EXPERT INTERIM REPORT OF

Name

OF

MARSAR INTERNATIONAL

DATED

THURSDAY 16th DECEMBER 2021

Specialist Field	:	Maritime Operations, Maritime Search and Rescue and Maritime Emergency Response
Instructed by	:	**Name** Duncan Lewis Solicitors
Subject Matter	:	Search and Rescue Operation in the English Channel on 24.11.21

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1 INTRODUCTION

1.1 Formal Details, Qualifications and Relevant Experience

My name is Name and I am Director and Lead Consultant of MarSAR International.

MarSAR International is a Maritime Search and Rescue and Commercial Shipping Emergency Response Consultancy. We provide consultancy, management and training services to Shipping Companies and Vessel Operators, Maritime Rescue Organisations, Government Organisations and Agencies, Lifeboat Services and Non-Government Organisations globally.

I directly provide expert consultancy services and full maritime SAR operations management to clients whilst actively leading a consultancy team of highly experienced maritime operations, emergency response and search and rescue professionals across a wide-ranging portfolio of projects both in the UK and internationally.

Prior to this, I spent eight years navigating large ocean- going ships worldwide, including cruise ships, cargo ships, specialist offshore vessels and high speed workboats as a Maritime and Coastguard Agency certificated Deck Officer holding 4 currently valid Certificate of Competencies:

- STCW Chief Mate Unlimited Certificate of Competency
- STCW Master 500GT Near Coastal Certificate of Competency
- STCW Master 200GT Code Vessel Certificate of Competency limited to 150nm from a safe haven.
- RYA/MCA Advanced Powerboat Certificate of Competency

I have 12 years of service in both domestic and international maritime search and rescue, including half a decade as a search and rescue vessel Commander both in the UK and abroad in numerous search and rescue contexts. Aside from my command positions, I have held and hold various senior positions across numerous active maritime SAR organisations, including:

- Maritime SAR Trainer/Assessor
- Board Vice Chairman of a UK maritime SAR charity
- Head of SAR Operations for a SAR charity operating in the Aegean Sea
- Operations Superintendent for a SAR organisation providing bespoke SAR vessels and assets to charities

I am highly experienced in training, assessment, audit and assurance of maritime SAR assets, teams and commercial vessels and have implemented policies and procedures for multiple maritime SAR organisations around the world. Apart from my Certificate of Competencies listed above, I hold numerous maritime instructor, assessor and safety qualifications from a number of establishments:

- FdSc Degree in Marine Operations from Southampton Solent University
- IMO Training for Instructors Qualification (IMO Model Course 6.09)
- City & Guilds Level 3 Certificate in Assessing Vocational Achievement
- Institution of Occupational Safety and Health Managing Safely Qualification
- Royal National Lifeboat Institution Search and Rescue Navigation Course
- Senior Officer Shipboard Risk Management
- Royal Yachting Association First Aid Instructor
- Royal Yachting Association VHF SRC Radio Instructor/Assessor
- Royal Yachting Association Radar Instructor
- Royal Yachting Association Powerboat Instructor

The contents of this report and the questions contained were answered within the remit of my instructions as an appointed expert within the field of Maritime Operations, Maritime Search and Rescue and Maritime Emergency Response. Any references to maritime laws or conventions within this report are used because of their applicability to practical maritime scenarios and not due to any specific legal expertise or qualifications. Detailed knowledge of such areas derives from my status as a qualified professional mariner and maritime consultant.

1.2 Instructions

I was instructed by **Name** of Duncan Lewis Solicitors on the 8th December 2021 to write an expert report commenting on the search and rescue operation in the English Channel on 24.11.21. I was instructed to cover the following in my report:

- What are the obligations on the emergency services upon receiving a distress call from a person or group of persons at sea? Please include all obligations arising out of international as well as domestic law;
- Please outline what, in your professional opinion and experience, should have happened in terms of coordinating and carrying out a search and rescue operation in response to the 999 call(s) made at around 2.00am on the night of the 24 November 2021;
- In your professional opinion, and on the basis of the data and information publicly available, was the search and rescue operation in relation to the stricken dingy on 24 November 2021 adequate and appropriate? If not, why not;
- In your professional opinion, is it possible that the actions or omissions of HM Coastguard and Border Force on the night of 24 November 2021 contributed to the loss of life aboard the stricken dingy?
- Please outline what further information you would require to consider, in order to provide a full assessment of the SAR operation and its alleged deficiencies?
- Any other information or comments as you deem appropriate and relevant

I was also informed that my report will be an important aid in determining whether the SAR operation launched and carried out in response to the distress call(s) of 24 November was adequate and appropriate. Should I conclude that it may not have been my report will be relied upon when seeking further disclosure from the Home Secretary and/or HM Coastguard.

1.3 Constructed Timeline for Migrant Vessel

From eye witness accounts and interviews with survivors, I have constructed the below account of the migrant vessel's voyage

- 2100 (23/11/21) – The boat departs France from around the area of Loon-Plage, between Dunkirk and Calais.[i1i2i3i4]
- 0215 (24/11/21) – The boat's engine begins to fail and calls are made to HM Coastguard and the French Coastguard asking for help.[i1i2i3i4]
- 1200 (24/11/21) – Bodies are sighted in the water by a fishing vessel [i1i2i3i4]

[i1] Sky News - Channel deaths: What the marine tracking data tells us about the rescue: https://news.sky.com/story/channel-deaths-what-the-marine-tracking-data-tells-us-about-the-rescue-12483170
[i2] inews - How the Channel migrants' dinghy tragedy unfolded despite Britain and France's frantic search efforts: https://inews.co.uk/news/english-channel-migrants-dinghy-tragedy-border-force-calsi-dover-coastguard-rescue-france-uk-1334976/amp
[i3] BBC News - Survivor: I'm haunted by deadliest Channel crossing: https://www.bbc.co.uk/news/world-europe-59480814
[i4] Rudaw - Exclusive: Migrant survivor says British coastguard ignored call for help: https://www.rudaw.net/english/world/28112021

1.4 Material Used

The below list contains all the material used to prepare this report. Individual references to the documents below are cited through the report where relevant. The links for documents available online can be found in the individual references throughout the report.

- BBC News - Survivor: I'm haunted by deadliest Channel crossing
- Border Force – Our Fleet of Cutters:
- Cabinet Office - Preparation and planning for emergencies: responsibilities of responder agencies and others
- Cabinet Office, Civil Contingencies Act Enhancement Programme, Chapter 2 -Co-operation Revision to Emergency Preparedness,
- Civil Contingencies Act 2004
- inews - How the Channel migrants' dinghy tragedy unfolded despite Britain and France's frantic search efforts
- International Convention on Maritime Search and Rescue 1979, 2006 Edition
- Maritime & Coastguard Agency – About us
- Maritime & Coastguard Agency – Office access and opening times
- Maritime & Coastguard Agency – SOLAS Chapter V safety of Navigation
- RNLI - Dover Lifeboat Station
- Rudaw - Exclusive: Migrant survivor says British coastguard ignored call for help
- Search and Rescue Eighth Report of Session 2004–05, Volume I Report, together with formal minutes
- Sky News - Channel deaths: What the marine tracking data tells us about the rescue
- The International Aeronautical and Maritime Search and Rescue Manual (IAMSAR), Volume 2
- The International Aeronautical and Maritime Search and Rescue Manual (IAMSAR), Volume 3
- Tracking data for aircraft G-RAFL from adsbexchange.com
- Tracking data for HM Coastguard Helicopter 163 (SAR 111232535) from marinetraffic.com
- Tracking data for HMC Valiant from marinetraffic.com
- UKSAR - Strategic Overview of Search and Rescue in the United Kingdom of Great Britain and Northern Ireland, January 2017
- United Nations Convention on the Law of the Sea 1982
- University College London - International Marine Legislation - United Nations Convention on the Law of the Sea, 1982 (UNCLOS)

2 QUESTION 1

2.1 **"What are the obligations on the emergency services upon receiving a distress call from a person or group of persons at sea? Please include all obligations arising out of international as well as domestic law."**

2.2 The United Kingdom is a signatory to various international maritime conventions, notably the Convention on Maritime Search and Rescue (SAR 1979)[1]. The body responsible for ensuring compliance with this convention is the Maritime and Coastguard Agency (MCA) [2]. Their core responsibilities alongside this also include:

- Co-ordinating a 24-hour search and rescue service by HM Coastguard (HMCG) and all search and rescue helicopter operations throughout the United Kingdom[2];
- Acting as lead authority and Category 1 responder for maritime emergencies under the Civil Contingencies Act 2004[2].

2.3 HMCG currently operates 1 Joint Rescue Co-ordination Centre (JRCC) in Fareham (which combines both a Maritime Search and Rescue and an Aeronautical Search and Rescue Co-ordination Centre), 9 Maritime Rescue Co-ordination Centres (MRCC) (Aberdeen, Belfast, Dover, Falmouth, Holyhead, Humber, Milford Haven, Shetland & Stornoway) and 1 Maritime Rescue Sub Centre (MRSC) in London[3].

2.4 For the purposes of this report, I will reference a JRCC, MRCC or MRSC as a 'rescue co-ordination centre' as their individual differences are irrelevant to the contents of this report.

2.5 For the purposes of this report, I will reference any situation at sea were a person or craft requires some form of assistance as an 'emergency'.

2.6 Under SAR 1979 part 4.2.4 Rescue co-ordination centres and rescue sub-centres:

2.7 "Shall immediately upon receipt of information concerning a person, a vessel, or other craft in a state of emergency, evaluate such information and determine the phase of emergency."[4]

2.8 Under SAR 1979, part 1.1; "shall" is defined as follows:

2.9 ""Shall" is used in the annex to indicate a provision, the uniform application of which by all Parties is required in the interest of safety of life at sea."[5]

2.10 This makes it clear that there is a requirement for a rescue co-ordination centre to carry out the specific task of evaluating information received to determine the phase of the emergency. Within SAR 1979, there are 3 distinct phases of any emergency situation that any calls for assistance received by a rescue co-ordination centre would initially fall into after evaluation. These are:

2.11 Uncertainty phase:

- When a person has been reported as missing, or a vessel or other craft is overdue; or[4]
- When a person, a vessel or other craft has failed to make an expected position or safety report.[4]

2.12 Alert phase

- When, following the uncertainty phase, attempts to establish contact with a person, a vessel or other craft have failed and enquiries addressed to other appropriate sources have been unsuccessful; or[4]
- When information has been received indicating that the operating efficiency of a vessel or other craft is impaired, but not to the extent that a distress situation is likely[4].

