaster relief.** Maritime power contributes to providing humanitarian assistance and disaster relief in the event of natural disasters or other crises.

10 Critical national infrastructure includes, for example, undersea cables and pipelines, ports and offshore energy structures.

Maritime forces

1.9. Maritime forces are those forces operating at or from the sea. While the Naval Service[11] is the principal actor in the maritime environment, maritime power can be delivered by all of the UK military: Royal Navy, British Army, RAF, and Cyber and Specialist Operations Command. Maritime power could therefore be delivered through British Army aviation assets and personnel operating from amphibious shipping, or Fleet Air Arm and RAF fixed- and rotary-wing aircraft operating from an aircraft carrier, delivering carrier enabled power projection.[12]

1.10. Maritime forces operate alongside, and in concert with, other government departments, allies, partners and non-governmental organisations. Through integration with these elements, maritime forces leverage their capabilities to support the UK's national policy and strategic objectives. The Royal Navy's ability to operate globally in international waters, its experience and ability to respond to threats and crises as varied as natural disasters, piracy, smuggling and trafficking, makes it an essential instrument of UK policy and influence both in peace and conflict. This integrated approach sees the Royal Navy working with the Foreign, Commonwealth and Development Office, intelligence agencies and foreign partners to operate in the most coordinated and effective manner possible.

The enduring utility of maritime power

1.11. The unique attributes of the maritime environment allow maritime forces to provide a persistent and versatile military capability. The long-standing principle of freedom of navigation in international waters allows maritime forces to poise without commitment, to project national influence and develop understanding,[13] while remaining highly mobile to exploit opportunities or to counter emerging threats. Ultimately, maritime forces provide a mobile, responsive and persistent basis for military capabilities, which can rapidly move up and down a spectrum of soft and hard power options to support national objectives.[14]

11 The Naval Service includes the Royal Navy (which includes the surface fleet, Submarine Service, Fleet Air Arm), the Royal Marines and the Royal Fleet Auxiliary.
12 Carrier enabled power projection is the ability to project national influence centred on the capabilities and assets found within a carrier strike group.
13 Understanding in the context of decision-making is the perception and interpretation of a particular situation to provide the context, insight and foresight required for effective decision-making.
14 See JDP 0-01, *UK Defence Doctrine* for further information on hard and soft power.

Section 2 – The attributes of maritime forces

1.12. The characteristics of the maritime environment give us the six attributes of maritime power outlined below in Figure 1.1, all of which serve to exert national influence and create leverage. Maritime power can create leverage by enabling general superiority or local superiority at the decisive point, whilst also imposing political and economic cost on adversaries. While this cannot always be delivered instantly, maritime forces benefit from the ability to pre-deploy to international waters near an area of conflict (entirely within international law) during a build-up of hostilities.

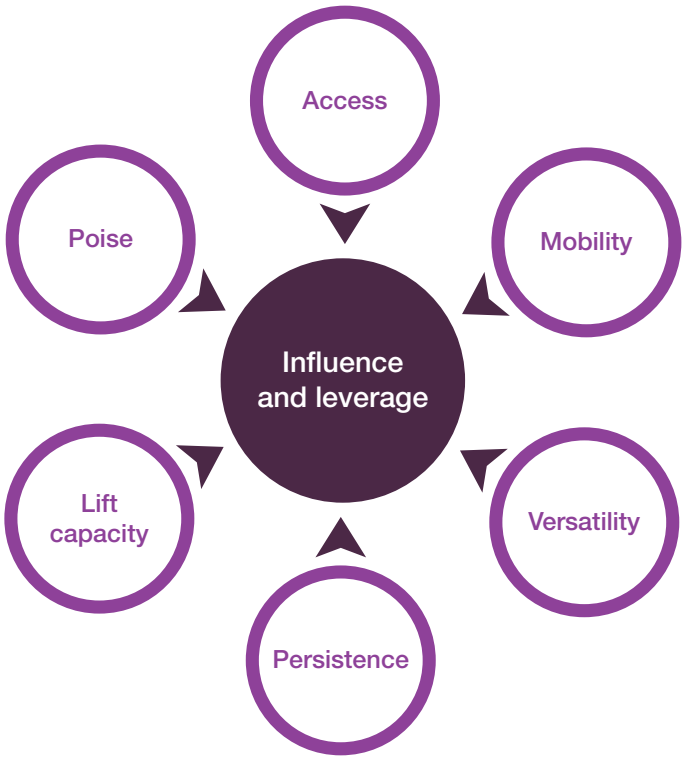

Figure 1.1 – The attributes of maritime forces

a. **Access.** Only 20% of countries are landlocked, with the remaining 80% having a sea coast of some sort.[15] Even states with long land borders, or indeed with no sea borders at all, will depend on the sea and can be attacked from the sea. Whilst there are some parts of the

15 World Population Review, 'Landlocked Countries 2025', using source data from Study.com, 'Landlocked Countries | Definition, List & Effects'.

globe that maritime assets cannot reach, the mixture of surface, subsurface, airborne assets, missiles and landing forces mean those areas are becoming increasingly smaller.

b. **Mobility.** There are often quicker ways to deploy military power in the short term, but maritime platforms are virtually unrivalled in their ability to arrive in a theatre of operations, particularly at range, with mass to deliver an enduring capability for months. This provides options and can potentially prevent major problems before they emerge depending on the scale and location of deployment. In addition, navies can move significant distances in a short period of time and can even move in and out of an anti-access and area denial threat area depending on the tactical situation. What cannot be controlled, however, is the weather, and mobility can be severely restricted by adverse climatic conditions. This can be mitigated by routing and avoidance if time permits, but there are occasions where weather impact will be inevitable.

c. **Versatility.** Naval forces can change their posture in moments, undertake several tasks concurrently and be available for rapid retasking. This is aided by effective command and control systems, with secure and robust communications.

d. **Persistence.** Maritime forces offer persistence, providing the UK with a sovereign capability that can be established with minimal political and logistic commitment and can be easily withdrawn. The endurance provided by on-board stocks, the ability to replenish at sea and operate at range from host-nation support provides a sustained presence, and ultimately great flexibility. However, persistence is tempered by the nature of the environment, the range of engineering spares held on board and the inability to replenish some weapon systems whilst at sea.

e. **Lift capacity.** Both naval platforms and contracted sea lift are essential to mount an operation at scale overseas. Given the demands and sheer tonnage required by a significant campaign, the most feasible way to deliver support at scale is through maritime capabilities. Whilst transit time is generally days rather than hours, time on task is measured in weeks and months rather than hours and days.

f. **Poise.** Once in theatre, maritime forces can remain on station for prolonged periods, either overtly to achieve deterrence or coercion, or covertly.

Section 3 – Maritime challenges

1.13. Within the maritime environment there are significant challenges that shape activity: some are historic and a known quantity, but others are emerging. Similarly, some are a direct threat to the UK's interests, while some are a growing issue that may become future threats to the UK and its partners. In the main, whilst these challenges are in the maritime environment, they impact more widely and require a holistic, multi-domain solution, rather than a maritime-only response.

a. **State-based or state-sponsored attack.** The threat of state-based or state-sponsored attack on shipping and the potential for land assault from the sea remains a significant maritime concern. The 2008 armed conflict between Russia and Georgia demonstrates this issue: Russian forces established a naval blockade of Georgian ports, exposing the vulnerability of shipping and maritime infrastructure to state aggression. Similarly, both the illegal invasion (and seizure) of Crimea in 2014, and the 2022 armed conflict between Russia and Ukraine have again demonstrated the importance of protecting or exploiting the maritime flank. Most recently, a succession of missile and armed drone attacks carried out by the Iran-aligned Houthi group against shipping in the Southern Red Sea has caused considerable disruption to merchant shipping. The overall impact is significant delays in the global supply chain.

b. **Organised crime.** For centuries, the sea has been used for illicit activity, predominantly because its scale means that whole areas are unregulated, allowing the free flow of goods and people. Similarly, the very nature of maritime trade is that it is conducted at scale; any attempt to interdict activity can often be like looking for a needle in a haystack. For example, the average container ship bringing goods from the Far East carries around 15,000 containers,[16] any one of which could be carrying an illicit cargo. Specific criminal activity in the maritime environment includes smuggling (for example, cigarettes, fake goods and drugs), human trafficking and money laundering.

c. **Piracy.** Pirates operate in various regions, such as the Gulf of Aden, the Indian Ocean and the coast of West Africa. They use violence and intimidation to hijack ships and hold crew members and cargo for

16 United Nations conference on trade and development review of maritime transport 2021.

ransom. The Royal Navy, along with other naval forces, deploy ships and aircraft to patrol waters known for piracy and provide protection for vulnerable vessels. Additionally, the Royal Navy trains regional naval forces to help them better combat piracy.

d. **Critical national infrastructure protection.** The threat to the UK's critical national infrastructure at sea is a significant concern, because it could have a major impact on the security and stability of the country. The term 'critical national infrastructure' covers different elements such as ports, energy harnessing platforms (oil, gas, wind and solar), pipelines of varying natures (oil and gas) and undersea cables. All of these are essential for the country's economy and security, leaving a vulnerability for terrorist organisations or actors with malign intent to exploit. Similarly, undersea cables are the backbone of the Internet and are used to transmit data, voice and other communications between countries and continents; the UK is a key node in moving information to and from the United States (US). They also transmit financial transactions and other sensitive information; around US $10 trillion in financial transfers is moved on undersea cables per day.[17] Of note, undersea cables are predominantly owned by commercial companies, making their protection complex. It requires agreement and cooperation between state and non-state actors.

17 Sunak, R., *Undersea Cables: Indispensable, insecure*, 2017, page 12.

Submarine cable interruption in 2022

In January 2022, one of the two undersea cables between Norway and the island of Svalbard was severed by an unknown source. The impact of the damage was that Svalbard lost its secondary method of data transfer for 11 days until the cable could be repaired. This was significant because Svalbard is the home of the SvalSat satellite ground station that provides all-orbit support to operators of polar orbiting satellites.

On 19 October 2022, at least three fibre-optic cables in the south of France were severed, slowing Internet traffic for users in Europe, Asia and the US. The source of the damage has not been proven.

