

NATO STANDARDS RELATED DOCUMENT

ATP-02.1

**NAVAL COOPERATION AND GUIDANCE FOR SHIPPING (NCAGS) –
GUIDE TO OWNERS, OPERATORS, MASTERS AND OFFICERS**

Edition A Version 1

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NORTH ATLANTIC TREATY ORGANIZATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)
NATO STANDARDIZATION OFFICE (NSO)
NATO LETTER OF PROMULGATION

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1. The enclosed Standards Related Document ATP-02.1 Edition A Version 1, Naval Cooperation and Guidance for Shipping (NCAGS) – GUIDE TO OWNERS, OPERATORS, MASTERS AND OFFICERS, which has been approved by the nations in the Military Committee Maritime Standardization Board (MCMSB), is promulgated herewith. This SRD supersedes ATP-02 Volume II (STANAG 1318) and supports ATP-02 (STANAG 1040).
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REFERENCES

1 NATO STANDARDISATION COVERING DOCUMENTS

- a. Naval Cooperation and Guidance for Shipping (NCAGS) Manual.
STANAG 1040.

2. NATO POLICIES, DIRECTIVES AND GUIDANCE

- a. Naval Cooperation and Guidance for Shipping (NCAGS)
MC-376.

3. RELATED DOCUMENTS

NATO STANDARD DOCUMENTS

- a. Naval Cooperation and Guidance for Shipping (NCAGS) Manual.
ATP-02.

STANDARD RELATED DOCUMENTS

- a. Naval Cooperation and Guidance for Shipping (NCAGS) - Guide to Owners Operators
Masters and Officers.

ATP-02.1.

- b. Naval Cooperation and Guidance for Shipping (NCAGS) – Organisation, Publications
and Documents.

ATP-02.2.

Chapter 1 — General Information

0101 Introduction

1. The business of maritime trade is an essential, ongoing activity that contributes to the economic stability of nations and regions which may be at risk during military operations in areas of conflict. Nations and the merchant shipping community have a vested interest in ensuring that maritime trade is upheld to support the economy. It is in the interest of both military and merchant shipping to be able to identify legitimate shipping, to minimize interference with such ships, and to be able to focus on those ships that do not comply with international law or UN Security Council resolutions and conventions.

2. Military operations at sea will frequently involve, or have some impact, on merchant shipping and likewise merchant shipping may affect military operations. Cooperation between the military and commercial shipping can minimize delays and enhance the safety and security of merchant ships when transiting through maritime areas of operation. This is known within NATO as Naval Cooperation and Guidance for Shipping (NCAGS).

0102 Purpose of this Publication

To provide Ship Owners, Operators, Masters and Officers with information regarding the interaction between naval forces and merchant shipping. In particular, this publication serves as a handbook for the world-wide application of NCAGS principles and procedures that exist to enhance the safety of shipping in times of tension, crisis, or conflict.

0103 Scope of NCAGS

Due to the reciprocal influence, NCAGS is the interface with merchant shipping in support of the operational commander's mission. NCAGS enhances and contributes primarily to the following effects:

- Commander's freedom of manoeuvre.
- Commander's decision-making process.
- Effective and efficient commitment and use of military assets.
- Nations' economic well-being and international stability.
- Free flow of maritime trade in the area of operations.
- Merchant shipping's confidence in military operations.

Chapter 2 — NCAGS Operations and Communications

SECTION I – NCAGS OPERATIONS

0201 Concept

1. NCAGS promotes cooperation between military and civil maritime authorities and agencies, and merchant shipping.
2. Merchant ships can participate in NCAGS activities on a voluntary basis as guided by their National Shipping Authorities (NSA), owners, operators or charterers.
3. Information concerning ships, cargo and voyage details which will contribute to the enhancement of safety and security of merchant ships may be requested from owners, operators and masters. This information will be used to provide an overview of shipping activity and to assess the vulnerability of individual merchant ships. In times of increased tension or conflict, additional information may be requested. The commercial sensitivity of the information supplied by the merchant shipping community will be respected and protected.
4. If deemed necessary, NCAGS will provide the merchant master with up-to-date information concerning the situation and specific information on the voyage. This information can range from basic situation briefs to the provision of recommended routes and escort information.
5. Under normal circumstances, a military commander will not alter the destination of a merchant ship without the approval of the ship's owner, operator, master, or flag state. The military commander may, however, advise a diversion from a ship's planned route as necessary for its safety. Likewise, the master of the merchant vessel may inform the military authorities of a diversion, i.e. due to a change of destination, by promulgating a passage amendment (See Annex 2B).
6. In accordance with the United Nations Convention for Safety of Life at Sea (SOLAS), the master of the ship is always responsible for its safe navigation¹.
7. Areas of mutual interest between the military and the merchant shipping community could be where potential threats to merchant shipping exist, shipping involved in disaster relief, or areas where naval operations are taking place.

0202 NCAGS Structure.

1. NCAGS is tailored to support the operational commander's mission in the most efficient and effective way, depending on the character of the actual operation. The NCAGS structure consists of a permanent element known as the NATO Shipping Centre (NSC) and a number of deployable NCAGS elements that could be deployed depending on the situation and type of operation. Such an element may consist of one or more individuals, or a deployed team holding various roles including those described in subsequent paragraphs.
2. The NSC is located at NATO Maritime Command (MARCOM), Northwood, United Kingdom and is the link between NATO naval forces and the merchant shipping community.

¹ IMO International Convention for Safety of Life at Sea (SOLAS) 1974, Chapter V, Regulation 34-I.

Permanently manned by NATO, the NSC is the primary point of contact for the exchange of merchant shipping information between NATO's military authorities and the international shipping community. The NSC is also the primary advisor to merchant shipping regarding potential risks and possible interference with maritime operations.

3. Deployed NCAGS Element (DNE). If the operational situation requires, or other factors will improve the execution of the commander's mission, DNEs can be used. The assignment and tasking will be decided by the operational commander. The DNEs may have the following tasks.

- a. Local coordination of merchant ships.
- b. Local/area information gathering concerning merchant shipping/trade.
- c. Briefing of masters.
- d. Liaison with masters during merchant ships movements.

4. NCAGS Briefing Officer. Provides guidance to masters to support safe passage; this can be achieved through onboard briefings or other means of communication. Part of the briefing could be the collection and verification of relevant information from the master.

5. NCAGS Liaison Officer (NCAGS LO). Embarked onboard selected merchant ships, the NCAGS LO provides information to assist the master understand relevant naval/military requirements during a transit. Part of this liaison could be the collection and verification of relevant information from the master.

0203 Guidance to Fishing Vessels

Fishing vessels may take part in NCAGS and will require information concerning fishing movements and activities to enable de-confliction with military operations. This information will include the whereabouts of fishing grounds, numbers and types of fishing vessels, locations and types of fixed fishing gear.

SECTION II – NCAGS COMMUNICATIONS

0204 What can Merchant Shipping Expect from NCAGS?

1. Merchant shipping can expect to receive guidance from NCAGS covering a broad spectrum of situations and threats. However, in order to assess and cope with the threat and to deliver the most appropriate guidance and advice, NCAGS has a specific requirement for information from the merchant shipping community. NCAGS is therefore actively browsing various open sources as well as exploiting information received from maritime shipping. Information gathering and distribution is a two-way process that can only be successful if the various communication means and processes provided to and by NCAGS are fully utilised.

2. The primary way of distributing and requesting information is through the NSC. For merchant shipping this can vary from submitting an initial report, known as Format Alfa, (See Annex 2B) to the NSC, to registering into a reporting system. For the NSC this can vary from sending emails to telephone briefings. If the situation and environment warrants the need for a DNE, this information exchange may be performed by a DNE. In such situations, ships can receive guidance and advice by face-to-face briefings on board, or by other available means of communication. If support and/or assistance are required during the transit, embarking an

NCAGS LO may be considered. In order to substantiate the information exchange a number of documents and procedures, such as a Sailing Information (SI) outline (See Paragraph 0205c & Annex 2B) and an introductory letter, can be implemented.

