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Flood Rescue National Enhancement Project

Flood Rescue Concept of Operations

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Flood Rescue Concept Of Operations

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1 Introduction

Background

1.1. In Spring 2006, Defra undertook a detailed capability assessment of flood emergency planning and preparedness in England and Wales, based on the outputs of the National Capability Survey 2006. The analysis clearly showed a shortfall in capability to rescue people when compared against the planning assumptions for a severe east coast flood. Since this time, the capability has improved with the purchasing of additional rescue craft by a number of organisations, in particular Fire and Rescue Services. At the same time, arrangements for training and the concept of 'team-typing' have matured with a number of organisations adopting a collaborative approach to training their staff in flood/water rescue.

1.2. The floods in Summer 2007 aggressively tested flood rescue capability across England. Sir Michael Pitt's Review praised the role of many organisations carrying out flood rescue, including the Fire and Rescue Service (FRS), the Maritime and Coastguard Agency (MCA), the Royal National Lifeboat Institution (RNLI) and the Armed Forces. Evidence submitted to his Review also highlighted the valuable role of other voluntary search and rescue organisations such as Rapid UK, Severn Area Rescue Association and Avon and Somerset Search and Rescue.

1.3. Despite recent improvements in capability, evidence also showed that in the event of another wide-area flooding emergency, those responding would still not necessarily have the right resources or training to respond safely.

The main problem areas highlighted were:

- Ad-hoc mutual aid enacted without a national strategic overview could leave significant areas of the country exposed
- A lack of clarity about who was responsible for carrying out and coordinating flood rescue placed both the public and responders at unnecessary risk
- Timeliness and the effectiveness of the response were diminished since there were no common systems of work or understanding of command, control and risk
- A number of voluntary search and rescue organisations experienced difficulty in engaging with the response effort as there was no clear and consistent structure within which they could operate.

1.4. The Pitt Review thus concluded that a national framework (concept of operations) was required, establishing standards for typing and accreditation of rescue teams and setting standards for equipment and training. This would facilitate different local capabilities to be 'plugged' seamlessly into a regional or national response during wide area flooding. This Concept of Operations would also facilitate the accreditation and incorporation of volunteers, thereby making their engagement easier. Sir Michael's recommendation No.39 stated that:

"The Government should urgently put in place a fully funded national capability for flood rescue, with Fire and Rescue Authorities playing a leading role, underpinned as necessary by a statutory duty."

1.5. The Government has accepted Sir Michael's recommendation No.39 and has already engaged key statutory and voluntary agencies through the UK Search and Rescue Group.

1.6. The purpose of this project is to address the shortfalls identified by the Pitt Review and earlier analyses, by providing a significant improvement in the capability and national co-ordination of flood rescue in England.

Scope of this document

1.7. This document sets out the Concept of Operations for enhancing the capability and national co-ordination of flood rescue in England.

1.8. In particular this document sets out:

- The scope of the Flood Rescue National Enhancement Project (FRNEP)
- The Concept of Operations for how agencies involved will respond to flooding incidents
- The management and engagement of national flood rescue assets and team types

1.9. This document serves as a basis for co-ordination with other government departments, the blue-light services, and other agencies, in meeting the country's requirements for flood rescue.

1.10. This document will be updated and reviewed on an annual basis, to ensure it reflects flood rescue requirements and emerging best practice.

1.11. The scope of the Flood Rescue National Enhancement Project, and the scope of this document, is for England only.

Flood Rescue Concept of Operations

1.12. The Flood Rescue Concept of Operations has the following roles. It will:

- Ensure the best use of available resources in order to provide capability in the most efficient and effective manner
- Provide the basis for defining the requirements of all resources being procured by the programme and ensuring that what is supplied meets the capability needed
- Provide clarity on co-ordination of all search and rescue activity during severe flooding
- Provide a scalable approach which can incorporate existing and expanded asset base
- Inform the safe and efficient incorporation of accredited local resources, including those provided on a voluntary basis
- Inform the development of flood rescue training strategy
- Serve as a source of reference and basis for long-term planning

1.13. The Flood Rescue Concept of Operations will provide the basis for a set of planning assumptions regarding:

- The type and quantities of equipment required according to team type
- How and to whom that equipment is allocated and located according to team type
- Training required to operate the equipment in each organisation.

1.14. In order to ensure that appropriate resources are mobilised in times of flooding, the Concept of Operations (and its provisions) will need to be built into the emergency planning arrangements put in place by Local Resilience Fora (LRF) across the country. LRFs are the principle mechanism for multi-agency co-operation (police, fire, local authorities etc) in each local resilience area, under the Civil Contingencies Act. The LRF is not a statutory body, but is a statutory process. Achievement of universal awareness of the Flood Rescue Concept of Operations among LRFs is a key objective of the project's communication stream.