On 20 October 2022, a major incident was declared in the Shetland Islands after an undersea cable between the islands and mainland UK was severed, leading to a complete blackout in Internet and telephony services. This came a week after a similar incident in which cables between the Shetland Islands and Faroe Islands had been severed.

e. **United Nations Convention on the Law of the Sea III issues and illegal territorial claims.** The United Nations Convention on the Law of the Sea (UNCLOS) III serves as a cornerstone for maritime governance, yet its implementation faces formidable challenges and disputes. Issues such as overlapping territorial claims in the South China Sea, conflicting interpretations of exclusive economic zones, and illegal, unreported and unregulated fishing strain its efficacy. Any disruption in these key maritime corridors reverberates across economies worldwide, affecting prices, supply chains and economic growth. Thus, resolving UNCLOS III

challenges related to territorial disputes is paramount for sustaining the smooth flow of goods and maintaining global economic stability.

f. **Climate change related challenges.** As detailed in the *National Strategy for Maritime Security*, rising sea levels and more frequent and severe storms will continue to damage coastal infrastructure, disrupt commercial shipping and fishing, and displace communities. Changing ocean temperatures and acidification impact marine ecosystems, which affects the availability of resources such as fish and shellfish, and thus increases competition and encourages illegal exploitation. The Arctic region is experiencing an accelerated rate of ice melt, which has opened new maritime routes and resources for exploitation, which in turn increases the potential for conflicts, miscalculation and accidents.[18]

Section 4 – Resilience

1.14. The maritime domain continues to evolve. Interconnectivity with the other operational domains and rapid technological advances, together with factors such as distance and the physical environment, create a challenging matrix. The UK has proved resourceful and adaptive in meeting these challenges but, it must remain conscious of the need for resilience. Knowledge, preparation and training are essential for ensuring continued operation both as a matter of routine and in adverse conditions.

18 *Global Strategic Trends – Out to 2055* provides more detail.

Key points

- Maritime power is defined as: the ability to apply maritime military capabilities at and from the sea to influence the behaviour of actors and the course of events.
- The UK needs maritime power to defend home waters and help protect NATO interests wherever required.
- Maritime power supports all the instruments of national power: diplomatic, information, military and economic.
- The importance of the sea is not only economic, it: allows the most efficient global movement of goods and equipment at scale, is a source of power; provides a source of food; and delineates a country's territory.
- The maritime environment comprises the high seas, exclusive economic zones and territorial seas. It includes the: oceans, seas, coastal areas, and seabeds; natural resources available on the surface, in the depths of the sea, on the seabed, and in the area below them; and artificial infrastructures and the artefacts present therein.
- Maritime choke points funnel international shipping, which increases the risk of collision, the likelihood of piracy and highlights how disruption can affect global supply and pricing.
- Maritime forces comprise navies, and those part of armies, air forces and other organisations that wield force to affect matters to, on or from the sea.
- The long-standing principle of freedom of navigation in international waters allows maritime forces to poise without commitment, to project national influence and develop understanding, while remaining highly mobile to exploit opportunities or to counter emerging threats.
- The attributes of maritime forces are access, mobility, versatility, persistence, lift capacity and poise.
- Fostering and maintaining resilience is essential for successful operations.

Chapter 2

This chapter introduces the dimensions of the maritime environment and explains the significance for the UK. It then focuses on national considerations and how maritime forces contribute to the wider defence endeavour.

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> As an island nation with significant global interests, the importance of the maritime sector to the United Kingdom is unquestionable. It has been, and will continue to be, the lifeblood of our nation's economy.

National Strategy for Maritime Security, 2022

Chapter 2

Maritime power in context

Section 1 – The diplomatic dimension

2.1. Maritime power is an instrument of statecraft. As part of a wider maritime effort and coordinated with other instruments of national power, maritime forces conduct diplomacy and deliver sub-threshold (below the level of armed conflict) constraint at sea. Success in naval diplomacy depends on effective communication and coordination across many parts of government. A commanding officer of a British warship visiting a foreign country will consult with the British ambassador or high commissioner before arrival to ensure that the visit exploits every opportunity to further UK aims, whilst also preventing any activity or action that could undermine UK interests. Diplomacy also depends on linking military, economic and other affairs; a characteristic it shares with maritime power more broadly. Therefore, naval diplomacy works to support the functions of engagement, maritime security and warfighting, for even during conflict the Royal Navy will be conducting naval diplomacy with other powers.

2.2. Naval diplomacy involves using the potential of naval power without resorting to conflict. This can involve a range of actions, from a non-threatening presence to a clear demonstration of military force. Though each instance is unique we can summarise naval diplomacy as intending to create one or more of seven effects.[19] These are summarised below.

a. **Assistance.** This includes providing training teams or places on Royal Navy training courses, undertaking mine clearance as the Royal Navy and other forces have done off the coast of Estonia, and undertaking tasks such as humanitarian assistance and disaster relief.

b. **Attraction.** This may involve the positive impression gained from ship visits. A warship is a high technology, self-supporting expression of national resolve and character. Working in conjunction with wider diplomatic processes, it can form a viable datum from which to project national capabilities and interests.

19 Rowlands, K., *Naval Diplomacy in the 21st Century*, 2019, page 41.

c. **Cooperation.** This can be within an alliance or with partners, such as the North Atlantic Treaty Organization (NATO) standing maritime forces, which the UK took the lead in setting up. The day-to-day cooperation helps to build cohesion within the Alliance more than just episodic moments of working together. It can involve foreign aircraft operating from UK warships, or it can be more ad hoc, such as different nations and organisations working together to counter piracy or pollution.

d. **Reassurance.** The readiness of a warship offshore to act gives the capability to assist rapidly and indicates intent. During the Cold War, for example, NATO exercises in the High North reassured Norway that it would be supported in the event of conflict.

e. **Picture building.** Every naval platform has the ability to act as an intelligence, surveillance and reconnaissance asset, using sensors, trained people and secure communications. This helps achieve the understanding of a situation that is integral to the engagement, maritime security and warfighting functions articulated in Chapter 4. Picture building can also demonstrate intent, for example, that one is prepared to operate close to another nation's bases and provide an advantage in the event of armed conflict.

f. **Deterrence.** This is an influence strategy that aims to convince an actor that the negative consequences of an action outweigh the potential gains. Naval forces can achieve deterrence by presence and the implied threat to punish an adversary or prevent them from achieving their goals. In 1950, the United States (US) Navy helped deter the communist Chinese forces from invading Taiwan.

g. **Coercion.** In the context of the Royal Navy, coercion can take many forms, ranging from diplomatic pressure to military action. One of the primary ways the Royal Navy uses coercion is through its ability to project power, particularly given its balanced fleet of warships, submarines and aircraft, supported by the Royal Marines. For example, in 2000, the Royal Navy contributed to the coercion of an armed group in Sierra Leone that threatened to break the hard-won peace by giving a clear and sizeable demonstration of both capability and intent.

2.3. Of course, the effects above can sometimes be created in the maritime environment by land- or air-based forces, and sometimes more efficiently. By occupying ground, land forces may deny control of maritime choke points

or critical national infrastructure within the littoral. However, once deployed, land forces are fixed and they cannot easily shift their base of operations or change their posture. The comparative lack of restriction on the movement of naval forces at sea, particularly the ability to operate in international waters so close to an adversary's territorial seas, means that a naval task force can often create a disproportionate effect. At the same time naval forces can poise, independent of the resources of any nearby host nation which may be being coerced by an adversary. Finally, naval forces, through their ability to limit or deny maritime trade, can create an economic effect. The fact that it is also scalable provides many political options.

Sierra Leone, November 2000

In November 2000 there was concern that the ceasefire and negotiation process in Sierra Leone, which the UK had done much to set up, was under threat. It seemed possible that the rebel Revolutionary United Front might return to violence. As part of the campaign to persuade them that they would not be permitted to succeed by force, the Royal Navy's Amphibious Ready Group conducted a well-publicised show of force by the capital which helped reinforce ongoing activity by the British Army and Royal Air Force (RAF). The Revolutionary United Front decided to continue negotiations and eventually commenced a process of de-arming. Naval forces had contributed to military coercion with minimal footprint ashore.

Section 2 – The information dimension

> In today's Information Age, the supremacy of information is the ultimate power. By controlling information, you can control people.
>
> Liu Xiaobo, Chinese writer and political activist and Nobel Peace Prize laureate

2.4. The effects of maritime power intermesh and are mutually supporting. This is particularly the case for information. Information is essential for effective maritime combat, as well as more benign activities such as providing aid after a natural disaster. The information effect of maritime power can be used to:

- inform the global community about events at sea;
- persuade through information operations;
- enable our own operations; and
- support national-level decision-making.

2.5. Sometimes the narrative conveyed takes primacy, and sometimes the physical action is more important; as always, it is a balance, but information will always enhance physical action. For example, during the Allied antisubmarine warfare campaign in the Second World War, the priority was to ensure the safe passage of cargo across the Atlantic Ocean against U-boat attack. The narrative was secondary, for no amount of information operations would dissuade the U-boat crews, although some amount of reassurance to allies and neutrals was beneficial. Conversely, for an exercise in peacetime it is often the case that success is judged on effective integration and political unity rather than the number of bullets fired and successful engagements completed.

Section 3 – The military dimension

2.6. Military capabilities used at or projected from the sea have proved decisive in conflicts since the Bronze Age. Even continental powers with limited coastlines have sought naval advantage at various stages in the past. Navies have been instrumental in defence and invasion, and in the projection of forces ashore, their sustainment and recovery. Today, over 150 nations worldwide possess a naval force of some sort, ranging from ocean-going carrier groups

to limited brown water[20] coastal forces. Even relatively minor maritime powers or non-state actors can pose a significant threat, particularly in terms of restricting access through strategic maritime choke points using land-based missiles or relatively inexpensive weapons such as sea mines or small dual-use surface vessels such as jet skis or speedboats.