0205 Means of Information Exchange.

1. Merchant shipping can expect guidance and assistance to enhance safe and secure transit. This can be achieved through one or more of the following means, but noting that this list is not exhaustive:

a. Format Alfa. An initial passage report from merchant ships that is normally sent to the NSC prior to transiting through military areas of operations. The content of Format Alfa can vary from operation to operation. Instructions on the information required will be provided via WWNWS or/and the NSC website. A template can be found at Annex 2B and on the NSC website.

b. Ship's Position Report. A daily position report, from merchants ships that should be sent when requested by military authorities, but usually once every 24 hours after the Format Alfa (initial passage report). A template can be found at Annex 2B and on the NSC website.

c. Sailing Information (SI). The primary tool used to provide briefs to masters covering safety and security, route, etc. It is complemented by other methods (e.g., NAVWARNs & websites). The SI outline will be amended as required to meet specific operational requirements and the needs of individual merchant ships. Extracts from the SI should form the basis of (and a record of) a telephone or face-to-face briefing. A template of an SI outline can be found at Annex 2B and on the NSC website.

d. Websites

(1) Although a website is an information pull mechanism, it is an efficient means to publish large amounts of information and advice to sizeable recipient audiences, which are able to search for information and consult reference materials. The NSC website (www.shipping.nato.int) should be the default option.

(2) The majority of merchant ships at sea do not have continuous internet access. The target audience for web-based information should be owners and shore-based organisations and agencies.

(3) Websites can also provide additional functionality such as:

(a) Restricting access to certain information in a password-protected area.

(b) Registration of merchant ships (e.g., in connection with a merchant ship movement management scheme).

(4) The content of websites can be controlled by the host, and there are no significant limitations on the amount of information provided (as is the case with WWNWS), which means that comprehensive information can be posted. However, there is no guarantee that the intended audience will consult the website or how often it will be revisited if consulted. Websites will, therefore, be used in conjunction with other methods of pushing information.

e. Face-to-Face Briefings

- (1) A letter of introduction will be provided by the operational commander and should be presented at the beginning of a face-to-face briefing.
- (2) Face-to-face briefings allow detailed information to be conveyed and provide the opportunity for questions, the provision of reassurance, and the gathering of information about the previous voyage. It also allows the briefing of sensitive information that should not be communicated over an open line.
- (3) Since face-to-face briefings require the use of briefing teams (e.g., in ports), individual briefings can be potentially resource-intensive as relatively few vessels in port will be briefed in this way, given short turnaround times, etc. However, if a face-to-face briefing is the only means of conveying information securely, the benefits of a safe voyage will outweigh the costs. Vessels to be briefed must therefore be prioritised, possibly according to risk.
- (4) If it is not feasible to brief merchant ships in transit, face-to-face briefings should always be considered in conjunction with a method of expanding the audience as widely as possible. Failure to do so could result in SOLAS obligations not being met.
- (5) The SI outline (See Annex 2B) should be used to prepare the briefing and to provide an unclassified written summary for the master of the ship as well as a record for NCAGS.

f. Telephone Briefings

- (1) Depending on the situation and nature of the information to be exchanged, telephone briefings may be the most effective and immediate means of exchanging immediate and urgent information with a specific master, such as reporting an attack. The briefing should follow the SI outline (See Annex 2B).
- (2) Used in conjunction with a checklist of information required, data gathered via telephone briefings can be vital in assisting the operational commander to assess the risk and, if appropriate, assign assets to investigate. It also helps the master take appropriate action if he is aware of the likelihood of, and timescale for, assistance.

g. Email

- (1) Most merchant ships have access to email, even if they make use of telex as a carrier, in which case the owners may need to set up permission for NCAGS to communicate with ships. Whilst ships may not continuously monitor email, it is nevertheless a good way of sending sailing information and responding to routine reports and questions. Ship owners or managers may instruct merchant ships to increase the frequency of connection for reading emails, especially if emails are based on transfer at specific times.
- (2) Email can also be an effective method of drawing the attention of registered users to new postings on a website.

(3) Most company security officers regularly monitor emails as a function of business and should be included as recipients for emails affecting their ships' movements.

h. International Code of Signals (INTERCO). May be used to communicate between naval units and merchant ships in company, using either Radiotelephony (primarily IMM VHF) or Flag Signalling (See Paragraph 0303.1).

i. New Media. The methods above could be augmented by types of new media (e.g., chat rooms, internet forums, and social networks). The use of such media should be considered when planning promulgation methods.

0206 Military Points of Contact

1. NATO Shipping Centre. In military operations, every effort is made by the commanders to provide a free link to either the NSC or a national equivalent. The NSC website provides information on NSC services and up-to-date information on national, multi-national and NATO operations and exercises. Useful documents and links to related sites can also be found there (See Annex 2A).

2. Local NCAGS Elements. Contact information for NCAGS elements will be distributed by NSAs, the NSC, an NCAGS Briefing Officer, NAVTEX, local shipping warning such as MARLO Advisory notices, etc.

3. Naval Units. Naval vessels or military aircraft may hail merchant vessels transiting an Area of Operations (AOO) in order to verify identity and intentions. Reporting instructions and contact information will generally be provided to merchant vessels prior to their transit of the AOO. Naval units can normally be contacted by calling standard IMM VHF frequencies.

Annex A to Chapter 2 – The NATO Shipping Centre

1. Aim.

The aim of the NATO Shipping Centre (NSC) is to act as the point of contact in NATO for the shipping community in order to exchange merchant shipping information between NATO's military authorities and the international shipping community.

2. Mission.

In support of the Alliance Maritime Strategy and in the line with the MARCOM campaign plan, the mission of the NSC is to:

Establish and improve relations between the Alliance, its partners and the civilian maritime community, to contribute to the planning and execution of maritime operations and support the establishment of the Alliance Maritime Situational Awareness in order to actively contribute to the Alliance's collective response to emerging common threats and security risks, as well as to contribute to maritime security for commercial.

3. Capability.

- a. The NSC, located at MARCOM Northwood, GBR, serves as the information fusion site for all NATO NCAGS operations worldwide. In time of peace and tension the NSC is conducting NCAGS on behalf of NATO.
- b. The NSC supports both NATO and multi-national worldwide operations.
- c. The NSC is designated as NATO's point of contact for merchant shipping and institutions, such as National Shipping Authorities, Ministries of Transport and other maritime authorities.

4. Shipping Data.

- a. Information held by the NSC includes both fixed data (e.g. dimensions) and variable data (i.e. voyage details).
- b. Any commercially sensitive data obtained by the NSC or by NCAGS will be appropriately protected.

5. Tasks.

- a. The NSC:
 - (1) Collects and processes merchant shipping data.
 - (2) Advises military and civil authorities of potential risks to merchant shipping.
 - (3) Identifies possible interference to maritime operations and exercises.
 - (4) Maintains an Internet site containing information on security related matters.
 - (5) Advises authorities and companies of risks. Identifies possible interference with maritime operations and requests their cooperation for the establishment of the shipping plot.

(6) Supplies information on merchant shipping to military commanders and civil authorities.

(7) Provides information and warnings to merchant ships.

(8) Provides advice on shipping operations.

6. Contact Details.

a. Website: <http://www.shipping.nato.int>

b. Email: info@shipping.nato.int

Annex B to Chapter 2 – NCAGS Information Formats

SECTION I – FORMAT ALFA

1. Format Alfa. A voyage/passage report designed for merchant shipping to provide the minimum data provision to military forces to match the operational need in a simplistic format. The basic information that will be requested in a Format Alfa (which will be adjusted to meet specific requirements) can be found in Figure 2B-1 and should be returned to the military authority in accordance with the initiating navigation warning.

FORMAT ALFA		
1.	Vessel's Name	
2.	Flag	
3.	IMO Number	
4.	MMSI	
5.	INMARSAT Telephone Number	
6.	Email Address/FAX Number	
7.	Current Position (at time UTC), Course and Planned Passage Speed	
8.	Next Port of Call and ETA (UTC)	
9.	Name and Address of Ship Owner and Operator/Charterer/Company Security Officer	
10.	Crew Numbers and Nationalities	
11.	Cargo	
12.	Security Measures Implemented Onboard	
Note: Different information may be requested, dependant on the maritime operation.		

Figure 2B-1. Format Alfa

SECTION II – SHIP'S POSITION REPORT

2. Ship's Position Report. A daily position report that should be sent once every 24 hours after Format Alfa has been submitted. It should also be submitted to report any changes to the ship's passage and when requested by military authorities. The format can be found in Figure 2B-2.

SHIP'S POSITION REPORT		
1.	Vessel's Name	
2.	IMO Number	
3.	Current Position (UTC)	
4.	Any Change to Itinerary	

Figure 2B-2. Ship's Position Report

SECTION III – SAILING INFORMATION

3. Sailing Information. An SI outline is issued to all merchant ships transiting a military Area of Operations (AOO) and any other ships requiring specific guidance within the AOO. The issue of SI outline indicates that a mutual understanding has been achieved; the Master has agreed to follow the routeing direction and NCAGS will monitor the ship's passage and divert if necessary. The SI outline is an important tool for the Military Commander in mitigating risk to merchant shipping transiting the AOO and a diversion can be signalled to a merchant vessel in transit if a danger develops on the planned track (See Section IV). Figure 2B-3 is provided as guidance to illustrate the possible content of a SI outline used in NCAGS.

