HM Coastguard

HM Coastguard Capability Document

25th July 2023

Contents

Revision Date	Summary of Changes
March 2022	Version 1
March 2023	Version 2 – New format, SAR 2G contracts
June 2023	Version 3 – Communications section & Coastguard Search Advisor Course
July 2023	Versions 4,5,6,7,8 – updates to terminology and addition of communications capability, corrections to spelling and paragraph structure.

Executive Summary

HM Coastguard has the primacy for the initiation and coordination of civil maritime search and rescue within the United Kingdom (UK) Search and Rescue (SAR) region as directed by Parliament under the Coastguard Act 1925.

HM Coastguard operates from a Joint Rescue Coordination Centre (JRCC) at Fareham which is supported by nine Maritime Rescue Coordination Centers (MRCC) around the UK - Shetland, Aberdeen, Humber, Dover, Falmouth, Milford Haven, Holyhead, Belfast and Stornoway; and a Maritime Rescue Sub-Centre in London.

HM Coastguard has 298 Coastguard Rescue Teams located throughout the United Kingdom that are available 24 hours a day, 365 days per year.

HM Coastguard provides a capability and supporting role to other responders under the Civil Contingencies Act for inland Search and Rescue.

HM Coastguard has the operational primacy for all Search and Rescue helicopters within the United Kingdom which are coordinated and deployed from Aeronautical Rescue located within the JRCC.

1. Introduction

Within the UK Government, the Department for Transport (DfT) has overall responsibility for the establishment, operation and maintenance of an adequate and effective civil maritime and civil aeronautical search and rescue (SAR) service. For civil maritime SAR, the Coastguard Act 1925 has placed a statutory duty upon His Majesty's (HM) Coastguard to carry out those duties and any other duties as determined by the Secretary of State for Transport.

Along with this HM Coastguard is responsible for the delivery of six internationally identified functions:

- SAR
- Maritime Safety
- Maritime Security
- Counter Pollution
- Vessel Traffic Monitoring (VTM)
- Accident and Disaster Response

1.1 Aim

In order to promote greater understanding of the needs of Civil Continencies Liaison and HM Coastguard's Civil Resilience role and capabilities, a capability document has been developed to link capability to civil resilience needs and risks as appropriate. HM Coastguard capability document aims to outline what we can deliver and how we can support other responding agencies during incidents. The document also aims to enhance the profile of the agency both internally and within other emergency services.

HM Coastguard has the capability to respond to the following incidents:

- Pollution
- Adverse weather
- Displaced persons- mass evacuation and migrants
- Maritime mass rescue operations
- Major transport accidents
- Control of Major Accident Hazards (COMAH)
- Terrorism and maritime security
- Critical National Infrastructure (CNI) disruption
- Infectious disease outbreak or pandemic