2.7. States or actors may use the sea as a means of exerting influence over others, whether through persuasion, deterrence or compulsion. Maritime forces can also provide reassurance to allies and support for humanitarian operations, which can also enhance global political relationships and influence. As a result, many states have invested in modern naval vessels, submarines and expeditionary capabilities, as well as land-based systems to deter other states' maritime forces. Additionally, states are exploring the use of cyber and electromagnetic capabilities, as well as highly automated systems and space-based systems to influence the maritime environment.

2.8. New developments, such as the widespread availability of information, the growing importance of space, hybrid tactics and the potential emergence of combat-experienced terrorists, will shape the future of maritime operations. Among these, the ability to control and shape the information environment may be key to success in future operations. The narrative, rather than the facts, may prove decisive in determining success or failure in generating or projecting influence.

UK Space Command launching satellite Tyche in August 2024 as part of the MOD's space-based intelligence, surveillance and reconnaissance programme

20 In this context 'brown water' refers to maritime forces able to operate on inland rivers and estuaries. Green and blue water refers to maritime forces that are limited in their operations to a state's coastal waters, ports and harbours, and the open oceans or high seas, respectively.

Section 4 – The economic dimension

2.9. The world's economy and ecology relies on a safe, secure and well-maintained maritime environment. Over 90% of global trade by volume travels by shipping; 95% of global Internet traffic travels via undersea cables; and over a fifth of our protein is sourced from the sea. Owing to the moderating effect of the sea on our climate, and the dependence on the oceans for sustenance and resource, one-third of the world's population lives within 100 kilometres of the coastline. The oceans hold huge carbon capture potential; recent research estimates that 30% of all carbon dioxide emissions are captured by natural ocean processes, and that the oceans hold up to 60 times more carbon than the atmosphere. Protecting the maritime environment and legitimate uses of the sea is therefore a global responsibility, one which requires leadership by responsible powers such as the UK.

2.10. The advantage of maritime transport over land or air transport is that products can be moved cheaply at scale; this means that the oceans are the main transport arteries of the world. Modern industrial integration means that almost all advanced manufacture involves moving raw materials and parts between countries. Even slight delays to sea transport ripple through the international system. The blockage of the Suez Canal by the container ship Ever Given in 2021 disrupted the movement of US $9 billion worth of goods each day.[21] Similarly, the numerous drone and missile attacks carried out by Houthi rebels against merchant shipping transiting the Red Sea in 2023–24 has had a dramatic impact on the global shipping trade. The uncertain security situation resulted in a marked increase in the cost of shipping insurance and prompted several shipping companies to re-route around the south of Africa. This imposed a significant delay in supply timelines and increased fuel expenditure, all of which led to a widespread increase in the cost of maritime cargoes.

21 BBC News, (26 March 2021), 'Suez blockage is holding up $9.6bn of goods a day'.

Motor vessel Ever Given

On 23 March 2021, Ever Given, a large container ship, became stuck in the Suez Canal, blocking one of the busiest shipping lanes in the world. The incident caused a backlog of ships waiting to pass through the canal, disrupting global trade and supply chains. The blockage lasted for six days, causing delays and increased costs for many industries, including oil, automobiles, electronics and agriculture. The ship was eventually freed with the help of tugboats and dredging, but the incident highlights the importance of the Suez Canal as a vital global trade route and the potential impact of disruptions to it.

2.11. The loss of access to the sea would be disastrous. The UK imports 36% of its energy supply and 48% of food supplies.[22] Without seaborne imports the UK's population would starve and industry would shut down. As a hub of international finance and soft exports, the UK is also vulnerable to disruption in data flows that could be inflicted if undersea cables are damaged.

22 Department for Environment, Food & Rural Affairs, *United Kingdom Food Security Report 2021: Theme 2: UK Food Supply Sources*, 22 December 2021. House of Commons Briefing Paper Number 4046, Energy imports and exports, 19 October 2018; Government Office for Science, Foresight: *Future of the Sea*, 2018, page 21.

Section 5 – The national context

The influence of the sea on the UK

2.12. As an island state the dimensions of the maritime environment impact the UK more acutely than our continental allies. For centuries, people and states have sought to be powerful at sea. Those who did so recognised that there was something uniquely cost-effective about sea power, as compared with land power, and those nations best able to exploit its attributes profited hugely over those who did not.[23] Today the UK is well positioned to influence what happens within the maritime environment. London is a global hub for finance, commerce and law; the UK is a permanent member of the United Nations Security Council, the Group of 7 and Group of 20 international forums and NATO; and whilst having left the European Union, the UK remains a key European ally with close trade, defence and cultural links across the continent.

UK maritime strategy

2.13. In an increasingly complex and volatile geopolitical landscape, UK maritime power plays a vital role in safeguarding our national interests. To address these challenges, four priority outputs have been developed.

a. **Continuous at sea deterrent.** The generation, operation, protection and enhancement of the continuous at sea deterrent (CASD) is regarded as a key priority. CASD acts as the ultimate defence for both the UK and NATO.

b. **Homeland defence.** The generation and operation of maritime capabilities protects both our homeland and Overseas Territories. A focus on warfighting readiness provides the means to achieve this and aids effective integration of UK forces into NATO.

c. **Maritime strike.** Centred on conventional capabilities and integrated with NATO, the UK's maritime strike capability has a focus on the North Atlantic and High North regions and aims to reassure allies and deter adversaries.

23 Till, G., *Seapower: A Guide for the Twenty-First Century*, 4th Edition, 2018, paragraph 1.1.

There will be an increased use of uncrewed systems to enhance capability and create more mass

d. **Global operations.** The ability to project maritime power on a global basis enables the UK to provide support, achieve influence and provide reassurance to allies. Centred on the generation of tailored task groups, which can include aircraft carriers, maritime power gives the UK the flexibility and capability to respond to events and crisis as required.

Human security

2.14. Human security equates the centrality of security with people, prioritising an increased emphasis on addressing the insecurities that populations or sub-groups may be facing. The United Nations lists seven types of threats to human security: economic, food, health, environmental, personal, community and political. Human security is a framework that can be used to develop strategies to help achieve humanitarian, development, peacebuilding, security and conflict transformation objectives for a plethora of actors, of which the military will play a small role. As a framework of analysis, human security may contrast with counter-insurgency operations and traditional stability operations by focusing on insecurities rather than threats.

2.15. Human security is the requirement to consider the safety and well-being of people caught up in armed conflict. It relates to risks and threats to populations where the UK military has operations, missions or activities and

it places significant importance on reducing the impact of its actions on civilian populations. The key is to understand the human environment (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. Human security can be used as a way to shape the international environment, generate strategic advantage, understand and mitigate adversary exploitation of human insecurity. Key considerations include:

- combating trafficking in human beings, particularly those transferred by sea;
- the impact of maritime activity on civilian livelihoods;
- protection of civilians (including those at risk from piracy);
- protection of children in armed conflict;
- preventing and responding to conflict-related sexual violence;
- cultural property protection;
- activities to respond to the impacts of climate change; and
- the impact of illegal, unregulated and unreported fishing on civilians and in particular fisherfolk.

Key points

- Our future prosperity depends on our continued ability to safeguard national and global trade, most of which is moved by sea.
- Undersea cables are used to move over 95% of global Internet traffic.
- Many states have invested in modern naval vessels, submarines and expeditionary capabilities, as well as land-based systems to deter other states' maritime forces.
- Naval diplomacy involves using the potential of naval power without resorting to the use of force.
- States or actors may use the sea as a means of exerting influence over others, whether through persuasion, deterrence or compulsion.
- UK maritime power safeguards our national interests through: CASD; homeland defence; maritime strike focused on the North Atlantic and High North; and global operations.
- Deterrence is at the heart of the UK's defence posture and maintaining the CASD is the Defence priority and predominately delivered by the Naval Service.
- Human security is a framework that can be used to develop strategies to help achieve humanitarian, development, peacebuilding, security and conflict transformation objectives.

Chapter 3

This chapter introduces the function of command and control and the conceptual, moral and physical components of fighting power. It then provides detail on the ways in which maritime forces fight and finally describes what maritime power projection can offer the joint commander.

3

> “The strategic purpose of maritime power is to secure national interests, not just on the sea, but on land as well. In order to do so, it must be able to project and sustain military force across the full spectrum of conflict and to ensure the freedom of the global commons.”
>
> Dr. Toshi Yoshihara
> Professor of Strategy at
> the United States Naval War College

Chapter 3

The foundations of maritime power

Section 1 – Command and control

3.1. The command and control of maritime forces brings with it unique challenges that, whilst often attributed to the nature of the environment, can be exacerbated in coalitions by differences in language, equipment and national entrenched approaches to the subject that can all be referred to as interoperability issues. Whilst the North Atlantic Treaty Organization (NATO) and Allied doctrine addresses the need for common tactics and procedures, it cannot mitigate all the differences among individual maritime units that inevitably constitute a larger Allied maritime force.

3.2. The composition of maritime forces will often be fluid with numerous 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, there will be units, such as submarines, that by their operational nature have extremely limited communication options, both in availability and bandwidth, thereby restricting a commander's ability to issue further instructions or operational direction over protracted periods of time. A maritime force is also likely to have to share the same operating area with neutral parties, both civilian and military, who are likely to use the full weight of international law to continue their own activities.

3.3. Maritime forces are organised into task forces, groups, units and elements. The names of the different levels are not associated with particular levels of command, and the structure is inherently flexible. Elements might be grouped together based on their primary tasks, their type, the area they are working in or for another reason. Smaller groups of ships will be commanded by the senior officer present. Larger groupings will be commanded by battle staffs, either afloat or ashore, who may delegate tactical direction to a subordinate commander. An example of how a maritime task force is organised is shown in Figure 3.1.