SAILING INFORMATION			
Ship Details:			
Vessel's Name		International Radio Call Sign (IRCS)	
Flag		Speed	
Area or Route Covered		Final Destination	
<i>Note: An area or route covered describes the part of the voyage where the SI applies.</i>			
General Situation:			
<i>Note: Threat/risk to merchant ships, incidents, military presence, etc.</i>			
Route:			
During the passage you are advised to pass through the following positions:			

Position Designator/Waypoint	Latitude/Longitude	Remarks
1.		
2.		
3. etc.		
Special Advice/Procedures:		
Communications		
Emission Control Policy (EMCON)		
Suspicious Sighting Procedures		
Special Reporting Procedures (e.g. Emergencies)		
Procedures for Notification of Changes to Route or Destination		
Summary of NAVWARNs		
Self-Protection Measures		
<i>Note: To be used as applicable.</i>		

Figure 2B-3. Sailing Information

SECTION IV – DIVERSION AND AMENDMENTS TO PASSAGES

4. Notification of Diversion. A message from the military authorities to a merchant vessel notifying a diversion from the planned track. Any diversion after sailing will make clear the entire route to be followed to the immediate destination. The Diversion Message will give a new position, or positions, through which the vessel is requested to pass. The format to be used can be found in Figure 2B-4.

DIVERSION MESSAGE		
1.	Name of Vessel/IMO Number/IRCS	
2.	Reason for Diversion	
3.	Position or Time at which the Diversion is to take place	
4.	New Positions through which to pass	
5.	Immediate or New Destination and Amended ETA	

Figure 2B-4. Diversion Message

5. Notification of Passage Amendment. This message is sent by a merchant vessel to report amendments to a passage that has previously been reported to the military authorities by Format Alfa. Instructions for the notification of passage amendments will be given by the military authorities in the SI issued to the merchant vessel and will be adjusted to be applicable to the type and scale of the military operations taking place. Figure 2B-5 is provided as guidance to illustrate the possible content of a Passage Amendment message.

FORMAT ALFA PASSAGE AMENDMENT MESSAGE		
1.	Name of Vessel/IMO Number/IRCS	
2.	Position or Time at which the Diversion is to take place	
3.	New Track and Speed	
4.	New Positions through which to pass	
5.	Immediate or New Destination and Amended ETA	

Figure 2B-5. Format Alfa Passage Amendment Message

Chapter 3 – Passage Coordination and Procedural Guidance for Ships at Sea

SECTION I – PASSAGE COORDINATION

0301 Scope

A passage coordination scheme is used to achieve coordination between the operational commander, military assets, and one or more merchant ships that intend to pass through an area or along a route. The purpose of the scheme is deterrence and/or protection (including mutual protection amongst merchant ships).

0302 Considerations

1. It should be noted that the escorting military asset(s) may not be in a legal position, according to international law, Military Rules of Engagement (ROE) in force, and national caveats, to actively protect merchant ships under attack. Their response may be possible under the international law pertaining to the inherent right for self-defence. Military ROE are established on the political/strategic military level and forwarded to the Military Commander.
2. There may not be enough military assets to accompany all merchant ships in the military area of operations. For that reason the Military Commander will have to prioritize ships.
3. Passage coordination does not suspend the Master's responsibility for safe navigation¹. Merchant ships are not under military command or control of maritime units, but receive navigational guidance and threat information during the group transit period.
4. Embarking NCAGS LOs on board a merchant ship does not change the legal status and obligations of the ship.
5. Passage coordination can be conducted with merchant ships sailing individually or in groups through an area dangerous to shipping in the presence of naval units. Such ships or groups should be provided with Sailing Information.
6. Onward passage planning at the end of passage coordination will be considered for each ship. This may be either a continuance of a planned safe route or the ship may proceed as safe navigation permits.

0303 Methods of Communication

1. **International Code of Signals (INTERCO).** The normal method for the communication of maneuvering and other instructions between naval units and merchant vessels in company will be by the International Code of Signals, using either Radiotelephony (primarily IMM VHF) or Flag Signalling (See Paragraph 0205.1.h).
2. If circumstances suggest the likelihood of more complex maneuvering when in company with naval units, the military commander may consider providing copies of the publication ATP-1 Volume II – Allied Maritime Tactical Signal and Maneuvering Book to merchant ships. However, this will only be practicable if a NCAGS LO is embarked on all merchant ships.

¹ IMO International Convention for Safety of Life at Sea (SOLAS) 1974, Chapter V, Regulation 34-I.

0304 Formation and Manoeuvring in Passage Coordination

1. Purpose. To establish formation and manoeuvring instructions for passage coordination when ships are coordinated in groups.

2. Formation.

a. If required, merchant ships in passage coordination may be requested to sail in formation in order to ensure navigational safety during transit.

b. The preferred formation for merchant ships is a single column with positioning at a safe distance from each other, taking cargo, size, manoeuvring, and other factors into consideration. If necessary, formations with two or three columns may be used. Naval units operate as tactically required and are not considered to be part of the formation.

c. If ships are sailed in formation, they may still participate on a voluntary basis and may leave the formation at any time as long as it is safe to do so. Ships in formation may be required to agree by convention to follow the directives on formation and maneuvering.

3. Group Formation.

a. During passage group formations will be kept as simple as possible. Single column formations should be expected but, if required, formations with two or three columns may be used. As a minimum requirement, military commanders are advised to embark a NCAGS LO in each ship heading a column.

b. The distances to be kept between columns and between ships will be shown in the group formation plan issued to masters in their Passage Coordination Information (PCI).

c. Larger ships will normally be positioned ahead of smaller ships in a column, ships with dangerous cargo will be positioned at the rear and ships with critical speeds, or with handling difficulties, either at the side or at the rear.

4. Guide of the Group. One ship in formation will be designated as the Guide. It is the duty of the guide to accurately maintain the course and the speed ordered. If ships are in single column, the leading ship will be the Guide. If for any reason the leading ship falls out of line, the ship directly astern becomes the Guide of the column.

5. Line Guide(s). If there are two or more columns in the group, the ship(s) which occupy the same position in their column(s) as the Guide will become Line Guide(s) of their column(s). The Guide must maintain the course and the speed ordered, and Line Guides of columns must keep their correct station on the Guide. Ships in each column are to keep station on the Line Guides of their respective column.

6. Taking up Formation. When a group is forming, ships should place themselves as quickly as possible in their correct station relative to the Guide or Line Guide.

7. Stations. The first digit of the station in a formation is the column numbered from port to starboard. The second digit of the station is the position in that column numbered from front to rear (e.g., Station 24 is the fourth position in the second column counting from port).

8. Station-keeping. Accurate station-keeping and, in particular, avoidance of being astern of station are of great importance to the safety of the group.

9. Man Overboard. A ship in passage losing a man overboard must immediately inform the group by the quickest means. If formed in column she should not attempt to recover the man; the last ship in the column will try to do so. In all circumstances the leading unit will coordinate the action.

10. Time. All times in coordinated passage are to be expressed in UTC (ZULU).

0305 Lead-Through Operations

1. The purpose of a lead-through scheme is to minimize the risk to merchant ships transiting potential mined areas and to facilitate the liaison between these ships and the Military Commander for safe navigation.

2. If mine countermeasures operations are in progress in a particular area, merchant ships may be guided through the area by naval forces. Before arrival in the area, information on the rendezvous and procedures for such a routing will be provided by NCAGS.

SECTION II – PROCEDURAL GUIDANCE

0306 General Responsibilities of the Master

1. The master is at all times responsible for the safe navigation and handling of his/her ship. Advice and instructions issued by a naval authority, including a NCAGS LO, do not in any way relieve the master of these responsibilities².

2. Crisis Response Shipping will usually be sourced by commercial charter and masters of such vessels should be fully aware of their Charter Party. It may contain specific terms relevant to the use of the ship in a military environment.

3. It is the master's responsibility to ensure that all appropriate crew members are fully acquainted with the instructions necessary for the efficient performance of any communication duties including adherence to the Emission Control (EMCON) policy (see Para 0307 below).

0307 Helicopter Transfers

1. Conduct of Helicopter transfers. Helicopter transfer may be used to pass personnel or material. The master shall ensure that the correct preparations for helicopter transfers are made before giving approval for the transfer operation to commence.