2.13 Distress phase:

- When positive information is received that a person, a vessel or other craft is in danger and in need of immediate assistance; or[4]

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[1] Search and Rescue Eighth Report of Session 2004–05, Volume I Report, together with formal minutes, p.6, https://publications.parliament.uk/pa/cm200405/cmselect/cmtran/322/322i.pdf

[2]Maritime & Coastguard Agency – About us: https://www.gov.uk/government/organisations/maritime-and-coastguard-agency/about

[3]Maritime & Coastguard Agency – Office access and opening times: https://www.gov.uk/government/organisations/maritime-and-coastguard-agency/about/access-and-opening

[4]International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.13-14

[5]International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.6

- When, following the alert phase, further unsuccessful attempts to establish contact with a person, a vessel or other craft and more widespread unsuccessful enquiries point to the probability that a distress situation exists; or[4]
- When information is received which indicates that the operating efficiency of a vessel or other craft has been impaired to the extent that a distress situation is likely[4].

2.14 Once the initial emergency phase has been decided, there are certain protocols and procedures that must be followed by rescue co-ordination centres. These responses are required to meet the requirements of SAR 1979, which states:

- Upon the declaration of the uncertainty phase, the rescue co- ordination centre or rescue sub-centre, as appropriate, shall initiate enquiries to determine the safety of a person, a vessel or other craft, or shall declare the alert phase[4].
- Upon the declaration of the alert phase, the rescue co-ordination centre or rescue sub-centre, as appropriate, shall extend the enquiries for the missing person, vessel or other craft, alert appropriate search and rescue services and initiate such action as is necessary in the light of the circumstances of the particular case[4].
- Upon the declaration of the distress phase, the rescue co-ordination centre or rescue sub-centre, as appropriate, shall proceed as prescribed in its plans of operation, as required by paragraph 4.1[4].

2.15 Paragraph 4.1 of SAR 1979, in relation the action required if a distress phase is declared specifies:

- Each rescue co-ordination centre and rescue sub-centre shall have available up-to-date information especially concerning search and rescue facilities and available communications relevant to search and rescue operations in its area[6].
- Each rescue co-ordination centre and rescue sub-centre should have ready access to information regarding the position, course, and speed of vessels within its area which may be able to provide assistance to persons, vessels or other craft in distress at sea, and regarding how to contact them. This information should either be kept in the rescue co-ordination centre, or be readily obtainable when necessary[6].
- Each rescue co-ordination centre and rescue sub-centre shall have detailed plans of operation for the conduct of search and rescue operations. Where appropriate, these plans shall be developed jointly with the representatives of those who may assist in providing, or who may benefit from, the search and rescue services[6].
- Rescue co-ordination centres or sub-centres shall be kept informed of the state of preparedness of search and rescue units[6].

2.16 All of the above sets out the clear expectations of SAR 1979 and the legal obligations on rescue co-ordination centres to classify all emergencies at sea into the appropriate emergency phase and to provide a suitable response to the emergency depending on the phase.

2.17 Chapter 3 of SAR 1979 sets out the following requirements for states to ensure co-ordinated search and rescue operations with those of neighboring states. This would require the UK and France to have some form of agreement covering the following requirements:

- Parties shall co-ordinate their search and rescue organisations and should, whenever necessary, co-ordinate search and rescue operations with those of neighbouring States[7].
- Unless otherwise agreed between the States concerned, a Party should authorize, subject to applicable national laws, rules and regulations, immediate entry into or over its territorial sea or territory of rescue units of other Parties solely for the purpose of searching for the position of maritime casualties and rescuing the survivors of such casualties. In such cases, search and rescue operations shall, as far as practicable, be co-ordinated by the appropriate rescue co-ordination centre of the Party which has authorized entry, or such other authority as has been designated by that Party.[7]

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[4] International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.13-14
[6] International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.12
[7]International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.10-12

- Unless otherwise agreed between the States concerned, the authorities of a Party which wishes its rescue units to enter into or over the territorial sea or territory of another Party solely for the purpose of searching for the position of maritime casualties and rescuing the survivors of such casualties, shall transmit a request, giving full details of the projected mission and the need for it, to the rescue co-ordination centre of that other Party, or to such other authority as has been designated by that Party.[7]
- The responsible authorities of Parties shall:
    - Immediately acknowledge the receipt of such a request; and[7]
    - As soon as possible, indicate the conditions, if any, under which the projected mission may be undertaken.[7]
- Parties should enter into agreements with neighbouring States setting forth the conditions for entry of each other's search and rescue units into or over their respective territorial sea or territory. These agreements should also provide for expediting entry of such units with the least possible formalities.[7]
- Each Party should authorise its rescue co-ordination centres:
    - To request from other rescue co-ordination centres such assistance, including vessels, aircraft, personnel or equipment, as may be needed;[7]
    - To grant any necessary permission for the entry of such vessels, aircraft, personnel or equipment into or over its territorial sea or territory; and[7]
    - To make the necessary arrangements with the appropriate customs, immigration, health or other authorities with a view to expediting such entry.[7]
- Each Party shall ensure that its rescue co-ordination centres provide, when requested, assistance to other rescue co-ordination centres, including assistance in the form of vessels, aircraft, personnel or equipment.[7]
- Parties should enter into agreements with other States, where appropriate, to strengthen search and rescue co-operation and co- ordination. Parties shall authorize their responsible authority to make operational plans and arrangements for search and rescue co-operation and co-ordination with responsible authorities of other States.[7]

2.18 The Civil Contingencies Act 2004 and accompanying non-legislative measures deliver a single framework for civil protection in the UK. The Act is separated into 2 substantive parts: local arrangements for civil protection (Part 1); and emergency powers (Part 2).[8]

2.19 For the purpose of this report, we are only concerned with Part 1 of the Civil Contingencies Act 2004. Part 1 of the Act, supporting regulations and statutory guidance establish a clear set of roles and responsibilities for those involved in emergency preparation and response at the local level. The Act divides local responders into 2 categories, imposing a different set of duties on each.[8]

2.20 Those in Category 1 are organisations at the core of the response to most emergencies. Category 1 responders are subject to the full set of civil protection duties[8]. They will be required to:

- assess the risk of emergencies occurring and use this to inform contingency planning;[8]
- put in place emergency plans;[8]
- put in place business continuity management arrangements;[8]
- put in place arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency;[8]
- share information with other local responders to enhance co-ordination;[8]
- co-operate with other local responders to enhance co-ordination and efficiency;[8]
- provide advice and assistance to businesses and voluntary organisations about business continuity management (local authorities only);[8]

[7]International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.10-12
[8] Cabinet Office - Preparation and planning for emergencies: responsibilities of responder agencies and others: https://www.gov.uk/guidance/preparation-and-planning-for-emergencies-responsibilities-of-responder-agencies-and-others

2.21 The Maritime & Coastguard Agency is designated as a Category 1 responder and is responsible for the initiation and co-ordination of civil maritime search and rescue within the UK Search and Rescue Region, and as such is an emergency service[9]. It carries out this function through HM Coastguard[9].

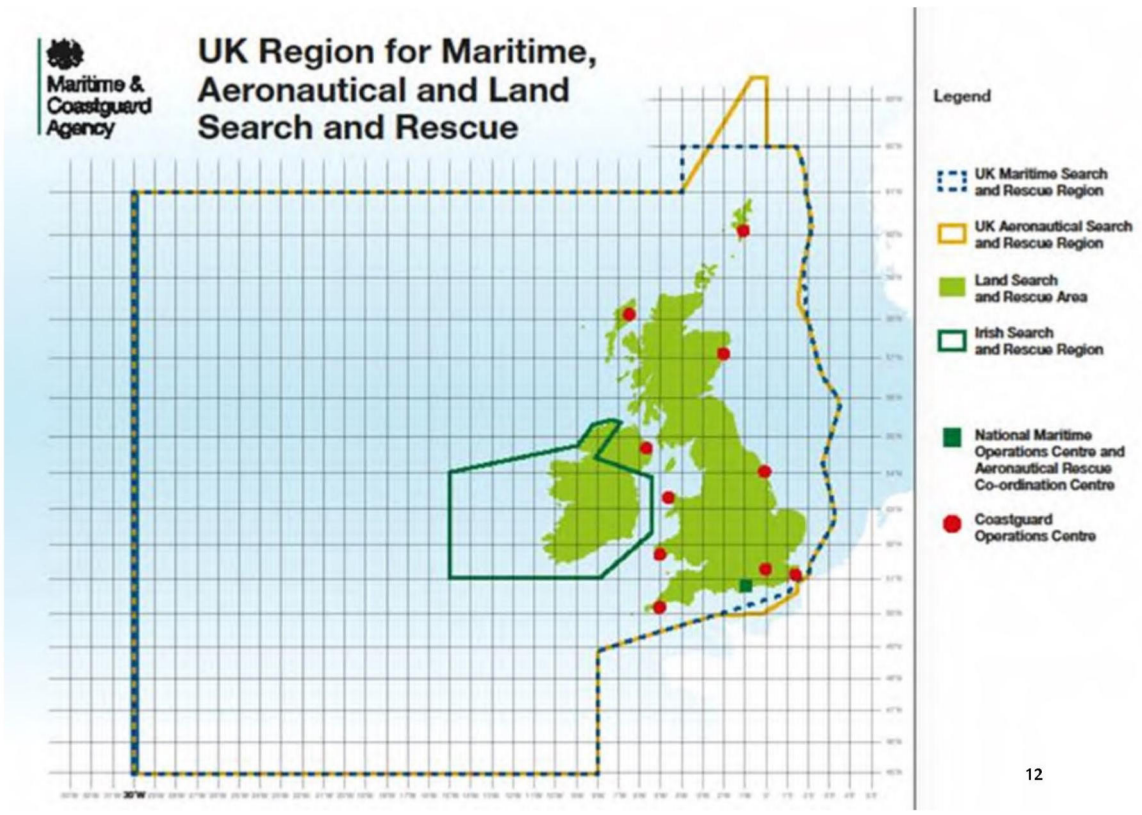
2.22 It is important to note that the Civil Contingencies Act 2004 only applies to within the United Kingdom[10]. Within the Civil Contingencies Act 2004, there are numerous references to the United Kingdom also including the territorial sea of the United Kingdom, with Part 1, section 18(2) 1 stating:

2.23 "In this Part a reference to the United Kingdom includes a reference to the territorial sea of the United Kingdom."[11]

2.24 All of the above sets out the clear expectations of Civil Contingencies Act 2004 and the legal obligations on the Maritime & Coastguard Agency as a Category 1 responder to plan and respond to emergencies within the territorial sea of the United Kingdom, but also the UK Search and Rescue Region.

2.25 The below chart displays the UK Search and Rescue Region where the Maritime & Coastguard Agency is responsible for the initiation and co-ordination of civil maritime search and rescue:

2.26



2.27 The UK is a signatory to The United Nations Convention on the Law of the Sea 1982 (UNCLOS) which entered into force in 1994 and was established to provide an overarching international agreement regulating the various uses of the world's oceans and seas[13].

2.28 Article 98 of UNCLOS titled "Duty to Render Assistance" states the following:

- "Every coastal State shall promote the establishment, operation and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea and, where circumstances so require, by way of mutual regional arrangements co-operate with neighbouring States for this purpose."[14]

2.29 This puts obligation on the UK to not only provide "an adequate and effective search and rescue service", but also to have "mutual regional arrangements co-operate with neighbouring States", which in the English Channel would include France.