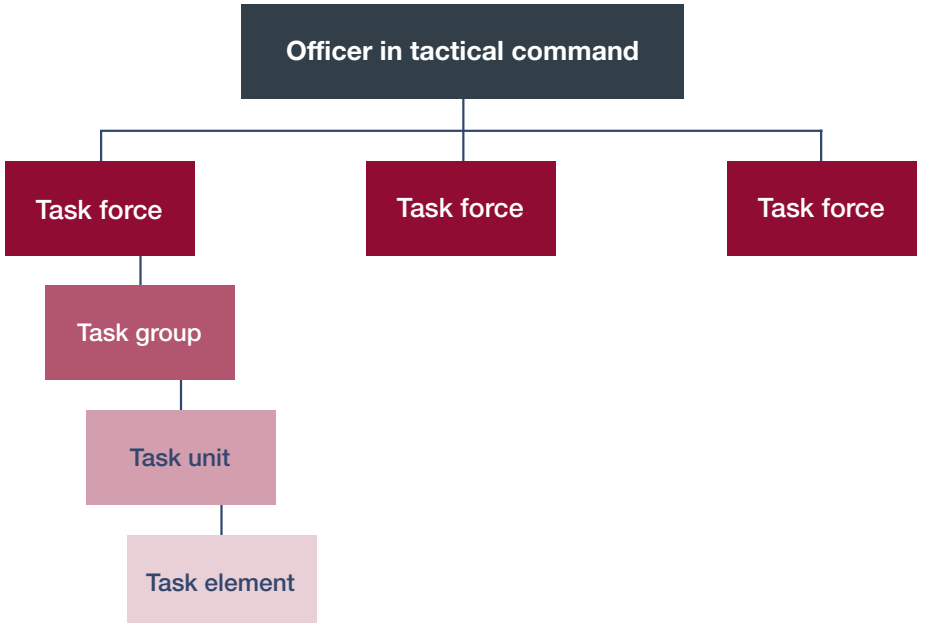

Figure 3.1 – An example of maritime task force organisation

3.4. Command of maritime forces may be exercised from either ashore or afloat. The advantages or disadvantages will be judged on a case-by-case basis. Location within a shore-based joint or maritime headquarters will aid interaction and facilitate integration with wider force elements and the provision of communication infrastructure. Sea-based command can aid situational awareness, 'feel' for the environment, interaction with subordinate commanders and improve agility. This will, however, be dependent on the communication facilities and location of the chosen command platform in relation to other force assets. Added to this is the organisational matrix of whether to maintain the overall commander and staff within one location, or divide elements amongst a force and just maintain a core with the commander and the additional logistic challenges of arranging in-person meetings should they be deemed necessary.

3.5. The distribution of forces to different missions must be planned and coordinated centrally. Execution, however, usually works best decentralised. The upper limitation to the level at which tactical direction can be given is based on two issues. First is the span of command, so that the commander can deal with a manageable number of subordinates. Second is the requirement for accessible and timely tactical information. The upper limitation for tactical direction is usually far lower than imagined and is generally lower in times of conflict than in peacetime. Communication is a key factor in this process and consideration must be given for the time it takes to facilitate effective communication, which is often underestimated, as is the requirement to achieve clarity.

3.6. NATO has four doctrinal tenets that guide thinking and serve to underpin the approach to operating across the continuum of competition. The tenets are: behaviour-centric approach; manoeuvrist approach; comprehensive approach; and mission command. Whilst all have applicability to maritime power, the tenet of mission command has direct relevance to achieving effective command and control within the maritime domain.

Styles of command

3.7. Mission command involves telling people what to achieve and why, but not how. It is defined as: 'a philosophy of command that seeks to convey understanding to subordinates about the intentions of the higher commander and their place within the plan, enabling them to carry out missions with the maximum freedom of action and appropriate resources.'[24] Effective mission command requires the following.

a. **Clarity of intent.** The superior commander must provide a clear, simple mission outline while explaining their intent and any constraints.

b. **Accepting responsibility.** The subordinate must take responsibility for accomplishing the mission in the context of the intent, even as the situation changes.

c. **Mutual understanding and trust.** This is a vital factor throughout the entire chain of command.

d. **Timely and effective decision-making.** Imperfections in a decision or its implementation may be forgiven but failing to take responsibility to decide is unacceptable.

e. **Short orders.** Long orders inherently constrain options and are harder to follow when the situation inevitably changes.

3.8. Mission command is not freedom from superior orders. It is the freedom to implement those orders with drive and imagination, achieving unity of effort with others by delivering superior intent.

24 Joint Doctrine Publication (JDP) 0-01.1, *UK Terminology Supplement to NATOTerm*.

> We were not in communications with the entire team. I wasn't in strict terms in control. It was impossible. We had made our plan and I had to rely on the various Captains to carry it out, which they did without prompting.
>
> Commodore Michael Clapp RN
> Falklands Conflict 1982 – Battle of San Carlos Water

3.9. The opposite of mission command is directive command, which is giving an order that is to be obeyed precisely. In practice, most orders are on a spectrum between the two: every mission command-based order will have some constraints, while few orders are so directive that they leave no freedom whatsoever.

3.10. The optimal place on the spectrum between mission command and directive command depends on the situation and the people involved. However, directive command automatically reduces the collective brainpower applied to any problem and reduces the speed of response in a changing situation to the pace at which just one person can think and articulate.

3.11. Maritime units may be grouped together based on their primary tasks, type and/or the area they are working in, or for other operational reasons. Whilst aviation and littoral elements may be included within such a matrix, mine warfare units will be commanded directly by the mine warfare battle staff and will normally form a separate task group. Submarines will usually be controlled directly at a higher level.

3.12. Once deployed, submarines are often difficult to communicate with due to their operational environment, particularly when submerged. There may be long periods when direct communication with a submarine is either limited or not possible. Consequently, they operate largely under the mission command principle, with further communication being on a pull basis when circumstances permit. Depending on the mission, windows for communication may be factored into their programmes.

3.13. The limits on what a commander can do in terms of allocating missions to their forces is expressed using the terms 'operational command' and 'operational control', and their tactical equivalents. Liaison between relevant operational component commands is particularly essential during joint operations, where embedded liaison officers may be specifically tasked to ensure coherence and coordination. For some tasks, such as amphibious

operations, detailed conventions have been established to define boundaries of authority and outline decisions that should be taken jointly.

Multi-domain approach

3.14. Operational effectiveness demands a thorough understanding of the challenges and opportunities associated with the five operational domains. The modern operational environment is such that activities, actions or their ramifications are rarely confined to a single operational domain.

3.15. To operate effectively, it is vital that commanders understand and appreciate the challenges and opportunities of all operational domains together with their associated dependencies, overlaps and interactions. Effective operation will often require interaction with cross-governmental and civilian organisations and will often include an international element.

Command and control structure of the Royal Navy

3.16. The Royal Navy has a standing headquarters, the Maritime Operations Centre, at Northwood. This directs all units of the Royal Navy unless they are explicitly handed across to a joint headquarters. There are permanent numbered task groups or task units into which naval assets may be allocated. The Royal Navy also has mobile battle staffs including the carrier strike group and mine warfare-focused teams. All are fully integrated into the joint command structure.

3.17. The Royal Navy also has strong relationships with the navies of our allies, in particular the other NATO member states and the Five Eyes group. Other important elements include the UK/Netherlands amphibious force, which has existed since 1972, and the collaboration between the Royal Navy and the French 'Marine Nationale'. These relationships are marked in several ways, including sharing ideas and exchanging personnel to serve in each other's organisations.

Maritime command and control structure within NATO

3.18. Within the NATO structure, the focal point for maritime command is Allied Maritime Command (MARCOM), based in Northwood in the UK. MARCOM operates under NATO's Allied Command Operations, which is headed by the Supreme Allied Commander Europe.

The Royal Navy has strong relationships with the navies of our allies, in particular the NATO member states and the Five Eyes group

3.19. Within MARCOM there are three dedicated command elements: Commander Submarines NATO; Commander Maritime Air NATO; and Commander Surface Forces NATO. These elements perform a coordinating and command and control function for their respective areas, liaising with other NATO commands and national authorities as necessary. MARCOM also has operational command over four standing NATO maritime groups,[25] which provide combat ready forces to meet the Alliance's requirements. These four groups are part of the NATO Allied Response Force and form the Very High Readiness Joint Task Force (Maritime). In addition, there are the naval striking and support forces, which provide the Alliance with a readily available sea-based expeditionary force headquarters.

Section 2 – Fighting power

3.20. Fighting power is at the core of every military Service as it defines the ability to conduct successful operations.[26] It encompasses more than just the number of personnel and the equipment available; it is also the ability to effectively use those resources and inspire troops to engage in battle. While these elements are present in all branches of the military, the distinct roles, capabilities and responsibilities of naval power provide a unique perspective on fighting power.

25 NATO's Standing Naval Forces consist of four groups: the Standing NATO Maritime Groups (SNMG1 and SNMG2) and the Standing NATO Mine Countermeasures Groups (SNMCMG1 and SNMCMG2).
26 See JDP 0-01, *UK Defence Doctrine* for further detail.

3.21. Fighting power determines the ability of our Armed Forces to operate and fight as shown at Figure 3.2. The components of fighting power include a:

- conceptual component – the thought processes providing the intellectual basis and theoretical justification for providing and employing our Armed Forces;
- moral component – the ability to get people to fight, individually and collectively; and
- physical component – the means to fight providing balanced, agile forces at readiness, effective mass (raw mass of people, hulls and stockpile, enabled by technology) and concentration of effort, with warfighting at their core.