2. Preparations and Procedures.

a. In accordance to SOLAS Chapter V 'Safety of Navigation', ships are to carry an up to date copy of Volume III of the International Maritime Organization (IMO) International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, Volume III³.

² IMO International Convention for Safety of Life at Sea (SOLAS) 1974, Chapter V, Regulation 34-I.

³ IMO International Convention for Safety of Life at Sea (SOLAS) 1974, Chapter V, Regulation 21.

- b. The IMO IAMSAR Manual, Volume III contains all necessary information of how to prepare the vessel as well as communication instructions and procedures for the conduct of helicopter winching.
- c. Hence, whenever a helicopter is to be used to transfer of personnel/material to or from a merchant vessel the procedures in IMO IAMSAR Manual, Volume III 2013, Section 2 shall be used.
- d. A new edition if IMO IAMSAR Manual, Volume III is published every three years.

Note: *Further advice on helicopter operations is to be found in the UK Admiralty Notice to Mariners No. 4 or US Coastguard Bulletin No. 3, published annually; and in the International Chamber of Shipping's Guide to Helicopter/Ship Operations.*

0308 Emission Control (EMCON) Policy and Plans

1. In times of tension, or when working with military forces, it may be necessary to restrict, or cease, the normal usage of ships transmitters, navigational equipment and other communication systems.
2. The EMCON policy depends on local threat assessment and may affect the passage in certain circumstances. Military authorities, if required, will issue formal advice and guidance. This will be of primary importance when under escort, taking part in lead-through of mined areas, or as part of accompaniment.
3. EMCON is the selective control of emitted electromagnetic or acoustic energy. The EMCON policy in force has two aims:
 - a. To minimize the enemy's detection of emissions and exploitation of the information so gained.
 - b. To reduce electromagnetic interference thereby improving friendly sensor performance
4. The military commander will produce an EMCON plan, which governs all electronic emitters onboard. Electronic emissions, including Automated Identification Systems (AIS) emissions and emissions for testing and tuning, can be restricted. Participating and designated ships are required to adhere to the EMCON plan.

0309 Sensitive Documents and Equipment

1. On occasion, when a merchant ship is working with military forces, classified material may be carried on board. Such sensitive material is the responsibility of the embarked NCAGS LO and requires special handling and precautions.
2. Although SI or other documents issued to the master may be unclassified, due to the potentially sensitive nature of their contents, the information should only be made available to the crew on a need-to-know basis. On completion of a voyage, if not collected by NCAGS personnel, the master should destroy these documents.

Chapter 4 – Protective Measures Against Threats to Merchant Ships

0401 Introduction

1. The aim of this chapter is to identify various types of threat, to give general advice on how to avoid a threat and to outline protective measures and ways to counter the consequences of an attack. Detailed information on specific threats may be provided by the military authorities.
2. There are minimal defensive measures available to merchant ships, which are normally unarmed, have a small crew and are restricted by civilian regulations. Situational awareness is necessary if a master is to counter or avoid a threat, or mitigate the consequences. This includes knowledge of the threat and of the presence of friendly forces or authorities that can be contacted to provide support. It also includes knowledge of individual preparations that can be implemented prior to entering a threat area.

0402 Situational Awareness

1. Some aspects about the merchant ship's own situation to be considered are:
 - a. **The Threat.** Merchant ships may be sailing through areas threatened by piracy, terrorism or military conflict. The threat may comprise both regular military forces and para-military forces such as guerrillas or terrorists. These para-military forces tend to use a variety of weapons and methods of delivery and usually attack without warning.
 - b. **Protection.** Merchant ships may be sailing through areas where protection is provided either through a general naval presence, through accompaniment or escort of individual ships or groups of ships, or they may be transiting areas where no protection is available. Depending on the political situation and military rules of engagement in effect, naval forces may be able to assist and protect merchant vessels under attack.

0403 Threat Warnings

1. If transiting through an area where military forces are operating, the Military Commander may issue Threat Warnings to indicate to merchant ships the likelihood of an enemy attack. These warnings are written in plain language and may use a colour code as described below (See Annex 4B):

THREAT WARNING WHITE	Attack is unlikely without adequate warning. Normal peacetime steaming. Safety of navigation posture.
THREAT WARNING YELLOW	Attack is probable.
THREAT WARNING RED	Attack is imminent or has already commenced.

These colour codes may be preceded by one of the following words to indicate the type of threat:

AIR.
MINES.
CBRN (Chemical, Biological, Radiological, Nuclear).

SURFACE.
SUBMARINES.

2. General Threat Countermeasures. At times of increased threat warning levels there are a number of precautions that can be undertaken to help reduce the possibility of attack and/or reduce damage levels (See Annex 4A).

0404 General Threat Considerations

1. Identification. The threat will depend on the attacker's ability to detect and identify a target. Also the weapon range and the range/endurance of the weapon carrying platform will decide how far to sea an attack is likely to be achieved. In some situations, however, one has to assume that attacks can be carried out indiscriminately. As a general rule threats are more likely to occur in choke points (straits, fjords, off capes) where less sophisticated weapons are likely to be employed.

2. Weather and Sea State. Reduced visibility may hamper the attacker's ability to detect and identify a target. Some weapons and sensors will have reduced effect in poor visibility, for instance laser guided weapons and infra-red weapons and sensors. Smaller vessels may be hampered in high sea states. High sea states and humidity may impair the use of sensors and weapons.

3. The Use of Active Electronic and Acoustic Equipment. The use of active electronic and acoustic equipment such as radio, mobile telephones, satellite communication systems, radars, AIS, echo sounders and doppler logs may be important sources of information to an attacker. These devices and systems can compromise a vessel's position and identity. The use of active electronic and acoustic equipment should be minimized in a threat environment (See Chapter 3 Paragraph 0308).

0405 Types of Threat

1. The types of threat that may be encountered include:
 - a. The Air and Surface Threat (see Annex 4B).
 - b. The Submarine Threat (see Annex 4C).
 - c. Underwater Sabotage at Anchorages (see Annex 4D).
 - d. The Mine Threat (see Annex 4E).
 - e. The Threat from Nuclear Weapons (see Annex 4F).
 - f. The Threat from Chemical Weapons (see Annex 4G).
 - g. The Threat from Biological Weapons (see Annex 4H).
 - h. The Threat from Piracy (see Annex 4I).
 - i. The Threat from Terrorism (see Annex 4J).

0406 Protective Measures and Self-Protective Measures

1. The variety of merchant ships and threats make it impossible to make an exhaustive list of protective measures, tailored to a specific ship or situation. Some commercial companies specialise in training of crews and tailoring of defensive measures. National and international organisations like the IMO provide guidance and regulations with regard to general safety aspects. These companies and organisations may be consulted to optimise preparations prior to entering a threat area.
2. The IMO International Ship and Port Facility Security (ISPS) Code has been developed to counter peacetime threats. Fulfilling the requirements put forward in this code should prepare merchant ships and ports to deal with peacetime threats, including the threat from terrorism. Therefore, always review the Ship Security Assessment (SSA) and the implementation of the Ship Security Plan (SSP), as required by the ISPS Code, to counter, amongst others, the piracy threat.
3. It is possible that a military operation will require a situational awareness communication strategy to be deployed in area where there may be an increased threat to merchant shipping. This may include a registration portal or other similar procedures. It is advised to investigate this when planning voyages in such areas and register in accordance with the instructions promulgated.

Annex A to Chapter 4 – Recommended Protective Measures

1. The following check list identifies recommended protective measures to be taken upon the issue of threat warnings by the Military Commander (see Paragraph 0403).