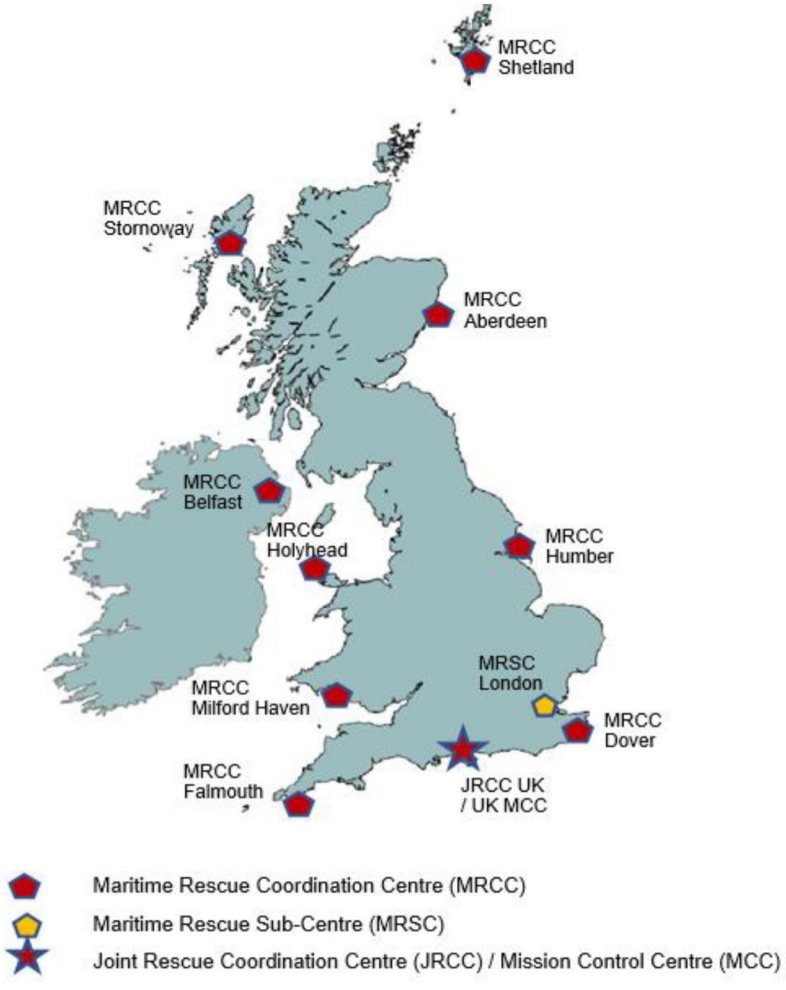
2. National Overview

HM Coastguard is a directorate within the wider Maritime and Coastguard Agency (MCA). As the emergency service within the MCA, HM Coastguard enact the response of the organisation to any civil maritime emergency. While the wider MCA hold functions such as Ship Registers, Seafarer Training and Certification along with other flag state functions.

HM Coastguard is a national organisation and therefore has created a national network to ensure the whole UK Search and Rescue Region (UKSRR) and coastline are appropriately supported.

HM Coastguard operates on a fully integrated National Network centered at the Joint Rescue Coordination Centre (JRCC) in Fareham supported by 9 Maritime Rescue Coordination Centres (MRCC) and a Maritime Rescue Sub-Centre (MRSC).

The JRCC differs from MRCC in that it is the base from which the Strategic Lead for all maritime functions are discharged, principally search and rescue coordination, counter pollution and vessel traffic monitoring. The JRCC also accommodates Aeronautical Rescue (JRCC AR) which is responsible for tasking all HM Coastguard dedicated search and rescue aeronautical assets, and the Mission Control Centre (MCC).



HM Coastguard works very closely with the RNLI who provide capable resources for saving lives at sea. The RNLI is a declared asset to HM Coastguard who task and coordinate RNLI assets for maritime search and rescue.

Our coastal workforce are organised into six Divisions which are further divided into Areas for administrative purposes.

In charge of each Area is a Coastal Operations Area Commander (COAC) who is supported by a team of Senior Coastal Operations Officers (SCOO). The number of supporting SCOOs varies depending on the size of the areas.

Figure 2: Coastal Division and Areas

3. Maritime Operations

The maritime branch supports the delivery of the 6 Coastguard functions: SAR, Maritime Safety, Maritime Security, Vessel Traffic Management, Pollution Response and Accident and Disaster Response.

The maritime branch is operated by a national network of Coastguard Stations operating 24 hours a day, based at Shetland, Aberdeen, Humber, London, Dover, Falmouth, Milford Haven, Holyhead, Belfast, Stornoway and the JRCC in Fareham, which includes the MCC for satellite beacon alerts.

The network is coordinated through the Coastguard's radio network compromised of 360 VHF and MF radios at 164 Remote Radio Sites spread around the UK coastline. Every MRCC and the JRCC can monitor and coordinate the various radios, the radios coverage includes the UK's coastline and the UKSRR.

The radio network facilitates our primary communication to maritime traffic enabling us to fulfill our responsibility to coordinate any Search and Rescue activities within the UKSRR, this responsibility extends up to the high-water mark.

The national network allows workload management so when one MRCC gets busy dealing with a specific Major Incident or maritime emergency, the national network can be flexed so that the other rescue coordination centres can take on some of their duties.

In addition, we have a team of staff officers who support the operational staff by leading on matters such as ICT Infrastructure, communications, VTM, Offshore Oil and Renewable Energy, International Liaison, Civil Resilience, and Maritime Security.

Within the JRCC sits our Network commander (TACOM). The TACOM is required to undertake the role of Tactical Commander during national search and rescue, major maritime-related incidents, and when delegated or necessary. Therefore, in Tactical Coordination Group (TCG) and other tactical level multiagency response groups, often HM Coastguards involvement will be virtual however, the TACOM also liaises with Coastal officers and can be represented by them at meetings.