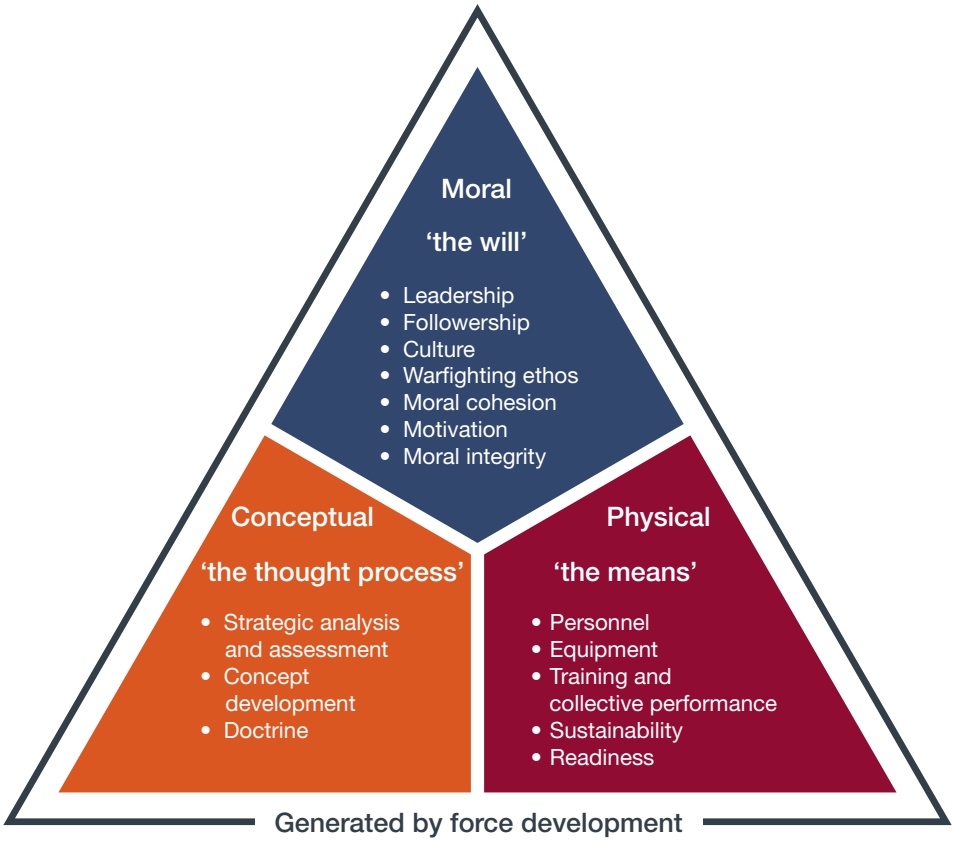

Figure 3.2 – The components of fighting power

3.22. The single-Service Chiefs of Staff are responsible, through the Chief of the Defence Staff, for delivering fighting power to the Secretary of State for Defence. While the Royal Navy will provide the greater part of UK maritime power, the British Army, Royal Air Force, UK Space Command, and Cyber and Specialist Operations Command have to ensure that elements of their own forces can operate effectively in the maritime environment as part of a joint force, just as maritime forces have to be able to operate in the air and land environments. This requires dedicated joint training along with common education to generate understanding and effectiveness.

The conceptual component

> Ideas matter, sometimes fundamentally.
>
> General J. Mattis, United States Marine Corps

3.23. The conceptual component includes the principles of war,[27] doctrine and conceptual innovation. Together these provide an intellectual framework within which maritime military personnel can develop an understanding about the specifics of both their profession and the activities they may have to undertake. The conceptual component reflects accumulated experience, reflections on lessons identified on historic and ongoing operations, ideas for improvements to existing practice and analysis of the future security environment. This provides commanders with the ability to understand the context within which they operate and serves as the foundation on which creativity, ingenuity and initiative may be exercised in complex situations. Only by knowing what has and has not worked before can commanders take risk and use innovation.

The moral component

3.24. It is fundamental to operational effectiveness that the individual elements of the moral component are understood, upheld and passed on, since once they have been lost they are difficult to recover. As the principal UK military actor in the maritime environment, the Royal Navy's core values encapsulate the moral component.[28] Ethos is also a key aspect of the

27 The UK principles of war are: selection and maintenance of the aim; maintenance of morale; offensive action; security; surprise; concentration of effect; economy of effort; flexibility; integration; and sustainability. See JDP 0-01, *UK Defence Doctrine* for further details.

28 Book of Reference digital (BRd) 3(1), *Naval Personnel Management*, February 2022.

moral component. Ethos is the distinctive character, spirit and attitudes of a community, people, culture or group; it defines and motivates the shared ideas, understanding and customs. It is of fundamental importance to continued success in future operations and armed conflict.

> Enduring spirit. Loyalty to ship, unit and team.
>
> Our people work to the highest standards of professionalism and leadership – which gives us all courage in adversity and the determination to fight and win.
>
> Royal Navy ethos

The physical component

3.25. The physical component of fighting power provides the means to operate and fight. Broadly this consists of personnel, training, collective performance, equipment and sustainability, and readiness, including effective deployment and recovery.

3.26. **Readiness, deployability and recovery.** Fighting power can only be effective if it is applied at the right time and at the right place. In this regard maritime forces are unique because they can deploy independently, provide a persistent, self-sustaining forward presence and then self-recover to the UK once an operation has been completed. When deploying, ships, submarines, commando units and aircraft will be brought to a heightened material state, which includes specific theatre enhancements and specialist task equipment. Similarly, the platforms will undergo intensive task-specific training, both as a single unit and potentially as part of a task group, delivered by Fleet Operational Standards and Training. This training ensures UK naval assets deploy at readiness, with well-prepared personnel, and the necessary task equipment, stores and ammunition. This means that maritime forces can move effectively from peacetime to combat operations in a matter of hours.

3.27. **Sustainability.** Sustainability enables ships, submarines, aviation and commando units to deploy to an area of operations, whilst remaining fully mission capable for a variety of roles. This provides the commander with the flexibility and resilience to remain on task and operationally capable for extended periods. Sustainability depends on the provision of a wide range of logistic functions, and it is fundamentally complex given the extended supply lines required. Logistics encompasses organic medical functions, the supply chain and a considerable portion of engineering output. Together these are essential enablers for a task group or single platform alike.

3.28. **Deployed maritime forces.** Deployed maritime forces aim to be as self-sufficient as possible. Maritime first line sustainability is provided by the units' on-board stocks,[29] including food, potable water (produced by the ship) and engineering spares.[30] Second line support, particularly for fuel, is provided by the support shipping of the Royal Fleet Auxiliary (RFA).[31] If external support is required it is provided through the Defence Support Network, which could include host-nation support, potentially through a deployed forward logistic site or resupply from the UK strategic base. Ultimately, sustainability is a joint endeavour and support from across the UK military, and on occasion civilian contractors, is required. This logistic capability provides the UK with 'blue water' maritime forces, which can operate at distance from the UK. Furthermore, given the ability of maritime forces to operate legitimately near an adversary's coastline, a task group's fuelling, ammunition, medical support, water and food stocks can be used by the other Services. More importantly, the scale of supply is significant; RFAs carry fuel by the tonne, not the litre.

3

Section 3 – Maritime combat

3.29. Maritime capabilities can contribute to combat operations up to and including warfighting, either solely or in combination with other elements of a joint force. The main ways this is achieved is by:[32]

- exhausting enemies financially or blocking their supplies;
- enabling large-scale operations on land;
- launching or threatening attacks from the sea;
- seizing territories or resources;
- conducting cyber and electromagnetic activities in support of a joint endeavour;

29 On-board stocks are referred to as classes of supply. These are: Class 1 – provisions (including potable water); Class 2 – scaled stores items (principally this includes marine engineering spares, weapon engineering supplies); Class 3 – petrols, oils and lubricants; Class 4 – non-scaled items; and Class 5 – munitions.
30 Where stocks are not routinely held on board, for example, to support an aviation asset, a deployable spare pack is embarked.
31 Reciprocal agreements exist where maritime forces share logistic support shipping capabilities.
32 Gray, C., *The Leverage of Sea Power*, 1992, pages 31–55.

- participating in joint fires from the maritime flank;
- providing support from maritime-based air power; and
- providing protection to maritime shipping, and providing convoy escorts to help ensure the uninterrupted maritime movement of vital national supplies to the UK and its Overseas Territories.

3.30. Maritime power can sometimes play a significant part in the outcome of campaigns, and wider conflicts. Credible maritime power gives decision-makers options. In the Cuban missile crisis, maritime power helped the United States (US) to slow the pace of events and dissuade the Soviet navy from fulfilling their mission. This was achieved by threatening to apply force where they had comparative advantage. Similarly, by enabling the rapid use of air power independent of a host nation, aircraft carriers give politicians choice, such as the option to mount air strikes from the USS George H. W. Bush aircraft carrier as part of a wider, joint operation in 2014 to help save the Yazidis on Sinjar mountain.

Command of the sea and sea control

3.31. **Command of the sea.** This can be considered to mean having undisputed use of the sea for whatever purpose is desired. It is not, however, an end, but rather the means to an end; what you intend to do with it is more important than the act of getting command of the sea. What makes command of the sea worth pursuing is that it allows you to influence events on land through various means of power projection or economic warfare.

3.32. **Sea control.** This is about having just enough control, for just long enough, over just enough area to achieve a desired outcome or mission; as such, sea control is a spectrum of activity. As sea control is geographic and time based, it is possible for different parts of the same joint force dispersed across a large area to be operating at different parts of the spectrum of sea control at the same moment. Alternatively, a single force element in the same geographic area can rapidly move around the spectrum of sea control due to time and the activities of own and adversary units. Therefore, any navy's ability to use the sea is dependent on its ability to exert sea control – the use of the sea for its own limited purposes, over a limited geographical area and for a limited period of time.[33]

33 Command of the sea and sea control sections draw on original work provided by Dr Duncan Redford.

Sea control: Russia–Ukraine war, 2022

The illegal invasion and seizure of Crimea by Russia in 2014 had far-reaching repercussions, not least because the Crimean port of Sevastopol was the main naval base for the Ukrainian Navy; any ships berthed there were immediately subsumed into the Russian Black Sea Fleet. As a result, at the start of the Russia–Ukraine war in 2022, Ukraine had a small, under-resourced and widely dispersed fleet, which was significantly overmatched by the Russian Black Sea Fleet. The latter comprised around 80 warships of varying sizes, including a guided missile cruiser, frigates/corvettes, landing ships, submarines, patrol boats and minesweepers.

Whilst the land invasion of Ukraine started on 24 February 2022, the maritime war started a week earlier, with Russia imposing a blockade of Ukrainian ports. The Russian Black Sea Fleet conducted a series of attacks against Ukrainian naval vessels alongside, and prevented others from sailing, thus rendering the Ukrainian fleet ineffective. Furthermore, with sea control now established in the western Black Sea, Russia was able to employ maritime-launched land attack missiles with impunity to bombard coastal and inland locations. This allowed Russia to rapidly establish a foothold along much of the Ukrainian coast in the Sea of Azov (including strategically important ports such as Mariupol) and isolate the entire Sea of Azov, denying Ukraine the ability to move stores and munitions to the front line via maritime routes.