Threat Warning Yellow:	
a.	Increase watertight integrity posture. Essential watertight hatches and doors and outside hatches and portholes should be kept closed and secured.
b.	Wear clothing made of fire retardant or <u>non</u> -man-made fibre.
c.	Post extra lookouts. Ensure lookouts properly briefed.
d.	Implement darken ship routine.
e.	Treat unidentified vessels and small craft with caution.
f.	Attempt to establish the identity of any approaching vessel, and carry out evasive manoeuvres if this cannot be done.
g.	Limit the use of electronic equipment to essential transmissions and safety of navigation.
h.	Be prepared to issue emergency reports.
Threat Warning Red add:	
i.	Ensure fire pumps running, hoses are connected and ready to use.
j.	Have life jackets immediately available; wear life jackets where practicable.
Note. <i>These recommendations do not replace existing Ship's Security and Safety Instructions (Ship's Security Plan/Safety Management Manual).</i>	

Figure 4A-1. Recommended Protective Measures Check List

Annex B to Chapter 4 – The Air and Surface Threat

1. The Threat

a. Maritime units may come under attack from conventional or asymmetric forces employing airborne weapons launched from aircraft (including helicopters), ships, submarines and land-based sites. These weapons can include bombs, rockets, machine guns, biological/chemical agents or anti-ship missiles (ASM). Additionally, aircraft or unmanned air vehicles may be used for surveillance and reconnaissance to support other units in conducting attack with the possibility of also being used for suicide attacks. Without information provided by military forces, merchant ships will get little or no warning of an emerging air threat or attack.

b. The ASM threat, which can be launched from all manner of ships, submarines, and aircraft as well as from shore, may be launched from distances measured from miles to hundreds of miles. The missile has the performance characteristics of a small, very fast aircraft; it may use its own radar to home in on a ship, or it may home in on the ship's own radio/radar transmitters or infra-red emissions (e.g. heat from funnels), or use information from a third party (for example a surveillance aircraft).

c. The launch of a missile may be detected through a visible flash and smoke. Missiles will normally hit above the waterline. The main hazard is likely to come from fire, caused either by the warhead explosion or by the unspent fuel from the missile motor.

d. The surface threat in military conflict may consist of naval surface vessels such as destroyers, frigates, corvettes or (fast) patrol boats. In areas where the surface threat stems from terrorism, piracy or non-regular forces, there may be a threat from smaller vessels like fishing vessels, tugs, speedboats and even personal water craft (jet-skis). In such areas, any unidentified craft approaching the ship may be a potential threat. Terrorists, pirates and other non-regular forces may use short range, hand-held weapons. Any type of vessel may be used for suicide attacks. The surface threat from pirates, terrorists and non-regular forces will normally diminish with the distance from the coast.

e. Merchant ships may be harassed by ships using close approaches, use of searchlights against the bridge and non-compliant boardings.

2. Self Protective Measures

a. Watch for evidence that the ship is under surveillance. Visual lookout should be all-round and continuous.

b. Increase speed.

c. Reduce the number of crew on the weather decks, in positions near the weather decks, or in machinery spaces, to the bare minimum required for safe steaming. Move all the remaining personnel to a sheltered position above the waterline with short access to the upper deck.

d. If under **missile** threat:

(1) Reduce the heat signature by cooling down the funnel.

- (2) Turn off all radars if ordered by the Military Commander (to reduce threat from anti-radiation homing missiles).
- (3) Maintain listening watch on radio circuit detailing missile threat information and ship manoeuvring orders (example IMM VHF 16).
- (4) Ensure damage control personnel if embarked are positioned for rapid response to fire and shock damage.

Annex C to Chapter 4 – The Submarine Threat

1. The Threat

- a. Submerged submarines are very difficult to detect with other than specially designed sensors, and an attack will occur without any warning. Submarines have the ability to detect merchant ships noise at long range, and to identify ships based on propeller revolutions, engine noise, and noise generated by other equipment such as auxiliary engines, pumps, etc. They may also be able to locate and identify merchant ships by their radar, AIS receiver, echo sounder or their visual appearance.
- b. The main weapon systems are most likely to be sophisticated torpedoes and/or missiles. Less sophisticated submarines may be equipped with straight running torpedoes, which may be easier to evade.
- c. Missiles may be launched from distances measured from miles to hundreds of miles. The missile has the performance characteristics of a small, very fast aircraft; it may use its own radar to home in on a ship, or it may home in on the ship's own radio/radar transmitters or infra-red emissions (e.g. heat from funnels), or use information from a third party (for example a surveillance aircraft).
- d. The launch of a missile may be detected through a visible flash and smoke. Missiles will normally hit above the waterline. The main hazard is likely to come from fire, caused either by the warhead explosion or by the unspent fuel from the missile motor.

2. Self Protective Measures

- a. Avoid, whenever possible, areas where submarines are likely to operate.
- b. If navigating within an area where submarines operate, alter course 30 degrees minimum every 20 to 30 minutes.
- c. Reduce the number of crew on the weather decks, in positions near the weather decks, or in machinery spaces, to the bare minimum required for safe steaming. Move all the remaining personnel to a sheltered position above the waterline with short access to the upper deck.
- d. If the position of a submarine is indicated, a merchant ship should proceed at full speed away from the submarine and making short 15 degree minimum course alterations every 8 to 15 minutes.
- e. If under torpedo threat:
 - (1) Reduce the number of people below decks.
 - (2) Alter course drastically if a straight running torpedo is detected.
- f. If under missile threat:
 - (1) Reduce the heat signature by cooling down the funnel.
 - (2) Turn off all radars.

(3) Reduce the number of crew on the weather decks, in positions near the weather decks, or in machinery spaces, to the bare minimum required for safe steaming. Move all the remaining personnel to a sheltered position above the waterline with short access to the upper deck.

(4) All personnel should move away from the threat direction, keeping away from windows.

(5) Presenting the least vulnerable part of the ship to the attack might limit subsequent damage.

Annex D to Chapter 4 – Underwater Sabotage at Anchorages

1. The Threat

- a. A merchant ship at anchor can be subject to various potential threats, both in peacetime and in conflict, varying from acts of terrorism to acts of war. Merchant ships may be the direct target of saboteurs and special forces aiming to sink the ship.
- b. Fulfilling the requirements of the ISPS Code should help merchant ships to counter peacetime threats, including the threat from terrorism.

2. Self Protective Measures

- a. Post extra lookouts on the upper deck. Ensure lookouts are properly briefed.
- b. Deploy own ship's waterborne security patrol.
- c. If possible, rotate the propeller, continuously or at short irregular intervals, as circumstances permit.
- d. Operate bow and stern thrusters at zero (0) thrust.
- e. Turn the rudder frequently.
- f. Switch the echo sounder to transmit counter/combat swimmer/diver threat.
- g. Avoid anchoring close to shore as it makes it more difficult for divers to attach limpet mines etc.
- h. If a limpet mine is detected, consider flooding the section on the inside with water in order to reduce the effect of the explosion.
- i. Use search lights down in the water and on the surface close to the ship in order to locate swimmers/divers.

Annex E to Chapter 4 – The Mine Threat

1. The Threat

a. Sea mines remain the most likely and dangerous weapon to be used against shipping in every potential conflict. As a weapon, they are relatively cheap and easy to lay by both military and civilian assets (i.e. aircraft, fishing vessels, etc). Nowadays sea mines vary from very simple moored contact mines to mines using high technology to detect and identify potential targets.

b. Sea mines are classified in several ways but can be categorized into three groups.

(1) Moored Mines. A mine of positive buoyancy held at a pre-determined depth below the surface by a mooring attached to a sinker on the sea bed. The mine case can be laid to water depths up to 45m while the sinker can be placed in excess of 500m. Moored mines can be triggered by contact or by a magnetic or acoustic influence.

(2) Bottom Mines. Bottom mines can be triggered by any influence (acoustic, magnetic, seismic, pressure), or a combination of these influences. These types can be laid up to maximum water depths of 120m, depending on the target and/or the amount of explosive charge, but water depths up to 60m are more suitable.

(3) Moving Mines. This is a collective description of mine types which are not stationary. All floating, oscillating, rising or homing mines belong to this category. As an example, rising mines can be laid at a depth of 500m (mine case) and 2400m (anchor).

c. In most cases routes will be designated in an area where mines are suspected and will be subject to mine countermeasure operations by naval units. When selecting these routes the military commander will take many factors into consideration, including suitability of the environment for mine counter measure operations, clear of high tidal streams and currents where possible and to be in range of good visual and/or radar fixing marks for navigation, as well as in range of radar surveillance/coastal defence. Routes will be as short as possible and bends over 20 degrees will be avoided.

2. Self Protective Measures

a. If possible, avoid waters with less than 200m water depth.

b. If possible, sail at high water in order to increase the distance between hull and mine.

c. If possible, take advantage of favourable currents or tidal streams, which will reduce the time spent in the area of danger without the need to increase speed, or alter other ship-made influences. Tidal stream or current will also cause a moored mine to dip, which may result in a ship passing over a moored contact mine.

d. Keep the lowest steering speed, in areas where a mine threat might exist, especially in waters of less than 60m.

e. Ensure that the maximum degree of watertight integrity is maintained below the main deck.