[9] Cabinet Office, Civil Contingencies Act Enhancement Programme, Chapter 2 -Co-operation Revision to Emergency Preparedness, p.54
[10] Civil Contingencies Act 2004, Part 1, p.1
[11] Civil Contingencies Act 2004, Part 1, p.25
[12] UKSAR - Strategic Overview of Search and Rescue in the United Kingdom of Great Britain and Northern Ireland, January 2017, p.20: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/593127/mca_uksar.pdf
[13] University College London - International Marine Legislation - United Nations Convention on the Law of the Sea, 1982 (UNCLOS): https://www.ucl.ac.uk/cclp/ccsunclos.php
[14] United Nations Convention on the Law of the Sea 1982, p60

3 QUESTION 2 & 3

3.1 **"Please outline what, in your professional opinion and experience, should have happened in terms of coordinating and carrying out a search and rescue operation in response to the 999 call(s) made at around 2.00am on the night of the 24 November 2021"**

&

3.2 **"In your professional opinion, and on the basis of the data and information publicly available, was the search and rescue operation in relation to the stricken dingy on 24 November 2021 adequate and appropriate? If not, why not"**

3.3 I have grouped these questions together as I will answer them in the following format as I believe the answers to both closely related:

- I will explain what actually happened based on the publically available information;
- Then I will explain whether I think the action taken was sufficient or not;
- Finally, I will explain what I would expect in my professional expert opinion to have happen at each stage of the incident.

3.4 It is important to note that the following (paragraphs 3.3 to 3.41) of the below is based on my professional expert opinion and experience unless otherwise clearly stated or supported with referenced material that is only currently available in the public domain. Aside from publically available information, for the purposes of this interim report I will be unable to quote HMCG specific policy or procedure, but will use the legislation and regulations that would govern the specific HMCG policies or procedures to explain my opinion where relevant.

3.5 Upon receipt of a 999 call to HM Coastguard (HMCG), I would expect the operator to begin a 'New Incident' within the Coastguard incident system and begin to gather information from the first informant. This would also involve the HMCG Officer assessing the information in a timely fashion in order to grade the incident as currently at:

- The uncertainty phase
- The alert phase
- The distress phase

3.6 Without having access to the recordings of the 999 phone calls received by the control room and a copy of the mission log, I would not be able to determine with complete certainty what emergency phase I would have assigned the incident or what phase the HMCG office actually did graded the incident at. It would depend on a number of factors, but a key factor would have been the content of the initial phone 999 phones calls where the nature of the incident involving the vessel would had been discussed.

3.7 According to the timeline given to me in my instructions and reports from the media, between approximately 0215 and 0220[15] on the 24th November 2021 the vessel's engine stopped. I would expect in my professional opinion that this information would have been included in the calls to the Coastguard at 0220 when the people onboard asked for help; however as per paragraph 3.6 I would be unable to comment on the contents of the phone calls at this stage.

3.8 I will assume for the purpose of this report that the Coastguard were made aware of the vessel's engine stopping when the phone call was made asking for help at 0220.

3.9 Based on my own personal experience as a search and rescue vessel commander both in the UK and in migrant SAR contexts abroad, and in my experience as a maritime SAR consultant, it is worth noting at this stage that in my experience migrant vessels do not carry approved navigational lights, marine VHF radios, marine navigation equipment, or safety equipment except for lifejackets. However, it is important to note that in the majority of cases not every person onboard will have a lifejacket. They also do not carry the means of fault finding and repairing a failed outboard engine. Migrant vessels tend to also carry excessive numbers of people, and can be expected to be overcrowded in almost all cases.

[15] inews - How the Channel migrants' dinghy tragedy unfolded despite Britain and France's frantic search efforts: https://inews.co.uk/news/english-channel-migrants-dinghy-tragedy-border-force-calsi-dover-coastguard-rescue-france-uk-1334976/amp

3.10 In my professional expert opinion based on the above, an open, potentially overcrowded inflatable migrant dinghy adrift with no means of propulsion in one of the busiest shipping lanes in the world at night with no navigational lights, navigational equipment or marine communication equipment would be classed as a vessel in distress.

3.11 Paragraph 2.13 explains when an incident should be classed as in the distress phase, and based on the above assessment of the vessel at 0220 sourced from the information provided to me in my letter of instruction, media reports containing witness accounts[15] and from my own professional knowledge and experience, I am satisfied that in my professional opinion the vessel would meet two of the three requirements to be classed as in the distress phase, namely:

- "When positive information is received that a person, a vessel or other craft is in danger and in need of immediate assistance"[16]
    - In my professional opinion this has been satisfied through the circumstances listed in paragraph 3.9.
- When information is received which indicates that the operating efficiency of a vessel or other craft has been impaired to the extent that a distress situation is likely.[16]
    - In my professional opinion this has been satisfied through the circumstances listed in paragraph 3.9.

3.12 Therefore, moving forward through this report based on the information above and my justified professional opinion, I will be assuming that the incident has been graded as a distress phase as I cannot professionally justify grading the incident as anything else other than a distress phase.

3.13 This grading of a distress phase would initiate protocols within HMCG to ensure rapid deployment of SAR assets as appropriate to resolve the incident as quickly and safely as possible. This would be carried out in line with HMCG's distress phase protocols and documentation along with their Operational Management System documentation and Mission Conduct procedures.

3.14 It would have been quite difficult for HMCG to confirm the casualty position accurately with a lack of marine navigational equipment onboard. I have found in my professional experience of working in a migrant SAR context that the use of Google Maps and WhattsApp is quite common, however the position provided should have been treated with caution due to lack of accuracy that would be expected in using a mobile phone for a maritime position in the middle of the English Channel.

3.15 HMCG do have the ability to obtain position information from a mobile phone network provider in the event of an emergency situation. At this moment in time I cannot comment on the expected accuracy and time it would take to obtain this position information from the network providers, and I am unsure at this stage if this was requested as part of this SAR operation or if it would have had an impact.

3.16 It is import to point out that despite the above; the exact distress position in my own professional opinion is not significant with regards to who is responsible to coordinate the rescue operation, and this applies regardless of whether the vessel in distress was on the French side of the sea border or the UK side. I will explain why this is the case below.

3.17 The position of the casualty vessel was believed to have been close to the sea border between the UK and France, which is also where the UK and French Maritime Search and Rescue Regions (SRR) are divided. As neither country could say with complete certainty that the distressed vessel was in their SRR due to the poor position information, Section 4.5.4 of SAR 1979 should have been initiated in my professional opinion.

3.18 Section 4.5.4 of SAR 1979 states:

- In the event of an emergency phase being declared for a search object whose position is unknown, the following shall apply:[16]

[15] inews - How the Channel migrants' dinghy tragedy unfolded despite Britain and France's frantic search efforts: https://inews.co.uk/news/english-channel-migrants-dinghy-tragedy-border-force-calsi-dover-coastguard-rescue-france-uk-1334976/amp
[16] International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.13-15

- When an emergency phase exists, a rescue co-ordination centre or rescue sub-centre shall, unless it is aware that other centres are taking action, assume responsibility for initiating suitable action and confer with other centres with the objective of designating one centre to assume responsibility;[16]
- Unless otherwise decided by agreement between the centres concerned, the centre to be designated shall be the centre responsible for the area in which the search object was, according to its last reported position; and[16]
- After the declaration of the distress phase, the centre co-ordinating the search and rescue operations shall, as appropriate, inform other centres of all the circumstances of the emergency and of all subsequent developments. [16]

3.19 The above requires HM Coastguard would still have responsibility for the initiation of the SAR response until the position can be clarified to give the vessels exact location or there is a formal acknowledgement that another rescue co-ordination centre is taking responsibility for the rescue operation.

3.20 From the assets that were deployed to the English Channel at the times indicated in the timeline below, it appears that HMCG did initiate some form of response to the incident, but it is impossible to completely confirm at this stage whether the response detailed below was in response to the incident I have been instructed to report on. If the action was in fact launched for other SAR incidents, then there is no evidence in the public domain at present that a SAR response was launched by HMCG for this incident. However, based on the timeline provided and the information I have gathered at this stage, I will assume that the response detailed below was intended for the incident I have been instructed to report on.

3.21 For the purpose of this report, through information publically available , the are 3 assets that may have formed part of HM Coastguard's response to this distress situation:

HMC Valiant – a Border Force Cutter

[17]

[17] Image source: https://photos.marinetraffic.com/ais/showphoto.aspx?photoid=702774&size=1600

HM Coastguard AW189 Helicopter Rescue 163 - based at Lydd Airport

18

Reconnaissance Ventures Beach 200 Super King Air – G-RAFL

19

[18] Image source: https://www.flickr.com/photos/mrpuk/19104447423/
[19] Image source: https://cdn.jetphotos.com/full/5/69501_1624297706.jpg

3.22 Below is a timeline that has been constructed based on information from publically accessible tracking systems for vessels and aircraft (Marine Traffic[20]and ADSBexchange[21])