HM Coastguard strategic commanders come from a small cadre of staff, who can be located at various locations within the UK. Similar to the TACOM, they will join strategic meetings remotely unless situated near the incident location.

The RNLI provide a at sea rescue capability tasked by HM Coastguard rescue coordination centres. Capabilities include two types of lifeboat – all-weather and inshore – serving different locations and the lifeguard service trained to supervise and rescue people on beaches around the UK.

4. Coastal Operations

Coastal Operations and Resources is responsible for the support, equipping, training, administration and leadership of the Coastguard Rescue Service (CRS), a declared facility consisting of circa 3500 volunteers who are available 24/7 for SAR purposes operating within the littoral area of the coast and certain designated inland waterways.

To facilitate the shoreline and inland response, HM Coastguard has 298Coastguard Rescue Teams (CRT) located throughout the UK that are available 24 hours a day, 365 days per year. These Teams are comprised of up to 12 Coastguard Rescue Officers (CROs), who are voluntary members of the CRS. The CRTs capabilities include Water Rescue, Rope Rescue, Mud Rescue, Communications, Logistics, Casualty Care, Casualty Evacuation, Lost and Missing Persons Search and Helicopter Landing Support.

Some key equipment held by CRTs include 4x4 Vehicles, Argo cats, defibrillators, generators, scene lighting, tannoy equipped vehicles, VHF base unit and mast VHF radios (handheld)

HM Coastguard will assist other emergency responders inland where practicable, following a request for mutual aid under the Civil Contingencies Act (2004) arrangements within England and the devolved administrations.

4.1 Water Safety & Rescue

HM Coastguard is often required to provide a SAR response not only in the littoral area, including coastal, riverine and estuarial waters, but also during flood events both in its own area of operation and in support of other emergency responders.

Coastguard Officers are all trained in Water Safety & Rescue (WSAR) techniques as part of their core skill set. All CROs are trained in WSAR, and all CRTs are appropriately equipped. All CRTs can be tasked to flooding events as part of their normal response.

CRTs are registered on the DEFRA National Flood Rescue Assets Register and have Mod 2 and 3 available. Although trained to a higher level for coastal water rescue, CRTs must meet the Mod 2 capabilities below:

Mod 2

- Support operations
- Limited in-water operations
- Bank-based safety and search
- Flood response

Within each coastal area, selected individuals are trained to a higher level. These individuals are based within CRTs across the area and can be called upon to form a composite team, when required, to support a local response.

When benchmarked against the national DEFRA flood standards. The selected individuals will meet these Mod 3 capabilities:

Mod 3

- Technical water rescue
- Search operations within the water environment
- In-water operations
- Non-powered boat operations
- Flood response
- Operational Considerations

The role of the CRS at a flooding event may include:

Search	CRTs are well equipped for, and trained in, land search operations, especially those on, in or near water
Water Rescue	CRTs can provide water rescue within the defined protocols
Communications	HM Coastguard's reliable and robust communications network can be used to assist other services, especially coordinating inland maritime rescue assets
Helicopter Landing Sites	CRTs are equipped and trained to set up and staff landing sites in support of rescue operations
First Aid and Evacuation	Teams can be used to treat and evacuate those being brought out of areas of flooding or to evacuate the vulnerable from the threat of flooding
Logistics	CRTs can provide personnel, 4x4 transport, lighting and communications
Rope Rescue	CRTs can provide rope rescue within the defined protocols
Mud Rescue	CRTs can provide mud rescue within the defined protocols

Additional rescue equipment is pre-deployed around the UK in preparation for major civil contingency events that may require support. This additional equipment includes vehicles, flood rafts, dry suits, personal flotation device (PFD), personal protective equipment (PPE), ancillary water rescue items and communications equipment.

As a Category 1 responder the MCA designates its emergency response duties to HM Coastguard who in turn may offer, or request, to deploy its Mod 2 and 3 flood rescue teams to respond to and support a major incident as part of a regional or national response.