- f. Do not throw anything overboard. Many objects that float may be mistaken by lookouts for floating mines.
- g. Watch should be kept for any unusual or suspicious activity, such as the releasing of objects into the sea that might indicate mining activity. Aircraft may release mines with or without parachutes.
- h. If a mine clearance operation is in progress in a particular area, merchant ships may be guided through the area by naval forces. Before arrival in the area, information on the rendezvous and procedures for such a routeing will be provided by NCAGS.
- i. Follow directly over the same ground as the ship ahead, avoiding violent manoeuvres that generate noise.
- j. Minimize the ship's acoustic signature by securing non-essential machinery and impose a silent routine to keep human and mechanical noise to a minimum. Avoid unnecessary alterations of course, engines reversing, or extreme changes of revolutions that generate noise.
- k. Reduce the number of personnel remaining below the main deck, or in compartments below the waterline, to the absolute minimum.
- l. Order all personnel to put on safety helmets (hard hats) and life jackets should be worn when on the upper deck.
- m. Personnel on the upper deck should stand clear of stays, antennas, and overhanging parts of the superstructure.
- n. It is advisable not to anchor in the Mine Threat Area (MTA), but if unavoidable master's should be aware of the change to the ships magnetic and acoustic signatures that this would entail.
- o. If a **mine** is sighted:
 - (1) Evacuate all personnel from compartments below the main deck and from below the waterline.
 - (2) Order all personnel to 'brace for shock'. This position can only be held for a limited time and should only be ordered when danger is imminent

Annex F to Chapter 4 – The Threat from Nuclear Weapons

1. The Threat

a. Any weapon designed to deliver a conventional explosive could be used to deliver a nuclear explosive.

b. Characteristics. In case of a nuclear explosion, ships and personnel may be exposed to the flash, thermal radiation, initial nuclear radiation and contamination in the form of fallout.

2. Self Protective Measures

Ships and personnel can be protected to an appreciable extent against the hazards of nuclear attack by material measures, protective clothing and good organization. If a ship has a pre-arranged countermeasures plan, ensure that all measures laid down in that plan are carried out. If no such plan is in existence, consider adapting ships procedures to include the following measures:

a. Ships should be manoeuvred to avoid contamination or to exit the contamination area as soon as possible.

b. A group, or groups, of compartments should be selected for the crew to take shelter. The spaces should be as low down in the ship and as far removed from the ship's side as possible. These spaces should be equipped with washing and lavatory facilities and sufficient food to last for the passage through the danger area. Spaces selected should be capable of being completely shut down with all ventilation and other openings secured.

c. Stow below or cover as much gear on the weather decks as possible, particularly absorbent materials such as rope, awnings, etc. Ensure that food stores and galleys are closed down with all openings closed. Stop all ventilation fans and close or cover all ventilation and other openings that are not essential for running machinery and continued steaming. In the absence of suitable closures, the use of adhesive tape, etc. is recommended.

d. Consider having the crew don immersion suits or fire-fighting gear. The gear is to be used to minimize skin exposure. Breathing apparatus can be used to help prevent airborne agents from being inhaled.

e. Rig and activate all available fire fighting/wash-deck hoses and nozzles to spray water continuously over as much of the weather decks and superstructure as possible, to prevent contamination settling. If complete coverage is impossible, concentrate effort on the wheel house/bridge, over the top of the shelter position(s) and above the machinery spaces.

f. If continual spraying of the upper decks is impracticable, organise working parties to wash down the weather decks and superstructure. In the event of a nuclear incident, this should be done at frequent intervals to reduce the build-up of contamination.

g. As soon as possible after clearing the dangerous area, carry out a thorough hosing down of the entire weather decks and superstructure.

- h. Minimize the number of crew who must remain on the weather decks, in positions near the weather decks, or in machinery spaces, to the bare minimum required for safe steaming. Keep the remainder of the crew in the selected shelter position(s).
- i. Ensure that all personnel remaining in exposed positions (including machinery spaces, unless ventilation can be stopped), are fully clothed, preferably in foul weather clothing with all skin covered as far as practicable. Masks with breathing apparatus should be available and donned if threat is imminent.
- j. Restrict unnecessary movement throughout the ship, to minimize the possible spread of contamination.
- k. Unless essential, do not distil water for drinking whilst in the danger area.

3. Additional Protective Measures in The Event of a Nuclear Attack

- a. Light flash and thermal radiation from nuclear attack can be countered by such measures as protective clothing, shielding the eyes, and shelter behind superstructures. Initial nuclear radiation can only be reduced by substantial shielding.
- b. Move personnel in exposed or relatively unsheltered positions (including machinery spaces) as often as possible, in order to minimize the radiation dosage. Take as much shelter as the safe navigation of the ship will permit.
- c. Ensure that all exposed personnel remove their outer clothing on returning to shelter, and wash their exposed skin thoroughly, especially the hands, face and neck, as soon as possible, and in any case before drinking or eating.
- d. The effects of nuclear fallout can be reduced by pre-wetting exposed surfaces, closing down air intakes and machinery spaces temporarily, sheltering the crew below decks and decontamination. The presence of fallout, and a rough indication of intensity, can be monitored using simple radiation detecting instruments, if available

Annex G to Chapter 4 – The Threat from Chemical Weapons

1. The Threat

Chemical compounds are available with such versatile properties that, in addition to being able to kill, they may be used to incapacitate and to do so for varying lengths of time. Moreover, these effects can be achieved without material damage or destruction. The use of chemical agents is directed primarily against humans or food supplies.

a. Method of Attack. The probability of a chemical attack at sea is low but the possibility must not be discounted; any weapon designed to deliver a conventional explosive or nuclear load could also be used to deliver a chemical agent. Obviously, an attack on a ship at sea requires great accuracy to be effective. The following delivery methods are possible:

- (1) Air burst bombs or missiles to envelop the target in aerosol spray or droplets.
- (2) Aerosol or droplets sprayed from an aircraft or cruise missile.
- (3) Chemical filled shell or missile.

b. Types and Characteristics of Chemical Agents. Chemical agents may be liquids, aerosols, vapours or solids and can produce a very rapid reaction if inhaled, absorbed or swallowed in any form. In liquid or aerosol states they may penetrate clothing and skin, even though the droplets may be so small that they cannot be seen or felt upon the body. The most likely groups to be used are:

- (1) Nerve agents.
- (2) Incapacitating agents.
- (3) Blister agents.

c. Nerve Agents.

(1) The most dangerous of the known lethal chemical agents comprise the nerve group. These act on the body through the nervous system. The agents are liquids emitting a toxic vapour that can be inhaled, absorbed through the skin or swallowed with contaminated food or water. Contaminated areas remain dangerous for a period which varies according to the concentration, weather conditions and the type of structure on which the agent has landed. It is most dangerous in confined, unventilated spaces.

(2) Symptoms of nerve agent poisoning are any one or more of the following:

- (a) Blurring of vision - difficulty in focusing.
- (b) Excessive salivation.
- (c) Sudden headache.
- (d) Tightness of the chest.

(e) Pinpointing of pupils of the eyes.

(3) Later, unless preventative measures are taken quickly, convulsions and paralysis occur, followed by death. With large doses, death comes within minutes. A sub-lethal dose can reduce the body's resistance to a subsequent dose for days or even weeks.

d. Incapacitating Agents. These are non-lethal agents that produce physical and/or mental effects of sufficient severity to prevent personnel from carrying out their normal duties. The duration of effect can last from several minutes to several days. Recovery is usually complete and normally there are no after-effects. These agents can produce one or more of the following states: temporary paralysis, persistent lachrymation (excessive watering of eyes), diarrhoea, vomiting, convulsive spells or mental confusion.

e. Blister Agents

(1) The principal blister agent, known as 'mustard', gives off an invisible vapour having a slight but characteristic odour of garlic or onions.

(2) It may be delivered in the form of vapour or liquid and in either form can seriously damage the eyes, respiratory passages and skin if these are unprotected. It will penetrate normal clothing in a few minutes. Severe internal injury will result from the consumption of contaminated food or drink.

(3) Symptoms may first appear in the eyes, varying from mild irritation to intense pain. Penetration of the skin will result in inflammation with an itching or burning sensation. More severe penetration causes the formation of blisters which, when broken, leave a raw, painful surface, easily infected.

2. Self Protective Measures

As with defence against nuclear attack, individual ships and crew can be protected appreciably against chemical attack by material measures, protective clothing and good organization (See Annex 4F Paragraph 2).