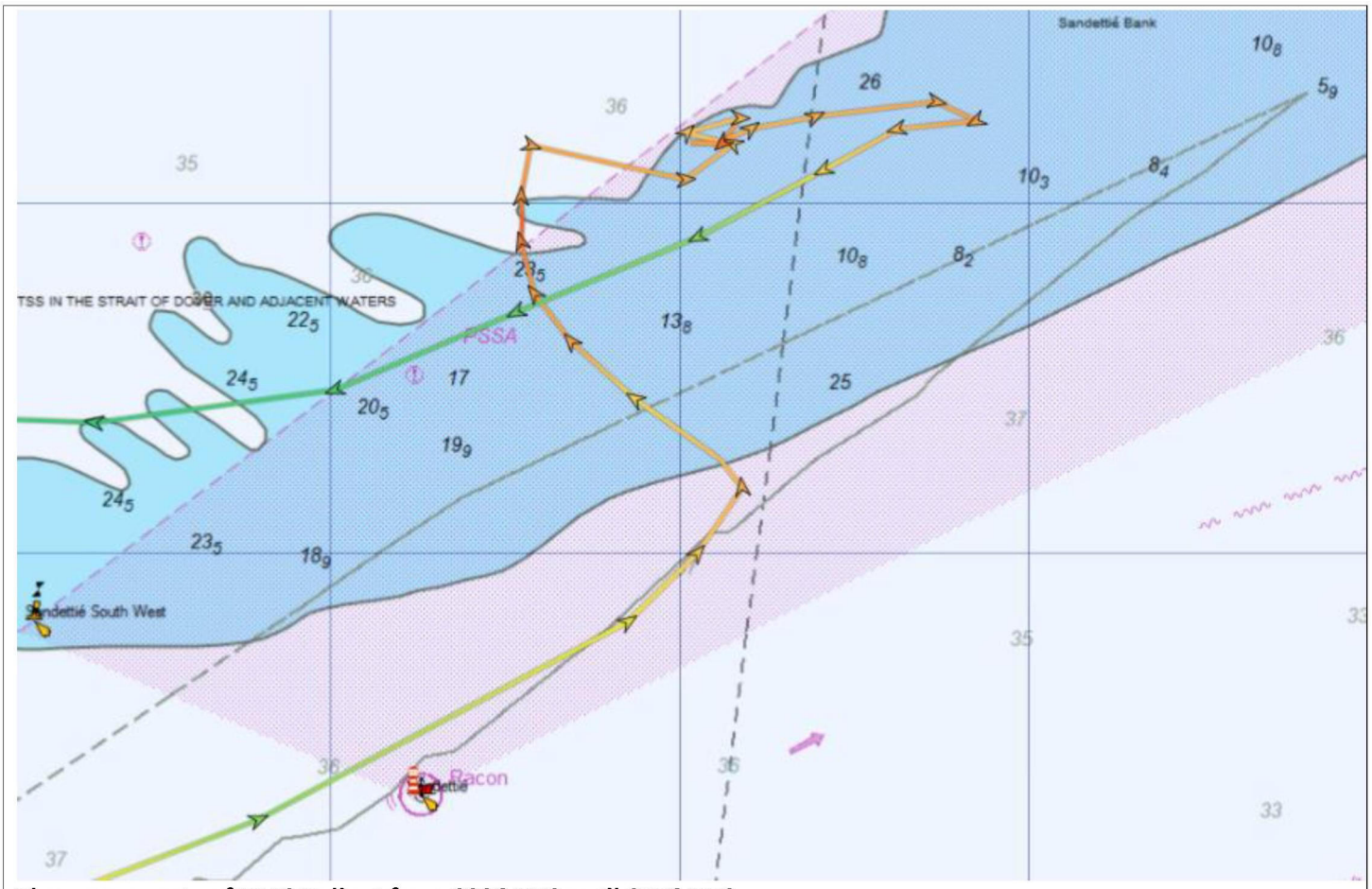
3.23 Timeline of Events from 0147LT on 24th November 2021 until 0810 on 24th November 2021

Source	MarineTraffic	MarineTraffic	ADSBexchange
Time (UTC)	**HMC Valient**	**Rescue Helicopter 163**	**Aircraft G-RAFL**
0147	[redacted]		Aircraft takes off from London Southend Airport
0200			Aircraft arrives above Port of Dover at 19000ft and 225kts and begins long left hand legs over the Dover Strait and to the East

The movements of Aircraft G-RAFL from 0200 UTC until 0425 UTC.
(Image from ADSBexchange)

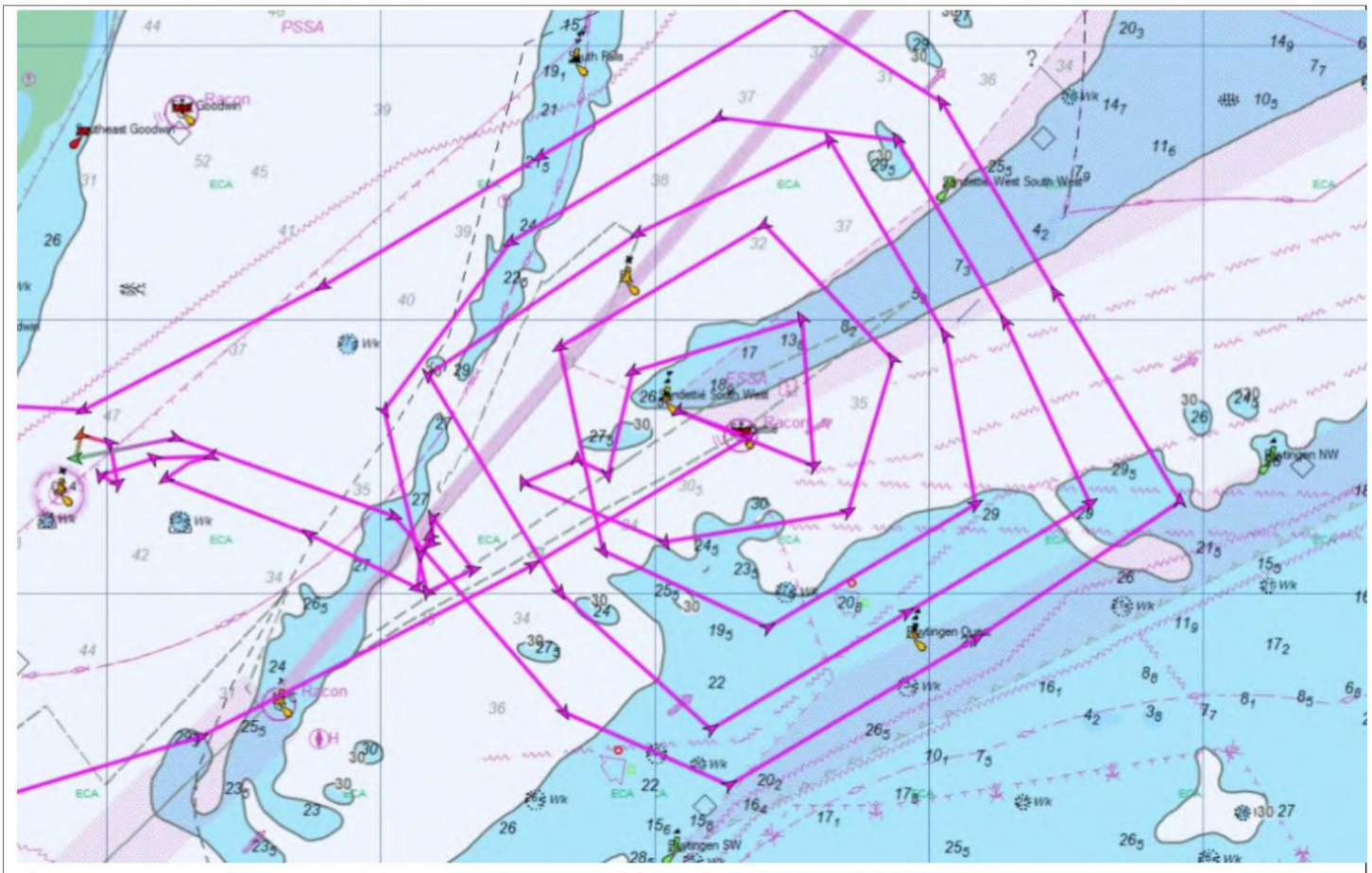
0210	Leaves Berth at Port of Dover	[redacted]	
0220	Vessel proceeding at approximately 15.7kts heading 075° towards SW bound lane of TSS		
0336	Arrives in the vicinity of the Sandetté Bank		

[20] https://www.marinetraffic.com/
[21] https://www.adsbexchange.com/



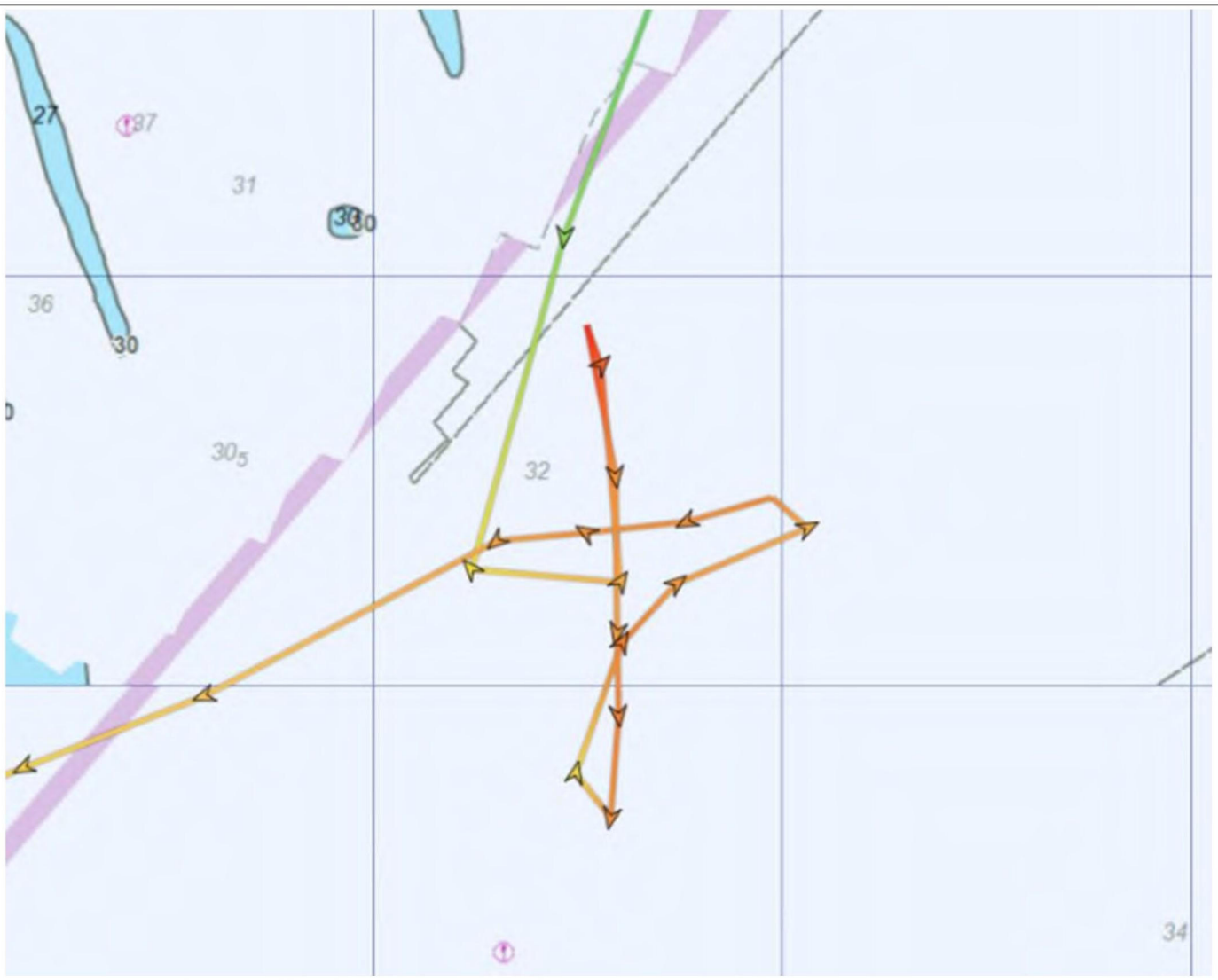
The movements of HMC Valient from 0336 UTC until 0456 UTC.
(Image from MarineTraffic)

Source	MarineTraffic	MarineTraffic	ADSBexchange
Time (UTC)	**HMC Valient**	**Rescue Helicopter 163**	**Aircraft G-RAFL**
0346	[redacted]	Helicopter takes off from Lydd	[redacted]
0349		Helicopter proceeding at 117kts heading 069°	
0404		Helicopter arrives at Sandetté Light Vessel and commences an 'expanding square' search	
0417		Helicopter breaks away from search pattern	
0422		Helicopter returns to search pattern	