Benefits of a Concept of Operations

1.15. Articulation of a Concept of Operations affords the following benefits:

- Greater clarity and certainty in respect of roles and responsibilities for specialist flood rescue operations during a major flood event
- Greater clarity and certainty in respect of roles and responsibilities of supporting flood rescue operations such as medical support (air ambulances etc), animal rescue (e.g. RSPCA), dive-teams, vehicle retrieval (e.g. the AA) and other flood response efforts operating simultaneously in flooded areas
- Improved visibility of the capabilities and capacity of flood rescue resources available to Gold Commands during flood events, achieving greater utilisation of available resources
- Assurance for the public, requesting Authorities and Incident Commanders that rescue teams responding to mutual aid requests are capable of carrying out the tasks required of them safely and effectively
- Improvements in the co-ordination of resources on the ground and with air Search and Rescue operations (e.g. RAF etc), the provision of logistical support, the decontamination of equipment and the return of specialist resources to normal duties at the end of the incident
- Reduced costs by taking a national multi-agency approach to strategic resilience and making best use of existing assets
- Standardisation of approach and equipment across all agencies with a common procurement framework will also drive down costs and enhance resilience through greater interoperability.

Relationship between the FRCO and other key policies and documents

1.16. The Flood Rescue Concept of Operations has been developed by the Department for Environment, Food and Rural Affairs. There are a number of programmes, initiatives and legislative instruments, which will contribute to a national concept of operations for flood rescue. They include the following:

- Civil Contingencies Act
- Flood and Water Management Act
- UK Government Concept of Operations
- Defra's Lead Department Plan for flooding

- National Flood Emergency Framework
- Capabilities Programme
- Pitt Review

2 The Role of the Flood Rescue National Enhancement Project

Background: Flooding in the UK

2.1 Widespread and serious flooding has affected many parts of England over recent years. The severity of the 2007 floods and the reality of climate change have prompted the government to reassess the country's ability to manage and respond to such events in the future. The Pitt Review has set in motion the agenda for an enhancement in capability and an improvement in the safety regime of our reservoirs. Key to the project's success is the integration of those stakeholders involved in flood rescue to develop and nurture a philosophy of partnership and cooperation through a national concept of operations.

Organisational Scope

2.2 This project is constituted under the Flood Emergencies Programme within Defra with direction from a dedicated Project Board.

2.3 The Project Board integrates the work of three stakeholder panels; representing the interests of, and enabling consultation with; Users, Suppliers and Government Departments.

2.4 The Cross Government Departmental Officials Group has enabled interaction with the lead Government Departments having a governance interest in the project; namely Department for Communities and Local Government, Cabinet Office and Department for Transport.

Exclusions

2.5 The project concerns flood rescue – i.e. the frameworks, standards, and equipment and generic operational processes required to manage and effect rescues from flood water. The scope of the project does not extend to revising organisational operational manuals but may include determining recommendations on how such can be altered to be better aligned with the National Flood Rescue Concept of Operations.

2.6 Requirements arising from the need to effect rescues from 'conventional' water-borne settings (such as ice, mud, rivers, lakes and the sea) are excluded, as are rescues from water-borne fire scenarios. However, it should be noted that some of these elements are included in the training modules for the sake of completeness.

2.7 The project will revisit evidence gathered during the Pitt Review in relation to the possible need for statutory underpinning of the role of any of the agencies involved, but the establishment of any such duty would be a follow-on task which is excluded from the immediate scope of this project.

2.8 The project is mandated to provide facilities and resources for England only; however close involvement in the project will be maintained with the Scottish Government, the Welsh Assembly Government and the Northern Ireland Assembly throughout in order to enable consistent and complementary services to be developed across administrative boundaries and to ensure the Concept of Operations can operate across the UK.

2.9 The scope of the project does not include the establishment of International Mutual Aid arrangements as this falls within the purview of the Civil Contingencies Secretariat.

Aims

2.10 The project aims to augment existing local and specialist capability. Its aim is to enhance preparedness and response by improving co-ordination and enhancing the capability of those organisations involved in flood rescue.

2.11 The project will provide an organisational capability and structure to enable the delivery of a co-ordinated national response to flooding incidents, such that organisations can work together to minimise the loss of life and injury and to reduce the physical and financial effects of consequential loss and collateral damage.

2.12 The desired outcome from the Project is that organisations involved in Flood Rescue will have additional capabilities and capacity to respond to major flooding incidents so that they will be able to:

- Deal with the consequences of major flooding, by having the appropriate operational capability
- Maintain the capability over the long term so that it is available whenever required
- Deploy resources swiftly once a flooding incident occurs
- Command, control and communicate at major flooding incidents, from assessment and initial response, through to the management of recovery and re-establishment of preparedness
- Introduce national mutual aid and standards such that the organisations can respond to emergencies with consistency, possibly over a sustained period.