Sea denial

3.33. Sea denial is a form of constraint that prevents maritime forces from using an area in the manner that they would wish. Classic means of achieving sea denial include laying a minefield or deploying submarines to threaten enemy surface forces. A more recent method, particularly appropriate in littoral operations, is to project land assets such as surface-to-surface missile batteries along the coast. In addition, non-lethal effects such as control or disruption of the electromagnetic environment and other passive means can be used to support sea denial activities.

3.34. The effects of sea control and sea denial are often cumulative, not based on a singular event. Both postures rely on imposing an opportunity cost on the adversary. In other words, forcing an adversary to devote resources to something they would prefer not to do. Another way of achieving an opportunity cost in the maritime domain is through a fleet-in-being.

Sea denial: Russia–Ukraine war, 2022

Whilst Ukraine effectively had no functioning navy at the start of the Russian invasion of Ukraine in 2022, they were able to use the maritime flank to reverse this situation rapidly. Using a mixture of conventional (anti-ship and land attack missiles) and asymmetric (uncrewed surface vessels and aircraft), attack in, and from, the maritime domain, Ukraine was able to break Russia's sea control. The pivotal moment came on 13 April 2022 when the Moskva, the Black Sea Fleet flagship, was sunk by two anti-ship missiles fired from ashore. Not only was this a decisive action because of the status of the vessel, but it also resulted in a withdrawal of Russian maritime units to the central part of the Black Sea.

Buoyed by this success, Ukraine embarked on a series of bold attacks. These included: a missile attack on the Black Sea Fleet Headquarters in Sevastopol (September 2023); a number of uncrewed surface vessel attacks against Russian ships at sea and alongside; an attack on a maritime maintenance facility in Sevastopol (disabling repair facilities, a landing ship and one of only a few diesel submarines); and a naval drone attack against the Crimean Bridge (July 2023), which is the most direct means of resupply for the Crimean peninsula. The net result of these actions was that Russia, who were increasingly risk averse as a result of their losses, withdrew further from the central Black Sea, choosing to base the majority of their ships and submarines in the east Black Sea port of Novorossiysk. Ukraine had achieved sea denial in the western and central Black Sea.

3.35. **Fleet-in-being.** A state with maritime capability but without the force levels to achieve maritime superiority might choose, or be forced, to adopt a strategy of fleet-in-being. By avoiding confrontation with a superior enemy, a state can choose not to deploy their maritime forces, but their existence still poses a threat that requires an opponent to expend effort and resource in mitigating them.

Fleet-in-being: Russia–Ukraine war, 2022

By April 2024, Ukraine had disabled around one third of the Russian Black Sea Fleet and created an area of sea denial in the western and central Black Sea. Unable to bolster its fleet to replace losses from Ukrainian attacks due to the closing of the Bosphorus Strait to warships in February 2022, Russia had become more risk averse and had largely withdrawn its remaining ships and submarines to Novorossiysk. As a result, Russia had reduced ability to interfere with the movement of grain from Odesa, thus ensuring an essential revenue stream for Ukraine had been restored.

However, whilst the operations of the Black Sea Fleet are a much-reduced threat to Ukraine, the remaining two thirds of the Black Sea Fleet present a credible capability that must be mitigated. They are, in effect, a fleet-in-being, since Ukraine must expend time, money and effort to ensure any return to aggression by the Russian Navy is countered, thereby preventing the Ukrainians from using maritime power in other ways/missions.

3.36. **Decisive action.** While a successful decisive engagement at sea, where maritime forces classically oppose each other, is increasingly rare in the modern era, the concept should not be overlooked. Whilst it is true that a singular act can have a disproportionate effect on sea control, what is more common is a process of cumulative attrition or the concentration of joint military effect on a single outcome.

Maritime power projection

3.37. Maritime power projection is the threat, or use, of military force to influence events from the sea.[34] It exploits sea control and maritime manoeuvre to achieve access to threaten or project force ashore using a combination of amphibious forces, embarked aircraft, land attack weapons, cyber and electromagnetic capabilities, and special forces.

3.38. There are numerous ways in which maritime power projection can contribute to a joint operation. These are summarised below.

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.

34 Allied Joint Publication-3.1, *Allied Joint Doctrine for Maritime Operations*.

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 mixed land, air or maritime power against key adversary targets to force an adversary away from one course of action or to compel them to take another. Importantly, 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 attacks in cyberspace.

Maritime forces can help to shift the emphasis from defensive to offensive operations

f. **Project.** An important role of maritime power projection, particularly for 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 operating area 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 these same 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.

Key points

- The command and control of maritime forces presents unique challenges. Both directive command and mission command techniques may be employed effectively. The relationship between the two is influenced by the operational situation.
- Maritime forces are organised into task forces, task groups, task units and task elements. Units might be grouped together based on their primary tasks, their type, the area they are working in, or for another reason.
- Fighting power is made up of three interrelated components: conceptual, moral and physical.
- When deploying, ships, submarines, commando units and aircraft will assume a heightened material state, including specific theatre enhancements and specialist task equipment.
- Because they deploy at a heightened state of training, personnel, task equipment, stores and ammunition, maritime forces are able to move from peacetime to combat operations in a matter of hours.
- Maritime power can only be fully effective if fully integrated with other aspects of national military power as well as with other participants in the diplomatic, information and economic instruments of national power.
- Command of the sea allows an actor to influence events on land through various means of power projection or economic warfare.
- Sea control is about having just enough control, for just long enough, over just enough area to achieve a desired outcome or mission; it is a spectrum of activity.
- Sea denial is a form of anti-access and area denial exercised when one party prevents an adversary from controlling a maritime area without being able to control that area itself.

Chapter 4

This chapter describes the key roles of the UK's maritime forces. It then outlines some of the roles and capabilities that can be employed by the joint commander before highlighting the constituent parts of UK maritime power and how forces are organised for employment. Finally, a short section is included regarding joint operations.

4

> Maritime security is a strategic imperative for the UK.

Strategic Defence Review – Making Britain Safer: secure at home, strong abroad, 2025

Chapter 4

Employing maritime power

Section 1 – The roles of maritime forces

4.1. There are three characteristic modes of action (the 'trinity') by which maritime forces operate: warfighting, maritime security and Defence engagement. This is depicted below in Figure 4.1. The three roles, collectively or individually, depending on the specific circumstances, seek to stabilise the strategic maritime environment as well as help to ensure a secure and resilient UK. Often the boundaries between maritime security and warfighting operations may be difficult to distinguish and often involve Defence engagement as well. This versatility is one of the most valuable features of maritime forces; they offer options to decision-makers for escalation or de-escalation simply by altering posture.

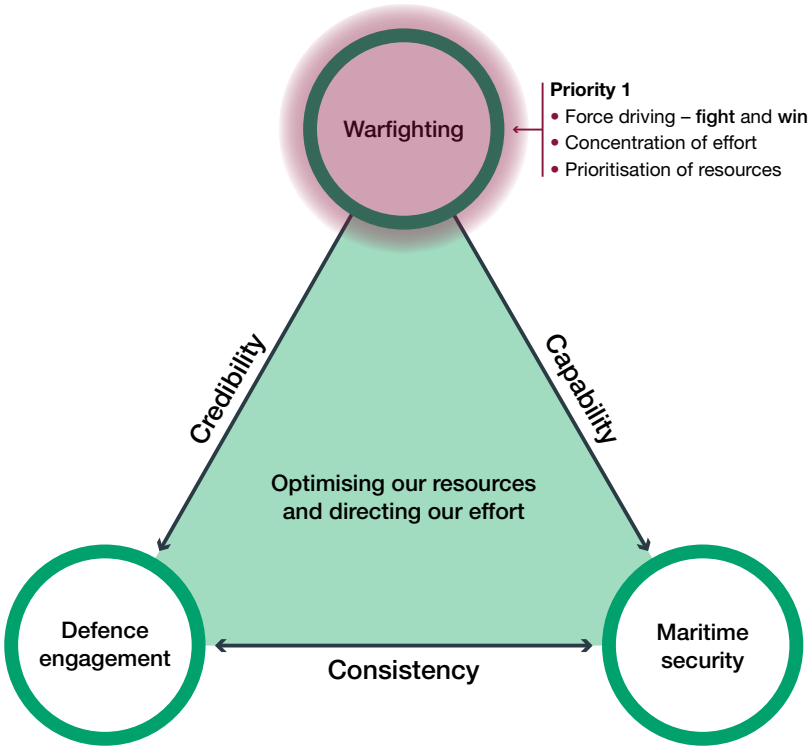

Figure 4.1 – The three characteristic modes of action by which maritime forces operate (the 'trinity')

Warfighting

4.2. The aim for the warfighting function is to have a powerful force that can fight and win, and quickly. Priorities are described below.

a. **Competitive command and control.** The maritime force contributes to an agile and integrated command and control framework, fusing information with the integrated force, other government departments and international partners. Data analytics, machine learning and computer-assisted decision-making allow machine-speed warfare. This in turn enables task group and disaggregated command and control, which is enhanced significantly by reachback for those areas such as data processing and analysis that can be stymied by bandwidth.

b. **Rapidly enhance or surge.** The maritime force can rapidly aggregate force elements into an area of operations – including those persistently engaged, exploiting manoeuvre through international waters, to deliver and communicate credible capability – often acting as the first responder and helping to set the theatre. Littoral response groups rapidly reaggregate into a littoral strike group, supporting and supported by partners and allies.

c. **Defeat with precision effects at reach.** Warfare in the maritime domain does not require the ability to permanently overmatch an opponent in every aspect, but to create battle-winning effects at the optimal time and location, in combination with wider integrated force effects. Increasingly, the range at which these effects can be created will be extended, enabling us to hold adversary capabilities at risk, at range, sooner and for longer.

d. **Capabilities in the close battle.** The maritime force delivers lethal strike from a variety of crewed and uncrewed platforms. The use of uncrewed systems can provide persistence, precision, lethality and reach while reducing risk to life. Moreover, the need to disperse forces and command and control capabilities to survive is more acute when there is still the need to concentrate forces to fight and win.

e. **Integrated force freedom of manoeuvre.** Whilst not always necessary to fight for theatre access, the combination of capabilities and effects within the maritime force underwrites the strategic requirement to gain access, by force if necessary.

f. **Resource de-escalation.** The flexibility inherent in the maritime force will secure advantage through a tailored response before rebalancing presence, posture and profile to exploit early gains. Strategic adaptability also enables the maritime force to rapidly relocate and seamlessly transition between engagement, maritime security and warfighting functions, thereby providing greater operational and political choice.