4.2 Rope Rescue

In many coastal areas of the UK, where the risk exists, CRTs are trained and equipped in rope rescue techniques. Rope Rescue is not confined purely to cliff rescue but can also be utilized in other ‘at height’ environments including vessels, coastal structures, sea defenses, sea walls, rock armor, bridges and docks.

4.3 Mud Rescue

A significant part of the UK coastline can be categorized as soft ground. This is mainly mud or quicksand. Where these areas of soft ground are located within the HM Coastguard littoral area, CRTs are equipped and trained to undertake Mud rescue operations.

4.4 Land Search

CRTs are trained and equipped to carry out missing person searches, and current training will shortly bring all teams up to a common standard with the Police Search Governance Board. Lost and Missing Person Search (L&MPS) Learning Outcomes. Primacy for a missing person remains with the police, but HM Coastguard are fully capable of carrying out independent searches in compliance with its duties under the Coastguard Act 1925.

HM Coastguard in collaboration with the College of Policing have developed and commenced Coastguard search advisor qualification and licensing. A Coastguard Search Advisor (CGSA) is authorised and accountable for the leading, planning & management of the search plan, briefing of Search Team Leaders and liaison with PolSA (police Search Adviser), Search Mission Coordinator (SMC)/Mission Coordinator (MC) and other responsible representatives from partner Search & Rescue (SAR) organisations. They can be tasked nationally to any search incident where a Coastal Duty Officer (DCO) requires additional support.

4.5 Inland Water

HM Coastguard provides a capability and supporting role to other responders under the Civil Contingencies Act for inland Search and Rescue.

The responsibility for the co-ordination of land-based and inland waters SAR rests with the Police Service and is derived from their duty to protect life and property. The Police Service has delegated this coordination responsibility to the DfT's MCA for the following inland waters.

- Lochs Ness, Oich and Lochy
- Loughs Neagh and Erne
- Upper River Clyde, Windermere
- Coniston Water, Ullswater and Derwent Water
- River Severn to Gloucester, Norfolk and Suffolk Broads and River Thames to Teddington

4.6 Casualty Care

The HM Coastguard Emergency Responder Casualty Care (CERCC) course is taught by a team of trainers locally on the coast. The HM Coastguard CERCC qualification is bench marked at Level D of the Pre-Hospital Emergency Medicine (PHEM) Framework from the Faculty of Pre-Hospital Care, Royal College of Surgeons, Edinburgh. It is also equivalent in syllabus content to the First Responder Emergency Care (FREC) 3 level, although CERCC contact time is less at 24 hours, compared to FREC 3 at 35 hours. The qualification does not cover the administration of pain relief to casualties. The course has been updated to include the new HM Coastguard CERCC Casualty Check Cards, equivalent to those already in use with other SAR agencies (e.g., Royal National Lifeboat Institute (RNLI), Association of Lowland Search and Rescue (ALSAR)).

The specific aims of the HM Coastguard CERCC course, and the underlying principles of casualty care generally, are known as the 3Ps, which are to: preserve life, prevent deterioration and promote recovery. HM Coastguard's role is to evacuate the casualty to the nearest safe point to meet Ambulance personnel. If the casualty requires more advanced intervention and cannot be removed from the scene then the attendance of a SAR helicopter should be requested as the paramedic / winch man will be able to fulfill any extra requirements.

5. Aeronautical Capabilities

The Aviation Branch is responsible for the provision of air assets to support our international obligations to provide SAR and Counter Pollution response. HM Coastguard has the operational primacy for all SAR helicopters within the UK which are coordinated and deployed from the Joint Rescue Coordination Centre Aeronautical Rescue (JRCC-AR).

HM Coastguards JRCC-AR (previously known as ARCC) is the aircraft tasking and coordination center. All requests for air support need to go to the JRCC-AR via normal means of communication. The service has helicopters operate from ten strategically located bases across the UK. Helicopters can be airborne within 15 mins between 0800 and 2200 and 45 mins at all other times.

The JRCC-AR is comprised of 30 trained specialists divided into four teams, available 24/7.

The branch is also leading on procuring an aerial surveillance capability to support the UK national need. Their role includes the procurement and contractual management of all operational air assets including interacting and managing our aviation stakeholders and coordinating all requests for visits to our SAR bases. HM Coastguard also lead on the assessment of new and emerging innovative air technologies for emergency response.