Annex H to Chapter 4 – The Threat from Biological Weapons

1. The Threat

- a. Biological agents would normally be delivered by:
 - (1) **Airborne Methods.** Aircraft or missiles releasing an aerosol cloud or releasing the agent in canisters, bomblets, or rockets.
 - (2) **Ashore.** Aerosol generators or sprays.
 - (3) **At Sea.** Aerosol generators or sprays from ships, ship borne missiles, submarines, or floating mines. The resultant 'cloud' may be effective for considerable distances in a downwind direction.
- b. Biological agents lend themselves particularly to attack by sabotage.
- c. A biological agent is any organism that can be used to produce disease or death. For the purposes of war they may be classified in the following types:
 - (1) **Micro-Organisms.** Such as Microbes or Bacteria.
 - (2) **Toxins.** Poisonous substances of an organic origin such as Ricin.
 - (3) **Disease Vectors.** Animals or insects (flies, fleas, rats, birds, etc.) that transfer infective agents from one host to another.
 - (4) **Ests.** Living organisms that interfere with the health of other organisms.
- d. An agent may enter the body by any of three routes - ingestion, injection, and inhalation (most lethal agents enter by inhalation).

2. Self Protective Measures

- a. As with defence against nuclear attack, individual ships and crew can be protected appreciably against biological attack by material measures, protective clothing and good organization (See Annex 4F Paragraph 2). Specific measures for biological contamination are:
 - (1) **In Food.** By cooking.
 - (2) **In Water.** By chlorination or boiling for several minutes.
 - (3) **In Wounds.** By careful attention to cleanliness/disinfection.
 - (4) **In Wounds.** By careful attention to cleanliness/disinfection.
 - (5) **In Exposed Positions.** By washing down (Meteorological conditions can influence dispersal, viability and virulence).
 - (6) **By Personnel.** By the strictest attention to personal hygiene.
- b. Measures to be taken within ships are a matter for national authorities.

Annex I to Chapter 4 – The Threat from Piracy

1. The Threat. Piracy is a world-wide issue which can vary from simple robbery to the hijacking of a ship and the taking of its crew or passengers hostage. Self protective measures are important to enhance the security of the ship and crew.

2. Definition

a. The United Nations defines piracy as:¹

Piracy consists of any of the following acts:

(a) Any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:

(i) On the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

(ii) Against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

(b) Any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft.

(c) Any act inciting or of intentionally facilitating an act described in sub-paragraph (a) or (b).

b. Although primarily written to combat piracy in the Horn of Africa, Masters should adopt 'Best Management Practices' (BMP) which can be adapted to suit other areas of piracy, these are précised below.

(1) Don't be alone.

- Call the NATO Shipping Centre (NSC) or the United Kingdom Maritime Trade Organisation (UKMTO).
- It is recommended to leave AIS turned on, although this should be carefully considered as part of the risk assessment.

(2) Don't be detected.

- Keep track of NAVWARNS and visit relevant websites (NSC, International Maritime Bureau (IMB)).
- Use navigation lights only.

(3) Don't be surprised.

- Increase vigilance – lookouts, Close Circuit TV (CCTV) and radar.

(4) Don't be vulnerable.

¹ United Nations Convention on the Law of the Sea (UNCLOS) 1982 Part VII, Article 101:

- Use visible (deterrent) and physical (preventative) Self Protection Measures. (See Paragraph 4).
- These include: Razor wire, use of water/foam etc.
- Provide additional personal protection to bridge teams.

(5) Don't be boarded.

- Increase to maximum speed.
- Manoeuvre vessel.

(6) Don't be controlled.

- Follow well practiced procedures and drills.
- Use citadels (Only with prior agreement Master/ship Operator and fully prepared and drilled – Noting a Naval/Military response is not guaranteed.
- Deny use of tools, equipment, access routes.

c. This system starts with being aware of the sea areas and ports affected by piracy and armed robbery. The IMB Piracy Reporting Centre (IMB PRC) broadcasts incidents of piracy and armed robbery via its website and the INMARSAT Safety Net System.

d. Always report all incidents of piracy and armed robbery (actual, attempted or suspicious) occurring anywhere in the world to the 24-hour manned IMB PRC. This first step is crucial in the response procedures as well as promulgating the threat to ALL vessels in the ocean regions.

- Briefing crew and conduct drill.
- Prepare an Emergency Communication Plan.
- Define the ship's AIS policy.

e. All ships operating in waters or ports where attacks occur should carry out a security assessment as a preparation for development of measures to prevent attacks of pirates or armed robbers against ships and on how to react should an attack occur. This should be included as a part of the emergency response procedures in the safety management system or a part of the procedures in the ship security plan. The security assessment should take into account the basic parameters of the operation including;

- The risks that may be faced including any information given on characteristics of piracy or armed robbery in the specific area.
- The ship's actual size, freeboard, maximum speed, and the type of cargo.
- The number of crew members available, their proficiency and training.
- The ability to establish secure areas on board ship; and
- The equipment on board, including any surveillance and detection equipment that has been provided.

f. The ship security plan or emergency response procedures should be prepared based on the risk assessment, detailing predetermined responses to address increases and decreases in threat levels. The measures should, *inter alia*, cover:

- The need for enhanced surveillance and the use of lighting, surveillance and detection equipment.

-
- Controlling of access to the ship and the restricted areas on the ships by ships' personnel, passengers, visitors, etc.
 - Prevention of unauthorized intrusion by active and passive devices and measures, such as netting, wire, electric fencing, long-range acoustic devices, as well as the use, when appropriate, of security personnel on vessels transiting high-risk areas, and taking other measures to make it more difficult for pirates to board vessels. The safety of onboard personnel should always be taken into account when installing passive devices on board and awareness information should be provided.
 - Monitoring the security of the ship.
 - Crew responses, if a potential attack is detected or an attack is underway.
 - The radio alarm procedures to be followed; and
 - The reports to be made after an attack or an **attempted** attack.

3. Analysis of Pirate Attacks. Analysis of successful piracy attacks indicates that the following common vulnerabilities are often exploited by the pirates.

- a. Low speed.
- b. Low freeboard.
- c. Inadequate planning and procedures.
- d. A visibly low state of alert and/or lack of evident self-protective measures.
- e. Where a slow response by a ship is evident.

4. Self Protective Measures. Given the analysis above, and the nature and limited time required to develop some threats, a more effective way is to avoid being a victim. In most cases such measures incur little or no extra costs and are not limited to the physical measures employed on-board. A non-exhaustive list of measures that should be considered includes:

- a. Procedures – Best Management Practices.
- b. Company risk assessment/pre-planning.
- c. Monitor piracy, or other relevant and related websites on related threats, e.g. NSC and, international industry websites. (See Paragraph 0202.2 and Annex 2A).
- d. Manoeuvring
 - (1) Increase to maximum speed,
 - (2) Induce a narrow weave.
 - (3) Avoid any loss of speed.
 - (4) Avoid providing a lee.
 - (5) Maximise bow-wash and wake.
 - (6) Observe Collision Regulations.

- (7) Monitor vulnerable areas for attack.
- e. Crew (Vigilance).
 - (1) The best defence is awareness.
 - (2) Early action deters attacks.
 - (3) Training avoids panic.
 - (4) Exercises promote confidence.
 - (5) Help arrives faster with greater notice.
- f. Training (Including and monitoring regular drills and exercises).
- g. Inherent Physical Elements - Type/Ship Design/Size/Speed, etc.
- h. Communications – Reports/Alerts.
- I. Weather.
 - (1) It is more difficult to board a ship from a skiff in bad weather.
 - (2) Seasonal monsoons can give an increased level of protection from piracy.
 - (3) The unpredictability of weather forecasts must be considered.
- 5. Some measures do incur costs such as:
 - a. Physical measures that can be put in place.
 - b. Vessel Protection Detachments and Private Security.
- 6. The following lists some measures that can be employed.
 - (1) Hoses.
 - (2) Barbed/Razor Wire.
 - (3) Bulwark extensions.
 - (4) Netting (Metal – Chicken Wire).
 - (5) Barrels.
 - (6) Smoke.
 - (7) Strobe Lighting.
 - (8) Sandbags.

- (9) Steam.
- (10) Foam (Ox Blood).
- (11) Dye markers (Red).
- (12) Sound devices (Thunder Flashes/Flash Bangs).
- (13) Citadel/Safe zones.
- (14) Electric Wiring.

Annex J to Chapter 4 – The Threat from Terrorism

1. The Threat. Terrorism is a global threat that knows no border, nationality or religion and at sea is an increasing problem for the merchant community in peacetime as much in tension as in conflict. Although the number of attacks against merchant shipping is relatively low when compared with land based terrorism over the past fifty years, it is still a viable threat and masters and ship owners should be vigilant against all possibilities. Terrorism can take many forms; it can be State or Sub-State sponsored, plus individual groups with a political or criminal agenda.

a. Typical threats include:

- (1) Waterborne Improvised Explosive Device (IED).
- (2) Stand-off weapons.
- (3) Hand-delivered IED.
- (4) Combat swimmers.
- (5) Air suicide.
- (6) Vehicle borne.
- (7) IED.
- (8) Trojan ISO containers.
- (9) Sea mines.
- (10) Sea-jacking.