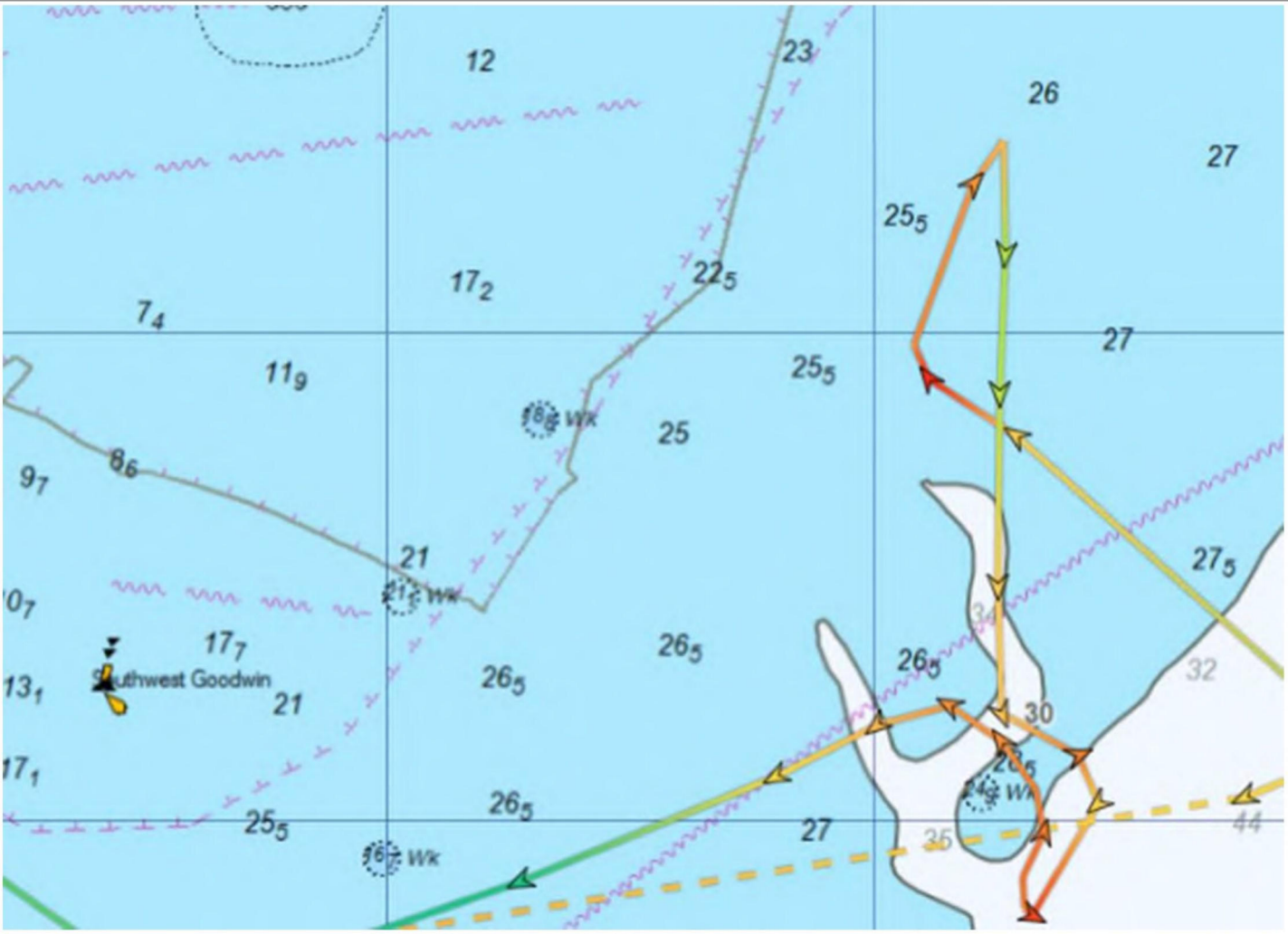
The movements of Coastguard Rescue Helicopter 163 from 0404 UTC until 0606 UTC.
(Image from MarineTraffic)

Source	MarineTraffic	MarineTraffic	ADSBexchange
Time (UTC)	**HMC Valient**	**Rescue Helicopter 163**	**Aircraft G-RAFL**
0425	[redacted]	[redacted]	Aircraft departs Dover Strait
0456	Leaves the vicinity of the Sandetté Bank at approximately 13.6kts heading 276°	[redacted]	[redacted]
0502	[redacted]	[redacted]	Aircraft arrives at East Midlands Airport
0510	[redacted]	Helicopter breaks away from search pattern	[redacted]
0516	Arrives in a position between MPC Special Mark Buoy and Sandetté South West Buoy	[redacted]	[redacted]



The movements of HMC Valient from 0516 UTC until 0602 UTC.
(Image from MarineTraffic)

Source	MarineTraffic	MarineTraffic	ADSBexchange
Time (UTC)	**HMC Valient**	**Rescue Helicopter 163**	**Aircraft G-RAFL**
0547	[redacted]	Helicopter returns to search pattern	[redacted]
0602	Departs the area heading at approx. 6.1kts heading 244°	[redacted]	
0606	[redacted]	Helicopter completes 'expanding square' search	
0611		Helicopter begins return journey to Lydd Airport	
0627		Helicopter lands at Lydd Airport	
0630	Arrives in a position to the east of Southwest Goodwin Buoy	[redacted]	



The movements of HMC Valient from 0630UTC until 0729 UTC.
(Image from MarineTraffic)

Source	MarineTraffic	MarineTraffic	ADSBexchange
Time (UTC)	**HMC Valient**	**Rescue Helicopter 163**	**Aircraft G-RAFL**
0729	Departs the area heading at approximately 14.3kts heading 245° proceeding back to Port of Dover	[redacted]	[redacted]
0810	Arrives at Berth at Port of Dover. NOTE: The vessel did not leave Dover Port again that day according to AIS tracking data (however the vessel's AIS may have been turned off)		

3.24 From the above, in my professional opinion I have serious concerns with the co-ordination and execution of the SAR operation on the morning of the 24th November 2021.

3.25 Initially, from what is publically available, there is no record of any 'distress relay' sent via Digital Selective Calling on VHF radio or a VHF 'mayday relay' radio telephony broadcast from HM Coastguard to shipping in the area. This would be expected as one of the initial actions and is standard practice in the maritime industry when a station (either afloat or ashore) is made aware of a distress situation in which the distressed vessel cannot transmit the distress alert themselves[22].

[22] GMDSS – A User's Handbook, 5th Edition, Denise Brehaut, p.64

3.26 In this case HM Coastguard were made aware of a distress case from a vessel that cannot transmit an alert themselves, therefore thy should have sent a distress relay and mayday relay to shipping in the area to alert them to the situation and evaluate if any vessel in the vicinity of the distress would have been able to assist.

3.27 The below image is captures at 0220 UTC on Wednesday 24th November, and shows a large number of vessels in the vicinity of the Sandettié Bank where I believe at this stage the distress was occurring:

3.28

23

3.29 If a 'distress relay' sent via Digital Selective Calling and a VHF 'mayday relay' radio telephony had been broadcast from HM Coastguard to shipping in the area, in my professional opinion there were some vessels who could have assisted in the search and rescue operation relatively quickly. The practicalities of the assistance would depend on HMCG's policies for coordinating search and rescue in the English Channel; however as a minimum I would have expected them to request passing vessels to keep a good lookout for any vessels in distress and report any sightings to HM Coastguard. At this stage I am under the impression that this did not happen.

3.30 One other potential concern I have is in relation to the communications with the distressed vessel. According to the timeline, 999 calls had been made at approximately 0220. At this stage, it does not appear that the HMCG Watch Officer remained on the phone with the distressed persons until they were rescued. This is highly concerning and in my professional opinion if the call taker was to not stay on the phone with the distressed vessel, for reasons such as to conserve the caller's phone battery, I would expect as a minimum follow up phone calls to be carried out at regular intervals by HMCG to ensure the situation on board has not deteriorated. It would also be prudent to record other people's phone numbers who are on board the distressed vessel and ask them to conserve their battery to ensure HMCG would be able to remain in contact with the vessel whilst search and rescue operations are being organised and executed.

3.31 The above is also a requirement of SAR1979 part 4.5.5 which states:

- "Whenever possible, the rescue co-ordination centre or rescue sub-centre responsible for search and rescue operations shall forward to the person, a vessel or other craft for which an emergency phase has been declared, information on the search and rescue operations it has initiated"[24].

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[23] Image from MarineTraffic showing vessels with AIS fitted/turned on at 0220 on 24th November 2021 in the vicinity of the Sandettié Bank

[24] International Convention on Maritime Search and Rescue 1979, 2006 Edition, p.15

3.32 In my professional opinion, if communications were lost with the distressed vessel and HMCG could not re-establish those lines of communications and confirm the safety of everybody on board the vessel, then the distress situation is not resolved and SAR operations should continue for as long as is deemed appropriate considering the circumstances of the incident and the chances of survivability. It appears that this did not happen.

3.33 The coordination of HMC Valiant by HMCG is also of concern. Looking at the timeline above, it appears that no search instructions were given to HMC Valiant as would be expected in a search and rescue event. Search and rescue is a highly technical operation and involves a large amount of planning to carry out a search effectively. The conduct of planning and coordinating SAR operations from a shore side perspective is described by the International Maritime Organisation publication The International Aeronautical and Maritime Search and Rescue Manual (IAMSAR), Volume 2. The conduct of actually carrying out searches as instructed by a shore side authority at sea by vessels is covered by The International Aeronautical and Maritime Search and Rescue Manual (IAMSAR), Volume 3.

3.34 In order to guarantee a good probability of detection of the distressed vessel when its position is not as accurate as possible, certain types of search patterns are usually used by the searching units. It appears that HMC Valiant did not carry out any recognised search patterns, and from my professional opinion and the tracking information above, it appears she carried out interceptions of other migrant vessels over the course of her time, and did not carry out any effective searching of the area for the distressed vessel in question.

3.35 Appendix 1 contains copies of IAMSAR Volume 3, Chapter 3 relating to search patterns. I would have expected HMC Valiant to conduct some form of approved search pattern unless she already had located the distressed vessel and could say with complete certainty that the vessel she has come across is indeed the distressed craft. As this does not appear to be the case, I have concerns about the level of coordination carried out by HMCG in relation to this incident, as the type of search required to be completed by HMC Valiant would have come from the tasking information provided by HMCG when requesting HMC Valiant to assist with the incident.