Figure 3:

Sikorsky S92

Figure 4: Leonardo AW189

Figure 5: Beechcraft King Air 200's

Figure 6: Piper Navajo 'Panthers'

Figure 7: Schiebel S-100

Figure 8: Diamond Aviation DA62

Figure 9: Aviation Asset Capability

Aviation Type	Capability	Radius Nautical Miles (NM)	Cruising Speed Knots (kts)	Max Speed	Number of casualties
Helicopters					
10 x Sikorsky S92	• Radar, Global Positioning System (GPS), Automatic Identification System (AIS) • High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), Airwave and Satcomms • High powered External Lighting • Night Vision Goggle • Electro-optic/infra-red forward-looking camera	250nm	145kts	165kts	10 seated passengers and 2 stretchered casualties OR 20+ passengers in an emergency.
11 x Leonardo AW189	• Radar, GPS, AIS • HF, VHF, UHF, Airwave and Satcomms • High powered External Lighting • Night Vision Goggle • Electro-optic/infra-red forward-looking camera	190nm	145kts	169kts	4 seated passengers and 2 stretchered casualties OR 10+ passengers in an emergency
Fixed Wing Aircraft					
3 x Beechcraft King Air 200's	• Can drop small stores, such as emergency beacons and flares • 2x VHF Airband radios • Iridium Satphone • VHF Maritime radio	1500nm	250kts	250kts	N/a
2 x Piper PA-31 Panther Navajo	• Satcom, marine band radio & spidertracks text • Infra-red camera with electro optic modes	800nm	180kts	180kts	N/a

Drones					
Schiebel S-100	• MX10 EO/IR/HD camera • Pico SAR radar • PT8 Oceanwatch small target detection	200km	130kts	130kt	N/a
Diamond Aviation DA62	• MX15 or Trakka TC-375 EO/IR/HD camera • Diades C-Ranger 200 Airborn Maritime Surveillance Radar • Marine band radio • SATCOM • Line of sight downline	1,288 nm	192 kts	192 kts	N/a

6. Communications

6.1 Global Maritime Distress and Safety System

The Global Maritime Distress and Safety System (GMDSS) is an internationally agreed system including safety procedures, carriage requirements of equipment and communication protocols to facilitate rescue of distressed vessels and aircraft.

The concept was developed by the International Maritime Organization (IMO) in 1973 and came into force in 1999, requiring full compliance of all vessels covered by the International Convention for the Safety of Life at Sea (SOLAS). The concept was developed by the International Maritime Organization (IMO) in 1973 and came into force in 1999, requiring full compliance of all vessels covered by the International Convention for the Safety of Life at Sea (SOLAS). UK vessels are governed by legislation contained in the Merchant Shipping (Radio Installations) Regulations 1998. Since 2005, all vessels which are voluntarily fitted with VHF equipment are encouraged to fit VHF Digital Selective Calling (DSC).

DSC is an automatic calling system making the initial contact between two stations, group of stations or stations in a selected area. A call comprises of a short message directly transmitted to the receiving station(s) on dedicated radio frequencies. The received information indicates the purpose of the call and may direct the operator to a different channel for subsequent communications. In a distress situation, the message includes the position and nature of distress and causes a continuous alarm that has to be acknowledged by the operator.

Inmarsat is a commercial enterprise and currently the only provider of GMDSS maritime communications services by satellite. Inmarsat is a commercial enterprise and currently the only provider of GMDSS maritime communications services by satellite. Inmarsat offers a range of general communication and network solutions with a geographical coverage between 76° North and 76° South.

Maritime Safety Information (MSI) includes navigational and meteorological warnings, forecasts and other urgent safety related messages of importance to all vessels at sea and may also include electronic chart correction data. Broadcasts are made by MF telex (known as NAVTEX) for local MSI and by Inmarsat-C or HF telex for long range MSI (e.g. NAVAREA warnings).

Emergency Position Indicating Radio Beacon (EPIRB) alerting via satellite is carried out through the COSPAS/SARSAT network providing full global coverage through satellites in polar and geostationary orbit. More information can be found in GMDSS COSPAS/SARSAT.

Search and rescue locating devices are portable transmitters primarily intended to be deployed on survival craft and working by transmitting a radar signal (Radar Search and Rescue Transponders) or messages using the Automatic Identification System (AIS Search and Rescue Transmitter).