4.3. Warfighting activity covers a range of activities. These include:

- any offensive or defensive warfare activity;
- forcible access and theatre entry;
- lethal and non-lethal strike effects, potentially at range;
- counter anti-access and area denial (A2AD) activity; and
- protecting sea lines of communication and choke points, as well as securing supplies and reinforcements along key routes.

Maritime security

4.4. Maritime security operations are conducted against a wide range of activities, but the principal focus is any endeavour that helps safeguard national prosperity. Typical activities include:

- defensive action (short of warfighting);
- humanitarian assistance and disaster relief;
- non-combatant evacuation operations;
- countering piracy, slavery, people smuggling, illegal immigration, drug smuggling, arms smuggling and terrorism;
- countering the proliferation of weapons of mass effect;

- transits through contested areas to assert the right to freedom of navigation;
- maritime interdiction operations; and
- tracking/monitoring potentially hostile ships and submarines in the vicinity of UK waters and Overseas Territories.

Engagement

4.5. The aim within the engagement function is to maintain a force capable of deploying and sustaining task groups, task units and personnel around the globe, at sea and ashore, engaged with agencies and partners. The diversity of persistent engagement offers strategic agility and political choice to project the UK's global influence. Priority activities are described below.

a. **Enhance understanding by developing the global network.** The maritime force contributes to and leverages from Defence's global network, including reinforcing where appropriate. The use of specialist training teams to provide niche skills training further serves to develop partner capacities and establish, maintain or enhance global influence.

b. **Reassure.** The synchronised delivery of capability, ranging from the deployment of a carrier strike group, a short-term training team or the integration of personnel in an allied headquarters provides reassurance to allies, partners and neutral actors that the UK is committed to the activity.

c. **Engage to enable.** Over recent years the Royal Navy has reconfigured its fleet to increase the scale and breadth of its overseas presence. Forward deployed offshore patrol vessels, general purpose frigates and littoral response groups[35] provide a persistent presence and produce many more engagement opportunities, enabling the Royal Navy to reach more allies, partners and potential allies.

d. **Support strategic communication.** Persistent engagement delivers greater integration with partners and allies, enhanced regional understanding and identifies opportunities to compete, which would otherwise go undetected.

35 The core elements of a littoral response group comprise specialist amphibious ships, Royal Marine Commando detachments and ship-optimised helicopters from the Commando Helicopter Force, for example, Merlin Mk4 and Wildcat AH1 helicopters.

e. **Cooperate with adversaries.** Engaging with non-traditional allies and partners fosters greater military understanding, exploiting common Defence interests to enhance trust and awareness. In turn, this will serve to reduce the risk of miscalculation.

4.6. Engagement covers a range of activities. These include:

- permanent forward basing of ships and personnel (for example, the ships operating from the Naval Support Facility in Bahrain, collocated with the UK Maritime Component Commander);
- bilateral and multilateral Defence coalitions (such as the Five Power Defence Arrangements and the Joint Expeditionary Force (JEF));
- short-term training teams deployed to various locations;
- participation in multinational maritime exercises overseas; and
- providing UK-based operational sea training to numerous foreign navies.

Troops from the French Navy and the Royal Marines deploy ashore from Royal Fleet Auxiliary Lyme Bay during Exercise Catamaran

Section 2 – The maritime contribution to military power

4.7. While attacks between those at sea and those on shore are integral to modern combat, projecting force ashore can also be important to degrade enemy capabilities and to have a direct diplomatic outcome. Projecting force from the sea can be decisive, enabling manoeuvre across thousands of miles and deployment at scale.

> Without a decisive naval force we can do nothing definitive. And with it, everything honourable and glorious.
>
> General (later President) George Washington, speaking in 1781 during the American War of Independence

Deterrence

4.8. Through the deployment of ballistic missile submarines (ship submersible ballistic nuclear (SSBN)) facilitated by a comprehensive support network, Operation Relentless provides the UK's continuous at sea deterrent (CASD). This is a primary Defence task that provides a key safeguarding function for the UK and the North Atlantic Treaty Organization (NATO).

Strike warfare

4.9. Strike warfare is an attack against targets ashore using maritime-based forces. The UK has the ability to achieve this using a range of means that include fixed- and rotary-wing aircraft, missiles launched from either surface vessels or submarines and naval gunfire support. Additionally, amphibious forces can be deployed in a littoral strike capability from suitably equipped platforms.

4.10. Surface ships creating strike effect can move up to 400 miles a day (and potentially more albeit with significant fuel expenditure penalties), but their effect extends well beyond their physical range. They come with integrated command and control facilities, secure communications, and medical and force protection capabilities. Acclimatisation and theatre briefings can be conducted en route rather than on arrival. Maritime forces can also loiter on the high seas for extended periods. This combination of speed and endurance makes them a flexible tool for persistent engagement and enables them to react quickly to changing circumstances.

Rapid action from the sea

On 7 October 2001, the United States (US) and allies, including the UK, began combat operations against the Taliban in Afghanistan. The nearest strike aircraft were the F-14s and F/A-18s operating from carriers in the Northern Arabian Sea. Over the next ten weeks, carrier aircraft provided over 75% of all strike sorties, flying 4,900 out of 6,500 missions in concert with land-based air power including air-to-air refuelling and intelligence, surveillance and reconnaissance (ISR) aircraft. At the same time, amphibious forces from US ships, supported by the Royal Navy and by Royal Air Force (RAF) helicopters flying from Royal Navy ships, flew ashore to create the first significant US base in Afghanistan.[36]

Air and missile defence

4.11. Over the last 20 years there has been an increase in the number of long-range cruise and anti-ship missiles being operated by countries in competition with NATO. In many cases, these missiles are employed in an A2AD capacity. A2AD strategies are designed to hinder naval forces' access to key areas, such as the contested waters of the South China Sea or the Eastern Mediterranean. These strategies may involve the use of asymmetric warfare, legal and diplomatic processes to prevent access. Finally, assets such as land-based anti-ship missiles (including anti-ship ballistic missiles), fighter aircraft and other assets can be used to create a 'bubble' of denial that makes it difficult for naval forces to operate within a certain area.

4.12. In response, maritime forces employ the principle of air and missile defence (AMD),[37] which involves the integration of multiple sensor platforms, command and control systems, and weapons systems to detect, track and engage incoming threats. Theatre ballistic missile defence is a key element of AMD and its aim is to protect deployed forces and high-value assets/areas within a theatre of operations from attacks by ballistic missiles. The Type 45 destroyer is a key component of the UK's AMD capabilities. The Sea Viper system uses a combination of advanced radar and tracking technologies, along with interceptor missiles, such as the Aster 30, to detect and engage incoming

36 Lambeth, B.S., *American Carrier Air Power at the Dawn of a New Century*, 2005, page 28.

37 The use of AMD within this context ensures coherence with other NATO and UK doctrine. NATO also uses the broader term of integrated air and missile defence, which is defined as: 'all measures to contribute to deter any air and missile threat or to nullify or reduce the effectiveness of hostile air action in order to protect populations, territory and forces against the full spectrum of air and missile threats.' NATOTerm.

missiles and other threats. The Type 45 destroyer's command system is also designed to integrate with other assets, such as land-based radars, space-based missile detection capabilities and other naval vessels, to provide a more comprehensive defence against air and missile threats.

Maritime special operations

4.13. Maritime special operations forces comprise small, flexible, mobile units capable of operating under, on and from the sea to detect, deter and respond to threats. Such operations are characterised by stealth, speed and precise application of force.

Moving military materiel

4.14. Sea lift is the most practicable means of deploying large-scale logistic support to operations. Heavy lift capability combined with relative speed and flexibility can assist in the deployment, reinforcement, sustainment and drawdown of forces. This point is exemplified by Operation Granby, the British part of multinational operations to free Kuwait in 1990–91. Operation Granby required over 350,000 tons of general cargo and ammunition, as well as 16,900 vehicles, to be moved by sea. Once the land battle commenced, a further 19,000 tons of materiel were delivered per week, most of which arrived by sea.

Support to non-combat operations from the sea

4.15. Whilst naval forces are primarily scaled and configured for warfighting, their expeditionary capability and wide range of assets make them well-suited for taskings such as humanitarian assistance. Whilst aircraft move faster and may be able to get aid to a stricken spot more quickly than ships, particularly areas far inland, there are times when the nature of the disaster (such as an earthquake or hurricane) will deny the use of airports or landing strips. Furthermore, the sea enables the movement of a far greater tonnage. The most suitable method is therefore dependent on the situation, but generally a mix of air and maritime delivery. In the Caribbean or Indo-Pacific, the existence of hurricanes and typhoons is well known, but not which areas will be hit. Poising at sea, ships can stay out of the route of the weather system and then move to the most affected areas once it has past, delivering aid and resources directly to the point of need. Recent examples include Honduras in 2020 and Haiti in 2021, where a tropical storm followed an earthquake.

4.16. It may also be important to conduct a rapid underwater survey to enable port operations to recommence as quickly as possible. While commercial survey vessels can do elements of this work, military vessels are generally at a higher state of readiness and can operate in high-risk areas where commercial means may be uninsured or reluctant to. For the UK, this capability includes specialist teams possessing the ability to operate from vessels of opportunity, or from a bespoke small craft specifically delivered into theatre.

4.17. Finally, The Royal Navy trains for humanitarian assistance and disaster relief operations as part of its operational sea training. Its capabilities also benefit from highly skilled engineers, medical professionals, divers, small boat operators, organic aviation, firefighting skills and more.