3.36 HMCG have 2 categories of assets that can be used for search and rescue, declared SAR facilities and additional facilities. Attached in Appendix 2 is a redacted copy of a freedom of information requested that was carried out to request clarification on the difference between a declared SAR facility and additional facility. The main difference identified is that a declared SAR facility is required to meet a specific standard or set criteria relating to civil maritime SAR. An additional facility is not required to meet a specific standard. As per Appendix 2, in my professional opinion, Border Force vessels fall under the definition "marine craft under the control of various authorities including lighthouse and pilotage authorities, HM Customs and Excise and Police". This means that Border Force vessels are additional facility and not declared SAR facilities, which means they are not required to meet a specific standard or set criteria relating to civil maritime SAR. This means that HMCG did not send any water based declared SAR facilities to the incident, which in my professional opinion is extremely concerning where there is an RNLI All Weather Lifeboat that is a declared facility based at the Port of Dover[25].

3.37 HMC Valiant is described in Border Force's own documents as being capable of over 26kts in speed[26]. She appears to have only proceeded at 16kts from the Port of Dover to the incident location. As in my professional opinion the incident would have been in the distress phase for reasons stated in 3.9 and 3.10, I have concerns as to why HMC Valiant did not make best speed to the incident location as required under SOLAS Chapter V regulation 33[27] and the United Nations Convention on the Law of the Sea 1982 (UNCLOS) article 98[28]. Both of these regulations clearly state the requirements for Masters of vessels to:

- Proceed with all speed to their assistance, if possible informing them or the search and rescue service that the ship is doing so. If the ship receiving the distress alert is unable or, in the special circumstances of the case, considers it unreasonable or unnecessary to proceed to their assistance, the master must enter in the log-book the reason for failing to proceed to the assistance of the persons in distress, taking into account the recommendation of the Organization, to inform the appropriate search and rescue service accordingly.[27]

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[25] RNLI - Dover Lifeboat Station - https://rnli.org/find-my-nearest/lifeboat-stations/dover-lifeboat-station

[26] Border Force – Our Fleet of Cutters: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/200683/Our_fleet_of_cutters.pdf

[27] Maritime & Coastguard Agency – SOLAS Chapter V safety of Navigation, p.26, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/343175/solas_v_on_safety_of_navigation.pdf

[28]United Nations Convention on the Law of the Sea p.60 - https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

- Render assistance to any person found at sea in danger of being lost;[28]
- Proceed with all possible speed to the rescue of persons in distress, if informed of their need of assistance, in so far as such action may reasonably be expected of him.[28]

3.38 In addition to the above, Border Force's own public documents do not mention any reference to their vessels carrying out dedicated SAR work, as their primary role is law enforcement and other associated work[26].

3.39 HM Coastguard Rescue Helicopter 163 is a fully declared SAR facility and appears to have taken off from Lydd Airport at 0346, approximately 1 hour 26 minutes after the initial phone call was made. In my opinion, this shows a significant delay in the tasking a very capable SAR asset to the incident. At this moment in time without more information from HMCG, I cannot decipher a reason for this delay.

3.40 Once on scene, the helicopter appears to have carried out an expanding square search. However, in my professional opinion I have concerns about the way this search was carried out. IAMSAR Volume 3 states that an expanding square search is:

- "Most effective when the location of the search object is known within relatively close limits"[29]

3.41 In my professional opinion, the location of the search object was not known within relatively close limits for the reasons stated in 3.14. Further to this, according to the timeline provided in my instructions, the phone call to HM Coastguard occurred at approximately 0220, with the helicopter not arriving on scene until 0404, nearly 1 hour and 45 minutes after the initial call. This is a significant amount of time for a casualty's position to change due to a variety of factors (such as wind, tide, etc.) and therefore in my professional opinion in order to initiate an expanding square search, I would want to have more recent position information from an accurate source.

3.42 At this stage I am unsure of the involvement of Aircraft G-RAFL; however it is worth noting that she was present over the English Channel throughout the early morning incident and therefore could have been involved in some form. Without further information as to the reasons for their presence in the English Channel and if she was involved in the SAR operation in question, I will be unable to comment further at this stage.

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[25] Border Force – Our Fleet of Cutters: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/200683/Our_fleet_of_cutters.pdf

[28] United Nations Convention on the Law of the Sea p.60 - https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

[29] IAMSAR Volume 3, Chapter 3, Page 23.

4 QUESTION 4

4.1 **"In your professional opinion, is it possible that the actions or omissions of HM Coastguard and Border Force on the night of 24 November 2021 contributed to the loss of life aboard the stricken dingy?"**

4.2 At this stage, it is incredibly difficult to fully establish the facts of the incident. From the publically available information and in my professional analysis of the incident, there are some areas of concern at present that do need more in depth analysis in order to establish if HM Coastguard's or Border Force's actions or omissions contributed to the loss of life aboard the stricken dingy. However, I do feel in my professional opinion that there are enough concerns that warrant more of an investigation into HM Coastguard's and Border Force's involvement in the incident, as I do feel in my professional opinion based on the content of this entire report that their actions or omissions may have contributed in some form to the loss of life in the incident.

5 QUESTION 5

5.1 **"Please outline what further information you would require to consider, in order to provide a full assessment of the SAR operation and its alleged deficiencies?"**

5.2 In order to fully analyses the incident response and whether there were any actions or omissions by HM Coastguard and Border Force on the night of 24 November 2021 contributed to the loss of life aboard the stricken dingy, I would require full access to the below from HM Coastguard:

- Copies of all phone call recordings in & out of the coordinating MRCC control room from 1900LT 23rd November 2021 to 0700LT 25th November.
- Copies of all VHF radio recordings in & out of the coordinating MRCC control room from 1900LT 23rd November 2021 to 0700LT 25th November.
- Copies of any other communications that may have occurred between the Migrant Vessel, French Authorities or Border Force in relation to this incident (Emails, WhattsApp messages, etc.).
- Copies of the incident log for the incident that occurred at approximately 0200 on 24th November.
- Copies of the incident log for the incident that occurred at approximately 1200 on 24th November when the wreckage and deceased casualties were found.
- Copies of the PMLR (Post Mission Learning Report) if one was completed post incident for both incidents above.
- Copies of a Migrant Vessel Mass Casualty Event Emergency Plan or similar document.
- Copies of HMCG Mission Conduct procedures.
- Copies of the agreement for co-operation with the French authorities for SAR events in the English Channel.
- Copies of any agreements with Border Force in relation to SAR or migrant vessel operations in the English Channel.
- Copies of OmS procedures or HM Coastguard policies/SOPs for
    - Mass Casualty Events & Person in the Water;
    - Vessel's with Mechanical Failure;
    - Migrant SAR protocol/procedures (if there is a separate policy/procedure for these types of SAR event).
- Any specific documents or procedures relating to adrift vessels in the English Channel or Dover Strait.
- Details on the numbers of qualified watch officers and SMCs they had on duty that night physically in the coordinating MRCC (not across the network) and if network support was request or being used at any time during both incident s.
- Copy of the agreement with Reconnaissance Ventures detailing what work they will require their aircraft to carry out on behalf of the MCA or any other government bodies.
- Any details on the mission being carried out by aircraft G-RAFL on the morning of the incident.
- Details of the system in place for accessing interpreters to translate emergency calls or radio transmissions the event of emergency calls being received in another language or in poor English.

5.3 From Border Force, I would require copies of:

- Bridge Logs and Communication Logs from HMC Valiant detailing the information of their tasking to the incident.
- Copies of any agreements with Border Force in relation to SAR or migrant vessel operations in the English Channel.
- Copies of any SMS documentation, polices or procedures relating to carrying out search and rescue operations by any of their vessels.
- Copies of any training records for their crew relating to search and rescue navigation and operations.

5.4 Providing the above is supplied, there may be the need to required further documentation form HM Coastguard or Border Force after analysis so the above list may not be the final list of items needed.

6 SUMMARY OF CONCLUSIONS

6.1 It is important to state at this stage that the conclusions reached here may be very different to the conclusions reached in the full report when there has been a full analysis of the information provided by HM Coastguard and Border Force in Question 5.

6.2 In summary, I have reached the following conclusion with regards to my instructions to comment on the search and rescue operation in the English Channel on 24.11.21. The below summary is based on information publically available and my own professional opinion based on experience and interpretation of the information I currently have access to:

6.3 HM Coastguard did not appear to launch an efficient or appropriate SAR response to an incident I deem in my professional expert opinion to be a distress phase case.

6.4 There was no distress alert relay via DSC VHF or a mayday relay message broadcast to alert shipping in the vicinity of the distress to request their assistance or to alert them to keep a good lookout for the distressed vessel.

6.5 No fully declared water based SAR assets were deployed to the incident, instead an additional facility, namely HMC Valiant was dispatched and proceeded at a reduced speed that is equivalent to about 62% of her maximum speed to the incident location, arriving on scene at approximately 1hour and 15 minutes after the initial calls to HM Coastguard from the distressed vessel.

6.6 When HMC Valiant arrived on scene, she did not carry out any formal search as recognised by IAMSAR Volume 2 or 3, which would mean the probability of detention for the distressed vessel would be lower than would be possible with an effective organised search pattern.

6.7 HM Coastguard Helicopter Rescue 163 was not dispatched to the incident in a timely fashion for unknown reasons. When they arrived on scene their search was potentially based on unreliable position information that was nearly 2 hours old. This would reduce the effectiveness of their search efforts and probability of detection in locating the distressed vessel.

6.8 There appears to be no evidence at this stage that communications with the distressed vessel were maintained until the vessel and people on board were located and confirmed as recued. This resulted in no direct confirmation that the people had indeed been rescued which means the distressed vessel and people were left in their distressed situation until the situation deteriorated and the people ended up in the water, resulting in the loss of 27 lives. I cannot comprehend at this stage how the incident was classed as concluded by HM Coastguard without this confirmation, and why the response was not scaled up if there was the inability to communicate with the distressed vessel after the initial calls from them.

6.9 Based on the summary of conclusions and contents of this report, in my professional opinion there is a serious need for a full analysis of the response to the incident in order to establish the facts and if any actions or omissions by HM Coastguard or Border Force contributed to the loss of life aboard the stricken dingy.

7 STATEMENT OF TRUTH

7.1 I, **Name**, confirm the following:

7.2 I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

7.3 I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

7.4 Expert's statement under Rule 35 CPR:

7.5 I confirm that I understand my duty to the court, and that I have complied with that duty.

7.6 I confirm that I am aware of the requirements of Part 35 and Practice Direction 35 of the CPR, and the Guidance for the Instruction of Experts in Civil Claims 2014.

Personal Data

Name

Thursday 16th December 2021

Liverpool, UK

END OF REPORT

APPENDIX 1

Search patterns

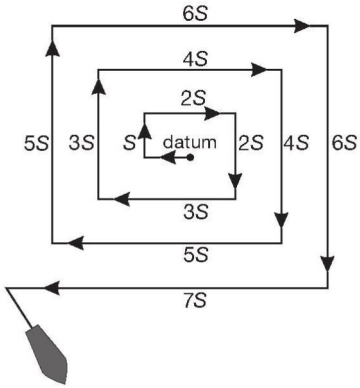
- It may be advisable for vessels, especially when searching for a person in the water with either an expanding square search (SS) or a sector search (VS), to use dead reckoning (DR) navigation rather than more accurate navigational methods. DR navigation will minimize pattern distortion relative to the search object since it will automatically account for the currents affecting the search object's drift during the search. For both vessels and aircraft, if a smoke float or other highly visible, expendable object is available, it should be deployed at datum and the pattern should be performed relative to it. Precise search pattern navigation using high-precision methods such as global satellite navigation systems will produce good patterns relative to the ocean bottom, but not relative to the drifting search object. This could allow the search object to drift out of the search area before the search facility arrives in that vicinity.