6.2 Remote Radio Site Estate and Capability

HM Coastguard has a maritime VHF and MF analogue radio estate at key locations along the entirety of the United Kingdom coastline. This estate is comprised of 164 remote radio sites

providing VHF range up to 30 nautical miles offshore (Area A1 under GMDSS), and up to 250 nautical miles MF range (Area A2).

The Network allows for any aerial to be accessed by any operator at any coordination station within the network.

VHF works by line-of-sight and is independent of the mobile network infrastructure. When combined with CRT mobile VHF radios, the VHF network has proven highly resilient in areas affected by flood, where the power supply infrastructure is unreliable.

VHF aerials can be connected to phones via a connect call facility at the coordination centres if required (for example, Radio Medical Advice calls).

VHF radio communications are not secure and cannot be used for transmission of sensitive or personal data.

6.3 Telephony

HM Coastguard utilises a VOIP telephony system that ensures that calls are received at the team responsible for delivery of SAR and other duties, wherever they happen to be located within the Network.

For Major Incidents, special 'events' numbers can be assigned which ensures that key communications between TCG, SCG or other groups formed in response to an incident can access the coordination teams, or Tactical / Strategic commanders within Maritime Operations more easily.

The telephony solution also allows for connect calls to be made between various communications platforms (VHF, Sat comms) and conference call functions with a replay facility.

6.4 Airwave

Through its Integrated Coastguard Communications System (ICCS) HM Coastguard has the capability throughout the National Network to access 14 Airwave Talkgroups at any one time (an unlimited number of ICCS users can monitor each assigned Talkgroup) – these are assigned by the relevant authority through their Shared Hailing Groups.

HM Coastguard has access to the following UK Emergency Services Fleet Map Talk Groups:

- M SAR HG
- M SAR 1 – 4
- HMCG OPS 1 – 5

Emergency Services Interoperability Talk Groups (EISCTRL):

- All 12 talk groups in the UK actively monitored by HMCG and can be used for Major Incident alerting to partners

For All police forces:

- SHG
- IC1
- ES1,2,3

Ambulance:

- SHG

Fire:

- SHG

And for Scotland:

- PSCOT SHG 1 – 3
- PSCOT IC 1 – 3
- PSCOT ES 1 – 12
- XSCOT IAT 1 – 3

Full time coastal officers are equipped with hand-held airwave radios, and the Maritime Rescue Coordination Centers and the Joint Rescue Coordination Centre at Fareham are equipped with Airwave radio. Volunteer Coastguard Rescue Service personnel (who make up the majority of shoreside rescue capability) are not equipped with airwave, utilizing VHF radio as their primary means of communication.

As with Telephony, for Major Incidents, separate Talkgroups can be allocated in the form of Incident Command Talkgroups – reserved for Silver Command, or Emergency Services Talkgroups for Bronze Command level.

HM Coastguard possesses its own Maritime Search & Rescue Talkgroups available to other emergency services, accessible by contacting HM Coastguard first through the Maritime Search and Rescue Hailing Group monitored in Zone 12 (London Coastguard).

HM Coastguard is limited with its Point to Point calling capability in that a Point-to-Point call can be made from the MRCC to a specific user but not from a specific user to the MRCC – this is due to all Airwave being routed through London Coastguard.

6.5 Satellite Communications

HM Coastguard can utilise satellite communications through the INMARSAT system and via satellite telephony providers to assist with the delivery of routine operations when responding to major incidents. Satellite communications are often used when vessels are out of range of radio communications.

Enhanced Group Call (EGC) forms part of the INMARSAT system and allows HM Coastguard to broadcast Distress, Urgency and Alert messages to vessels with INMARSAT terminals on board, within a certain geographical area or selected groups of vessels. These broadcasts sound an audible alarm on receipt which have to be reset manually. HM Coastguard can also send routine messages to vessels fitted with INMARSAT terminals and speak directly to vessels with satellite telephony on board.

HM Coastguard represents the Secretary of State for Transport as the competent authority to receive and respond to ship to shore covert security alerts. The Ship Security and Alert System (SSAS) is a discrete communication link from the ship to HM Coastguard and the shipping company when a master of a vessel deems it necessary, for example due to piracy, hijacking or any incident threatening the ship's security.

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