2. Self Protective Measures

a. These threats should be identified with reference to the International Ship and Port Facility Security (ISPS) Code.¹ In essence, this code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case. The purpose of the code is to provide a standardised, consistent framework for evaluating risk, thus the determination of appropriate security levels and corresponding security measures.

b. Owners and masters should carry out a risk analysis assessing the probability of such an attack by ascertaining the operational constraints of the terrorist.

- (1) Access to target – How easy is it to get on board when alongside or approach the ship at sea or at anchor?
- (2) Knowledge of Target – How easy is it to obtain details of the ship and its schedule?

¹ The ISPS Code is an amendment to the Safety of Life at Sea (SOLAS) Convention (1974/1988) on minimum security arrangements for ships, ports and government agencies.

(3) Operational Environment – Is the threat more likely in certain ports, or where the ship is operating?

(4) Insiders – Are all the crew from reputable agencies?

c. Balancing the impact sought.

(1) Telegenic – At sea there will certainly be fewer cameras available to film an attack.

(2) Mass Casualties – Large passenger ships may be a more attractive proposition to terrorists.

(3) Economic – What is the economic effect? A large oil or gas tanker may have more impact.

(4) Psychological – What would the psychological effect be to Governments and population as a whole?

2. Vulnerability Assessment and Risk Management.

a. Six steps to carrying out a Ship Security Assessment.

(1) Look at the potential threats specific to the ship.

(2) Consequence assessment.

(4) Mitigation.

(5) Implementation.

(6) Audit, review and improve.

For example:

		Total Vulnerability Score		
		2	3 - 4	5 - 6
Consequence Score	3	Consider	Mitigate	Mitigate
	2	Document	Consider	Mitigate
	1	Document	Document	Consider

Table 4J-1. Vulnerability and Consequence Matrix.

b. High Impact – Low Probability is more difficult to execute, whereas High Probability – Low Impact is more likely.

c. The Company Security Officer must work closely with the Ship's Security Officer and Master to evaluate these risks and take appropriate action to counter them as detailed in the ISPS Code by compiling a ship's security plan. This could take the form of simple threat avoidance; if a threat is known or suspected, then steps can be taken if at all possible to avoid the area. Frequent security checks should be carried out according to the risk ascertained.

Lexicon

SECTION I – TERMS AND DEFINITIONS

Terms and Definitions from AAP-06 are in Italics
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A

anti-terrorism. All defensive and preventive measures taken to reduce the vulnerability of forces, individuals and property to terrorism. Note: Such measures include protective and deterrent measures aimed at preventing an attack or reducing its effect(s).

area of operations. An area defined by a force joint commander within a joint operations area for the conduct of specific military activities. for land or maritime forces to conduct military activities.

C

communications security material. All documents, devices or equipment (including crypto material) associated with the securing or authenticating of telecommunications.

convoy. A number of merchant ships or naval auxiliaries, or both, usually escorted by warships and/or aircraft, or a single merchant ship or naval auxiliary under surface escort, assembled and organised for the purpose of passage together.

convoy commodore. A naval officer, or master of one of the ships in a convoy, designated to command the convoy, subject to the orders of the officer in tactical command. If no surface escort is present, he takes entire command.

crisis response shipping. All shipping employed in support of allied military operations, including ships taken up from trade, chartered shipping and, when appropriate, national pre-positioned ships.

D

damage control. In naval usage, measures necessary aboard ship to preserve and re-establish water-tight integrity, stability, manoeuvrability and offensive power; to control list and trim; to effect rapid repairs of materiel; to limit the spread of, and provide adequate protection from, fire; to limit the spread of, remove the contamination by, and provide adequate protection from, toxic agents; and to provide for care of wounded personnel.

designated merchant ships. A merchant ship with a special status that may give it priority over other ships for higher level naval cooperation and guidance.

dispersal. In maritime operations, the reduction of the concentration of ships by reberthing within a port area or at working or holding anchorages in the vicinity.

E

emergency movement. *In naval cooperation and guidance for shipping, the execution of diversion, port evacuation, area evacuation and subsequent movements in order to preserve ships and cargoes when attack is imminent.*

emission control. *Selective control of emitted electromagnetic or acoustic energy. The aim may be twofold: a. To minimize the enemy's detection of emissions and exploitation of the information so gained. b. To reduce electromagnetic interference, thereby improving friendly sensor performance.*

escort. A combatant unit(s) assigned to accompany and protect another force or convoy.

H

humanitarian operation. *An operation specifically mounted to alleviate human suffering in an area where the civil actors normally responsible for so doing are unable or unwilling adequately to support the population.*

I

immediately vital cargo. *A cargo already loaded which the consignee country regards as immediately vital for the prosecution of the war or for national survival, notwithstanding the risk to the ship. If the cargo is carried in a ship of another nation, then that nation must agree to the delivery of the cargo. The use of this term is limited to the period of implementation of the shipping movement policy.*

L

lead-through operation. *A maritime operation in which a guide ship leads other ships or submarines in their passage through channels established in a mined area.*

M

merchant ship. *A vessel engaged in mercantile trade except river craft, estuarial craft, or craft which operate solely within harbour limits.*

merchant shipping. *In naval cooperation and guidance for shipping, the complete commercial maritime industry, including the fishing industry.*

N

national shipping authority. *The organisation within each Allied government responsible in time of war for the direction of its own merchant shipping.*

naval cooperation and guidance for shipping. The provision of NATO military cooperation, guidance, advice, assistance and supervision to merchant shipping to enhance the safety of participating merchant ships and to support military operations.

NATO shipping centre. A permanent organisation in the NATO headquarters in Northwood (GBR) tasked with establishing and maintaining links with the military, merchant shipping, national shipping authorities and international maritime agencies.

P

participating merchant ship. *A merchant ship taking part in naval cooperation and guidance for shipping.*

S

sailing information. *A document used by naval cooperation and guidance for shipping to inform merchant vessels of the general situation in the operation area, advised route to follow through the area and any special information regarding communications, emission control, notification of diversion etc. It may be delivered by email, fax or by hand by a Briefing Officer depending on the situation and content.*

security. *The condition achieved when designated information, material, personnel, activities and installations are protected against espionage, sabotage, subversion and terrorism, as well as against loss or unauthorised disclosure.*

standard route. *In naval cooperation and guidance for shipping, a pre-planned single track connecting positions within the main shipping route.*

T

terrorism. *The unlawful use or threatened use of force or violence against individuals or property in an attempt to coerce or intimidate governments or societies to achieve political, religious or ideological objectives.*

SECTION II – ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations from AAP-15 are in Italics.

A

AIS. *automated identification system.*
AOO. *area of operations.*

B

BIO. biological.

C

CBRN *chemical biological radiological and nuclear.*
CEP. civil emergency plans.
CHEM. chemical.
COMSEC. *communication security.*
CRO. *crisis response operation.*
CRS. crisis response shipping.

D

DTG. *date-time group.*
DNE deployed naval cooperation and guidance for shipping element.

E

EMCON. *emission control.*
ETA. *estimated time of arrival.*

G

GMDSS. *global maritime distress and safety system.*

I

IED. *improvised explosive device.*
IMO. *international maritime organisation.*

IMB.	International maritime bureau
ISM Code.	international safety management code.
ISPS Code.	international ship and port facility security code.
IVC.	<i>immediately vital cargo.</i>
L	
LO.	<i>liaison officer.</i>
M	
MCM.	<i>mine countermeasures.</i>
MIO.	<i>maritime interdiction operation.</i>
MPS.	maritime pre-positioning ship.
N	
NAC.	<i>north atlantic council.</i>
NATO.	<i>north atlantic treaty organisation.</i>
NAVWARN.	navigational warning.
NCAGS.	<i>naval cooperation and guidance for shipping.</i>
NCAGS LO.	naval cooperation and guidance for shipping liaison officer.
NSA.	<i>national shipping authority/administration.</i>
NSC.	<i>NATO shipping centre.</i>
NUC.	nuclear.
P	
PCI.	Passage Coordination Information.
PIM.	<i>position and intended movement.</i>
PfP.	<i>partnership for peace.</i>
POF.	potential opposing forces.
S	
SI.	sailing information.

STUFT. *ships taken up from trade.*

T

TGOS. transport group for ocean shipping.