Expanding square search (SS)

- Most effective when the location of the search object is known within relatively close limits.
- The commence search point is always the datum position.
- Often appropriate for vessels or small boats to use when searching for persons in the water or other search objects with little or no leeway.
- Due to the small area involved, this procedure must not be used simultaneously by multiple aircraft at similar altitudes or by multiple vessels.
- Accurate navigation is required; the first leg is usually oriented directly into the wind to minimize navigational errors.
- It is difficult for fixed-wing aircraft to fly legs close to datum if *S* is less than 2 NM.

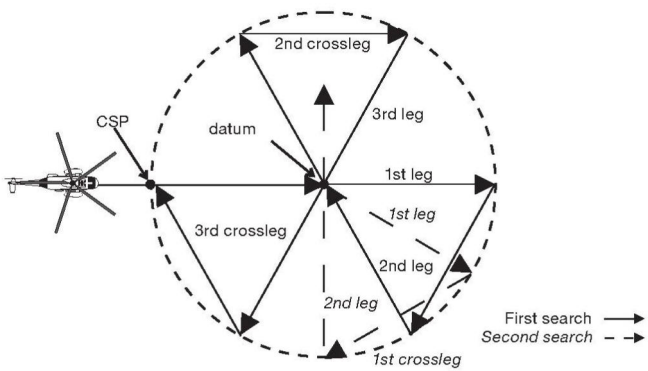
Sector search (VS)

- Most effective when the position of the search object is accurately known and the search area is small.
- Used to search a circular area centred on a datum point.
- Due to the small area involved, this procedure must not be used simultaneously by multiple aircraft at similar altitudes or by multiple vessels.
- An aircraft and a vessel may be used together to perform independent sector searches of the same area.



Expanding square search (SS)

- A suitable marker (for example, a smoke float or a radio beacon) may be dropped at the datum position and used as a reference or navigational aid marking the centre of the pattern.
- For aircraft, the search pattern radius is usually between 5 NM and 20 NM.
- For vessels, the search pattern radius is usually between 2 NM and 5 NM, and each turn is 120°, normally turned to starboard.

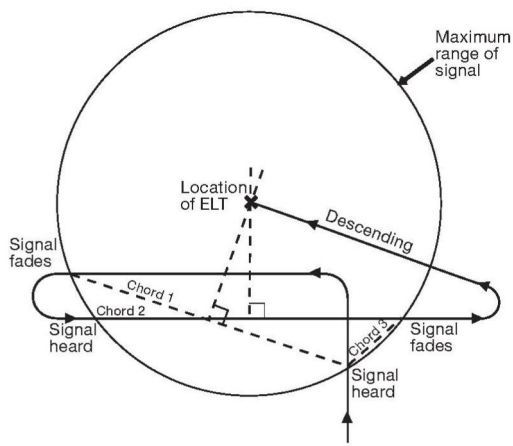


Sector pattern: single-unit (VS)

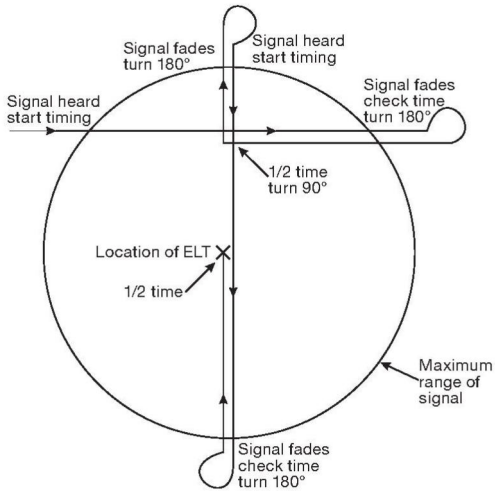
Sector search computations: time to complete one leg (t) in minutes and seconds

	Speed								
Radius	**3 kt**	**5 kt**	**8 kt**	**10 kt**	**15 kt**	**20 kt**	**60 kt**	**80 kt**	**90 kt**
0.5 NM	10:00	6:00	3:45	3:00	2:00	1:30	0:30	0:22.5	0:20
1.0 NM	20:00	12:00	7:30	6:00	4:00	3:00	1:00	0:45	0:40
1.5 NM	30:00	18:00	11:15	9:00	6:00	4:30	1:30	1:07.5	1:00
2.0 NM	40:00	24:00	15:00	12:00	8:00	6:00	2:00	1:30	1:20
2.5 NM	50:00	30:00	18.45	15:00	10:00	7:30	2:30	1:55.5	1:40
3.0 NM	60:00	36:00	22:30	18:00	12:00	9:00	3:00	2:18	2:00
3.5 NM		42:00	26:15	21:00	14:00	10:30	3:30	2:40.5	2:20
4.0 NM		48:00	30:00	24:00	16:00	12:00	4:00	3:03	2:40
4.5 NM		54:00	33:45	27:00	18:00	13:30	4:30	3:25.5	3:00
5.0 NM		60:00	37:30	30:00	20:00	15:00	5:00	3:48	3:20
6.0 NM			45:00	36:00	24:00	18:00	6:00	4:33	4:00
7.0 NM			52:30	42:00	28:00	21:00	7:00	5:18	4:40
8.0 NM			60:00	48:00	32:00	24:00	8:00	6:03	5:20

Note: Interpolation may be used with this table.



Map-assisted aural electronic search



Time-assisted aural electronic search

Uncorrected sweep widths (W_U) for visual land search (km (NM))

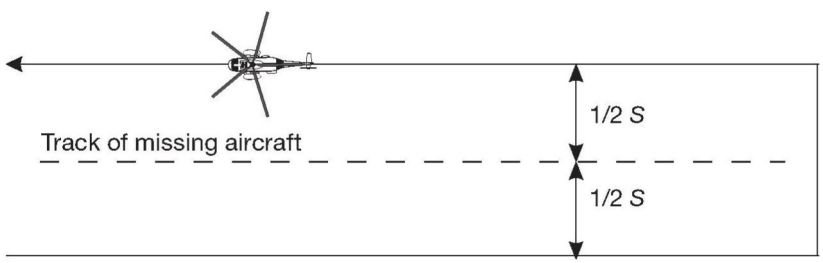
		Visibility (km (NM))				
Search object	**Height (m (ft))**	**6 (3)**	**9 (5)**	**19 (10)**	**28 (15)**	**37 (20)**
Person	150 (500)	0.7 (0.4)	0.7 (0.4)	0.9 (0.5)	0.9 (0.5)	0.9 (0.5)
	300 (1,000)	0.7 (0.4)	0.7 (0.4)	0.9 (0.5)	0.9 (0.5)	0.9 (0.5)
	450 (1,500)	—	—	—	—	—
	600 (2,000)	—	—	—	—	—
Vehicle	150 (500)	1.7 (0.9)	2.4 (1.3)	2.4 (1.3)	2.4 (1.3)	2.4 (1.3)
	300 (1,000)	1.9 (1.0)	2.6 (1.4)	2.6 (1.4)	2.8 (1.5)	2.8 (1.5)
	450 (1,500)	1.9 (1.0)	2.6 (1.4)	3.1 (1.7)	3.1 (1.7)	3.1 (1.7)
	600 (2,000)	1.9 (1.0)	2.8 (1.5)	3.7 (2.0)	3.7 (2.0)	3.7 (2.0)
Aircraft less than 5,700 kg	150 (500)	1.9 (1.0)	2.6 (1.4)	2.6 (1.4)	2.6 (1.4)	2.6 (1.4)
	300 (1,000)	1.9 (1.0)	2.8 (1.5)	2.8 (1.5)	3.0 (1.6)	3.0 (1.6)
	450 (1,500)	1.9 (1.0)	2.8 (1.5)	3.3 (1.8)	3.3 (1.8)	3.3 (1.8)
	600 (2,000)	1.9 (1.0)	3.0 (1.6)	3.7 (2.0)	3.7 (2.0)	3.7 (2.0)
Aircraft over 5,700 kg	150 (500)	2.2 (1.2)	3.7 (2.0)	4.1 (2.2)	4.1 (2.2)	4.1 (2.2)
	300 (1,000)	3.3 (1.8)	5.0 (2.7)	5.6 (3.0)	5.6 (3.0)	5.6 (3.0)
	450 (1,500)	3.7 (2.0)	5.2 (2.8)	5.9 (3.2)	5.9 (3.2)	5.9 (3.2)
	600 (2,000)	4.1 (2.2)	5.2 (2.9)	6.5 (3.5)	6.5 (3.5)	6.5 (3.5)

Correction factors – vegetation and high terrain

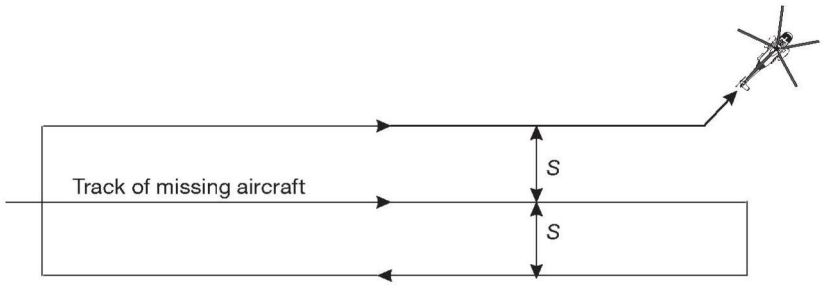
Search object	15–60% vegetation or hilly	60–85% vegetation or mountainous	Over 85% vegetation
Person	0.5	0.3	0.1
Vehicle	0.7	0.4	0.1
Aircraft less than 5,700 kg	0.7	0.4	0.1
Aircraft over 5,700 kg	0.8	0.4	0.1

Track line search (TS)

- Normally used when an aircraft or vessel has disappeared without a trace along a known route.
- Often used as initial search effort due to ease of planning and implementation.
- Consists of a rapid and reasonably thorough search along intended route of the distressed craft.
- Search may be along one side of the track line and return in the opposite direction on the other side (TSR).
- Search may be along the intended track and once on each side, then search facility continues on its way and does not return (TSN).
- Aircraft are frequently used for TS due to their high speed.