4.18. Non-combat activities also include non-combatant evacuation operations (NEOs). These will often use a mix of assets, combining the advantages of both land-based aircraft and maritime assets. NEOs are generally a truly joint endeavour, using capabilities from across government, not just the military.

Non-combatant evacuation operations are generally a truly joint endeavour, using capabilities from across government, not just the military

The 2011 non-combatant evacuation operation from Benghazi, Libya

The 2011 evacuation of UK personnel from Benghazi was a response to the deteriorating security situation in the Libyan city during the early stages of the Libyan Civil War. The conflict, which arose from widespread protests against the regime of Colonel Muammar Gaddafi, quickly escalated into a full-blown civil war, creating a dangerous and uncertain environment for foreign nationals, including those from the UK. In response to the growing threat, a NEO was mounted, with the joint force headquarters (JFHQ) in command from an early entry headquarters established in the British High Commission in Malta. The Royal Navy redirected both HMS Cumberland (with a JFHQ operational liaison and reconnaissance team embarked) and HMS York to the region; over the course of 11 days, HMS Cumberland and HMS York embarked 497 UK entitled civilians for onward movement to Malta. The first group of 207 embarked by HMS Cumberland included babies, the elderly and some wounded personnel. The remaining 419 personnel were recovered by RAF C-130 and BAe 146 aircraft.

The operation demonstrated the ability of military maritime forces to respond quickly and effectively to a rapidly evolving and potentially hostile environment.

Protecting the rules-based international order

4.19. Sub-threshold actions are those deliberately conducted below the level of armed conflict. There are many varieties and they are not new. In general, however, the immediate aim of sub-threshold actions at sea is usually to change or create an area of effective control of a sea area. It may involve trying to create ownership of islands, rocks or shoals. It may be for economic gain from the resources there, or to restrict other states' use of the sea for transit. Much of the basis for achieving these aims is the principle of international law that for sovereignty to be recognised it needs to be asserted and exercised. In other words, if a state asserts and exercises unchallenged control of an area for long enough by the presence of maritime forces, and also regulating commercial activity, then their intent becomes reality.

4.20. Sub-threshold operations may threaten freedom of navigation across the seas. This is the largely unfettered movement of goods on which worldwide prosperity depends and the use of maritime force. Consequently, the UK, the US and other allies conduct freedom of navigation operations to

challenge unjust claims to state control. United Nations Convention on the Law of the Sea (UNCLOS) III delivers a careful balance between the wishes of some states to increase their control of adjacent waters and the desire of others to retain freedom of navigation.[38]

> We face grave threats to the law of the sea, the framework that protects freedom of the seas and open supply chains as the lifeblood of the world economy. As competition in the international order intensifies, some states have chosen to openly contest, selectively reinterpret, or discreetly subvert freedom of navigation. We saw this when Russia falsely claimed to fire warning shots at HMS Defender when she was in Ukrainian waters in June, or in the disruption of commercial shipping in and around the Strait of Hormuz. Such activity undermines the UNCLOS and threatens our collective security and prosperity.
>
> UNCLOS [and] freedom of navigation … might seem like issues that should only be of concern to academics and policy experts. They are not. They should concern us all. The global economy and our collective security are dependent on … our confidence in safe and unhindered passage across it.
>
> Sir Stephen Lovegrove, UK National Security Adviser, at the 17th Manama Dialogue, 20 November 2021

4.21. A relatively new area of concern is the possibility for dispute over passage through the Arctic, made possible more often due to climate change. The shorter routes available can save up to ten days sailing time between Europe and East Asia. The consequence of divergent views are partly mitigated by bilateral engagement and discussion at the Arctic Council.

4.22. Sub-threshold actions at sea may have a wider intent beyond control over sea areas. They can be used to affirm resolve, such as the JEF exercises, involving the UK, Denmark, Finland, Estonia, Iceland, Latvia, Lithuania, the Netherlands, Sweden and Norway. They can also test resolve and resilience, such as adversary actions against undersea cables.

38 Of note, 14 United Nations member states (including the US) have signed the convention/agreement but not ratified it, and another 15 United Nations member states have neither signed nor ratified the convention/agreement.

Section 3 – The constituent parts of UK maritime power

4.23. The Royal Navy operates a capable and balanced fleet that has been tailored to its primary tasks. Central to the UK's maritime power is the CASD, and associated assets to support and protect this capability. Two large aircraft carriers provide global reach and power projection, whilst destroyers, frigates and offshore patrol vessels provide a range of general and specialist roles in support of national and operational requirements, including anti-submarine, anti-surface and air defence, together with constabulary and ISR functions. The Royal Navy has its own aviation assets, comprising both fixed- and rotary-wing aircraft, capable of operating from both ashore and afloat. The submarine force comprises entirely nuclear-powered vessels and includes SSBNs and attack boats.

4.24. Deployed logistic support and amphibious platforms are provided by the Royal Fleet Auxiliary, allowing for extended reach and prolonging operational endurance when required. Amphibious power projection is centred on the specialist capabilities of the UK Commando Force, which comprises force elements from the Royal Marines, the British Army, the RAF and the Joint Aviation Command.

The Poseidon MRA1 (P-8A) is a multi-role maritime patrol aircraft, equipped with sensors and weapons systems for anti-submarine warfare

4.25. The RAF provide maritime patrol aircraft, which can operate independently or be integrated into naval operations as required, thereby providing ISR, command and control, surface and sub-surface strike options. Specialist capabilities and support is also provided by the British Army for both commando and aspects of port and maritime operations. Close liaison with other government departments is vital, as is interaction with commercial assets, some of which provide direct support to maritime security.

Section 4 – Joint operations

4.26. Operations in the modern world are rarely, if ever, conducted within a single operational domain. Historically, maritime, land and air forces have worked together to achieve agreed objectives. This joint approach to operations continues to underpin the UK's ability to deliver military power across the continuum of competition. Joint operations conducted correctly are extremely effective because the various capabilities across the single Services, combined with non-military capabilities, can complement the strengths and compensate for the limitations in each, thereby creating powerful synergies.

4.27. The five operational domains (maritime, land, air, space, and cyber and electromagnetic) cannot be regarded in isolation. Activities conducted within one operational domain will usually have elements of reliance, or create effect within, other operational domains. Understanding these interrelationships is vital. A coordinated multi-domain approach, which may involve cross-government, civilian and international elements as necessary, can provide a firm datum for the successful application of maritime power.

Key points

- The maritime force – by virtue of being a contingency force in use – is capable of creating simultaneous effect across the functions of Defence engagement, maritime security and warfighting.
- Strike warfare is an attack against targets ashore using embarked aircraft, missiles, naval gunfire or commando forces. It comprises fixed-wing, rotary-wing, cruise missile, offensive strike from surface platforms, naval gunfire support and littoral strike.
- Non-combat operations from the sea include humanitarian assistance and disaster relief operations, as well as NEOs.
- The UK seeks to uphold the rules-based international order. This includes challenging illegally claimed territorial seas. The UK, US and other allies conduct freedom of navigation operations to challenge unjust claims to state control.
- The Naval Service is the main actor within the maritime environment. It comprises four fighting arms supported by the Royal Fleet Auxiliary.
- UK maritime forces routinely include the capabilities of the Royal Navy and components of the British Army and RAF to support the military instrument to national power, particularly when operating in a task group. Maritime forces are therefore predominately a joint force.
- The modern operating environment is complex. A multi-domain approach is vital if the challenges and opportunities are to be recognised and capitalised on.

Lexicon

Section 1 – Acronyms and abbreviations

A2AD	anti-access and area denial
AJP	Allied joint publication
AMD	air and missile defence
BRd	Book of Reference digital
CASD	continuous at sea deterrent
HMS	His Majesty's Ship
ISR	intelligence, surveillance and reconnaissance
JDP	joint doctrine publication
JEF	Joint Expeditionary Force
JFHQ	joint force headquarters
MARCOM	Maritime Command
MOD	Ministry of Defence
NATO	North Atlantic Treaty Organization
NEO	non-combatant evacuation operation
RAF	Royal Air Force
RFA	Royal Fleet Auxiliary
SSBN	ship submersible ballistic nuclear
UK	United Kingdom
UNCLOS	United Nations Convention on the Law of the Sea
US	United States
USS	United States Ship

Section 2 – Terms and definitions

This section lists the definitions used in this publication along with some additional terms that may be useful to the reader.

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

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

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. (NATOTerm)

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

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

area of operations
An area within a joint operations area defined by the joint force commander for conducting tactical level operations. (NATOTerm)

carrier strike
An attack against targets ashore, or fixed locations at sea, using carrier launched fixed-wing aircraft and air-delivered weapons. (JDP 0-01.1)

deterrence
The convincing of a potential aggressor that the consequences of coercion or armed conflict would outweigh the potential gains. This requires the maintenance of a credible military capability and strategy with the clear political will to act. (NATOTerm)

integrated air and missile defence
All measures to contribute to deter any air and missile threat or to nullify or reduce the effectiveness of hostile air action in order to protect populations, territory and forces against the full spectrum of air and missile threats. (NATOTerm)

littoral
Land that can be directly affected from the sea, and sea that can be directly affected from the land. (JDP 0-01.1)

littoral region
Those land areas (and their adjacent sea areas and associated air space) that are susceptible to engagement and influence from the sea. (JDP 0-01.1)

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

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. (NATOTerm)

maritime power
The ability to apply maritime military capabilities at and from the sea to influence the behaviour of actors and the course of events. (JDP 0-01.1)

mission command
A philosophy of command that seeks to convey understanding to subordinates about the intentions of the higher commander and their place within the plan, enabling them to carry out missions with the maximum freedom of action and appropriate resources. (JDP 0-01.1)

non-combatant evacuation operation
An operation conducted to relocate designated non-combatants threatened in a foreign country to a place of safety. (NATOTerm)

strike warfare
Attack against targets ashore using embarked aircraft, cruise missiles, naval gunfire or commando forces. (JDP 0-01.1)

sustainability
The ability of a force to maintain the necessary level of combat power for the duration required to achieve its objectives. (NATOTerm)

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