Track line search, return (TSR)

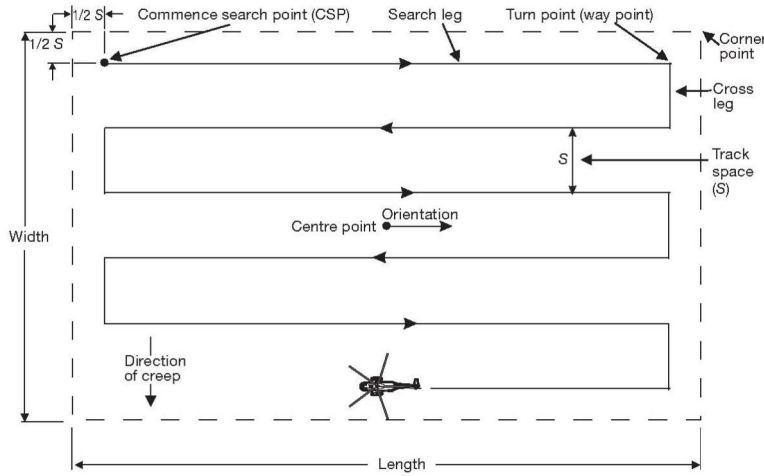


Track line search, non-return (TSN)

- Aircraft search height usually 300 m to 600 m (1,000 ft to 3,000 ft) during daylight or 600 m to 900 m (2,000 ft to 3,000 ft) at night.

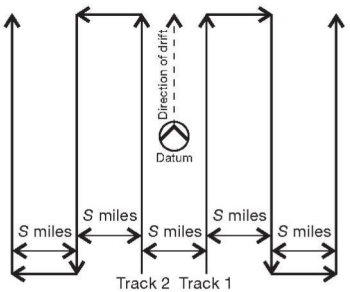
Parallel track search (PS)

- Used to search a large area when survivor location is uncertain.
- Most effective over water or flat terrain.
- Usually used when a large search area must be divided into sub-areas for assignment to individual search facilities on-scene at the same time.
- The commence search point is in one corner of the sub-area, one-half track space inside the rectangle from each of the two sides forming the corner.
- Search legs are parallel to each other and to the long sides of the sub-area.

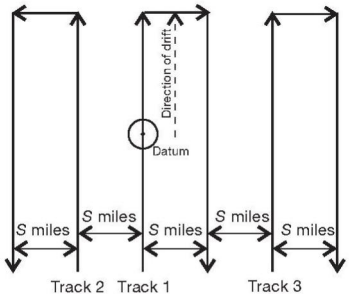


Parallel track search (PS)

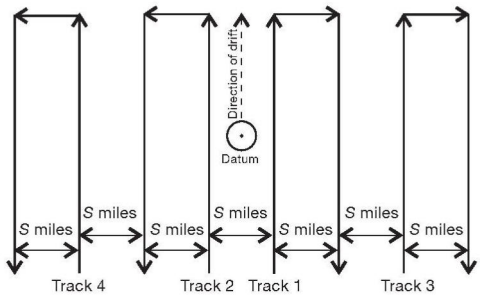
- Multiple vessels may be used as shown on page 3-30:
  - ☐ Parallel track search: for use by two ships.
  - ☐ Parallel track search: for use by three ships.
  - ☐ Parallel track search: for use by four ships.
  - ☐ Parallel track search: for use by five or more ships.



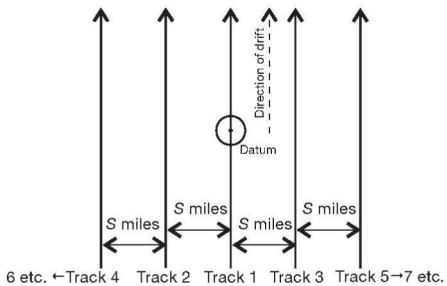
PATTERN 2
Parallel track search – 2 ships



PATTERN 3
Parallel track search – 3 ships



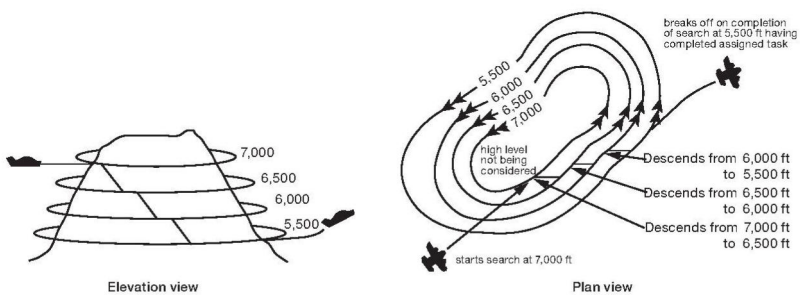
PATTERN 4
Parallel track search – 4 ships



PATTERN 5
Parallel track search – 5 or more ships

Contour search (OS)

- Used around mountains and in valleys when sharp changes in elevation make other patterns not practical.
- Search is started from highest peak and goes from top to bottom with new search altitude for each circuit.
- Search altitude intervals may be 150 m to 300 m (500 ft to 1,000 ft).
- The aircraft may make a descending orbit away from the mountain before resuming the contour search at the lower altitude.
- The aircraft may spiral downwards around the mountain at a low but approximately constant rate of descent when there is not enough room to make a circuit opposite to the direction of search.
- If the mountain cannot be circled, successive sweeps at the same altitude intervals as listed above should be flown along its side.
- Valleys are searched in circles, moving the centre of the circuit one track spacing after each completed circuit.



Contour search (OS)

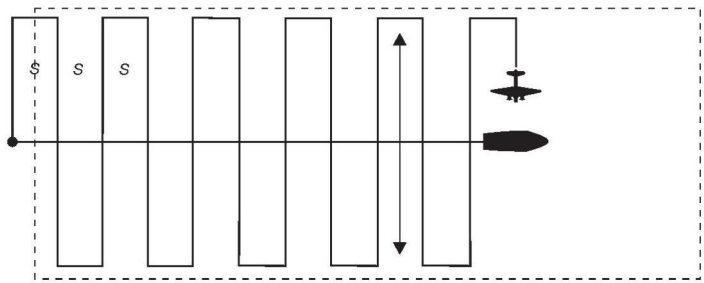
Coordinated vessel–aircraft search pattern

- Normally used only if there is an OSC present to give direction to and provide communications with the participating craft.
- Creeping line search, coordinated (CSC) is often used.
- The aircraft does most of the searching, while the ship steams along a course at a speed as directed by the OSC so that the aircraft can use it as a navigational checkpoint.

- The aircraft, as it passes over the ship, can easily make corrections to stay on the track of its search pattern.
- Gives a higher probability of detection than can normally be attained by an aircraft searching alone.
- Ship speed varies according to the speed of the aircraft and the size of the pattern. The relationship among the speed of the surface facility, the aircraft's speed, the track spacing and the length of the search legs is defined by the following equation:

$$V_s = (S \times V_a)/(L + S)$$

where V_s is the speed of the surface facility in knots, S is the track spacing in nautical miles, V_a is the aircraft's true air speed (TAS) in knots, and L is the length of the aircraft's search leg in nautical miles.



Creeping line search, coordinated (CSC)

Initiation of search

- When a search facility arrives on-scene in advance of the others, it should proceed directly to datum and commence an expanding square search.
- If possible, datum may be marked by putting over a liferaft or other floating marker with a leeway similar to that of the search object, as a check on the drift.
- This can then be used as a datum marker throughout the search.
- As other facilities arrive, the OSC should select one of the search patterns, as appropriate, and allocate search sub-areas to individual facilities.
- In good visibility and with sufficient search facilities, the OSC may let the first facility continue its expanding square search while the others conduct a parallel track search through the same area.

APPENDIX 2

Maritime & Coastguard Agency

[redacted]

[redacted]

Freedom of Information Act Request [redacted]

Dear [redacted]

Thank you for your email of 05/11/2021, in which ou have made a re uest for clarification of definitions based on the terminology found in the [redacted]

[redacted]

In answer to your specific questions, please see below.

1. What is the MCAs/HMCGs definition of a declared SAR asset?

   Declared SAR Facility Status

   Declared Facilities are facilities that have been designated as being available for civil maritime SAR according to a specific standard or set criteria. Each authority declaring facilities is responsible for:

   - Declaring the standard of capability and availability for each facility;
   - Maintaining each facility to the declared standard;
   - Informing HM Coastguard when there is any change in the declared standard of each facility;
   - Informing HM Coastguard of any reason for not making available any facility which has been requested by HM Coastguard.

   Declared SAR Facilities include:

   - Royal National Lifeboat Institution (RNLI) all weather and inshore lifeboats, hovercraft and Beach Rescue Units;
   - Civil helicopters and fixed wing aircraft under contract to HM Coastguard;
   - MCA Emergency Towing Vessels (ETVs);
   - Coastguard Rescue Teams and equipment;
   - Volunteer Life Brigades;
   - Nominated Volunteer Inshore Rescue Services - vessels and hovercraft;
   - Air Traffic Control Centres for civil aircraft control and 'in flight' information;

- Shipping information from Lloyd's Intelligence Department;
- Nominated Beach Lifeguard Units provided by Local Authorities and trained to Royal Life Saving Society UK (RLSS UK) and Surf Live Saving Association GB (SLSA GB) standards;
- Nominated stations operated by the National Coastwatch Institution (NCI) and the Sea Safety Group Coastal Surveillance Section;

Additional Facilities

Additional Facilities are facilities which may be available from time to time but not to a specified standard. They include;

- Vessels in the vicinity of the casualty;
- Such non-declared aircraft and ships as MOD may be able to make available;
- marine craft under the control of various authorities including lighthouse and pilotage authorities, HM Customs and Excise and Police;
- MCA Boats;
- Facilities, including helicopters, made available by offshore oil operators;
- Facilities from foreign SRRs;
- Such facilities as local authorities, are able to make available;
- Police (road, marine and air assets)
- Ambulance Services (surface and air assets - including offshore paramedic response teams);
- Fire Service (non declared assets);
- Other organisations not nominated as declared, operated by the National Coastwatch Institution, Sea Safety Group Coastal Surveillance Section, Local Authority Lifeguard Units and Inshore Rescue Services;
- MOD Range Safety Craft;
- Diving Clubs;
- Surf Lifesaving Clubs;
- Mountain Rescue Teams;
- Cave Rescue Teams;
- RAYNET;
- Sky Watch Auxiliary Air Service.
- Nominated Fire Service Cliff/Mud Rescue and Maritime Incident Response Groups (MIRG);

This concludes our response to your request. If you are unhappy with the handling of your request, you may contact us within two calendar months to request an internal review by an officer who was not involved in the original response. Please write to the FOIA Unit at:

Maritime & Coastguard Agency,
Bay 3/08, Spring Place,
105, Commercial Rd,
SOUTHAMPTON,

Hampshire,
SO15 1EG.

For the duration of the COVID-19 lockdown, please use E-mail: InformationAssurance@mcga.gov.uk. Please remember to explain the reasons for your dissatisfaction and quote the reference number above in any future communications.

In the event that you are not satisfied with the decision resulting from our internal review you can apply to the Information Commissioner for a decision notice. The Information Commissioner's offices are currently closed due to the COVID-19 situation, and the following link contains information on how you should proceed: Link to ICO information.

Please quote the reference number above in any future communications.

[redacted]