Dependencies

2.13 In order to achieve effective operations on the ground, the Concept of Operations developed for flood rescue will need to interface effectively with:

- Multi-agency co-ordination procedures implemented by Strategic Coordinating Groups (Gold commands) usually under the leadership of the Police.
- Existing arrangements for the mobilisation, allocation, deployment, co-ordination and logistical support of flood rescue Search and Rescue assets (e.g. high volume pumps, SAR aircraft, RNLI Response Units etc)
- The FRS Incident Command System and other similar systems in use with other key responder agencies
- The UK Search and Rescue Framework, http://www.mcga.gov.uk/c4mca/uksar.pdf.
- National Flood Emergency Framework

2.14 Where responder organisations have competency based development systems (e.g. the Fire & Rescue Service's Integrated Personal Development System – IPDS); the skill sets required for personal accreditation will need to be reflected in the core competency frameworks.

3 Response to Flood Rescue: A National Capability Concept of Operations

Role and Responsibilities of Government Departments in Flooding

3.1. There is a range of partners involved in planning for, and dealing with, flooding events at the national, regional and local levels. The responsibilities of Defra and others are set out in the Lead Department Plan (Defra, 2010) (PDF 397KB). The Plan takes account of lessons identified following the Summer floods and November East Coast Tidal Surge in 2007, and the Cumbria floods of 2010, as well as issues raised in the Pitt report.

3.2. Regionally, the lead planning role falls to the government offices for the regions working with local authorities, the Environment Agency and emergency services (police, fire, ambulance, and coastguard). The police will lead the response during an actual emergency. The Environment Agency's main operational role is to forecast flooding, issue flood warnings and operate its own flood defence infrastructure (for example barriers and sluices) to mitigate the impacts. The Environment Agency ensures local professional partners are well briefed on the likelihood and implications of flooding. There are also provisions for government coordination when necessary through the arrangements operated by the Cabinet Office Civil Contingencies Secretariat.

3.3. The Government has set up a Resilience and Emergencies Division within DCLG, with teams in four locations (London, Bristol, Birmingham and Leeds) to enhance the co-ordination of planning for wide impact events such as major flooding and to improve lines of communication between central Government and local responders during the response to an incident, as well as the initial recovery stages.

3.4. UK Search and Rescue also has a role to play in flooding response, including the involvement of voluntary bodies. The organisation for Search and Rescue (SAR) in the United Kingdom of Great Britain and Northern Ireland (UK) is an amalgam of separate Government Departments, the emergency services and other organisations. A number of charities and voluntary organisations dedicated to SAR also play a significant role. 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.

Trigger mechanisms for national coordination of Flood Rescue

3.5. Preparedness is critical to achieving a timely, safe and effective response and there are several information sources available to assist responders in planning and preparing for flooding events. These are detailed in **Annex A**. Local Resilience Fora should plan for all major flood events as part of their duties under the Civil Contingency Act. It is not intended that detailed advice on that planning be included within this document. However, the following contains key considerations for when initial flood warnings are received.

3.6. The National Flood Forecasting Centre will give adequate and timely flood warnings. These warnings should be reviewed in close liaison with local Environment Agency and Met Office representatives to give an accurate picture of the coming flood event. This will include the amount of flood water expected, the likely duration, the extent, the speed of flow and other hydrological data, the effect of tides, the depth of flooding and wind strength/direction.

3.7. This information should be considered alongside data on populations likely to be affected. This assessment should include population density, ability to evacuate, location relative to access and egress routes and vulnerable communities or individuals. There must also be an

assessment of risks to critical infrastructure such as hospitals, water treatment works and electricity generating plant. Consideration should be given to the likely impact on road and rail network both in terms of evacuation and also incoming mutual aid. This information is often usefully found in Multi-Agency Flood Plans.

3.8. Once a full picture of the potential flood is established, a strategy for dealing with the incident must be developed. This should set the priorities for the management of the event and allow an accurate assessment of rescue needs.

3.9. The resources to deal with the incident should be matched effectively against the incident need. A system of team typing has been developed for each level of flood rescue and incident management that simplifies the analysis of the resource requirement. This system provides assurance regarding the capabilities of each element deployed. These capabilities are described below in tables at the end of this Section 3.

3.10. When assessing mutual aid requirements consideration must be given to the time of day, distance to be travelled, logistical arrangements including rest and accommodation centres etc. The FRSNCC – the Fire and Rescue Services National Coordination Centre - (usually assisted by a Flood Response Subject Matter Advisor) will coordinate the mobilisation of mutual aid within the FRS National Coordination and Advisory Framework for rescue in partnership with the receiving authority, except in cases where local agreements are in place. If assets that are on the National Asset Register are deployed through such local agreements, it is imperative that the FRSNCC is informed, so that these assets are flagged as not available for deployment elsewhere.

Flood Rescue equipment and assets

3.11. Sir Michael Pitt's Review concluded that in the event of another wide-area flooding emergency, those responding would still not necessarily have the right resources or training to respond safely. A procurement framework was created by Firebuy Ltd in partnership with Defra. Subsequently this contract was passed to The Consortium for Purchasing and Distribution Ltd on 31 May 2011. The aim of the procurement is to provide flood rescue responders with a framework agreement offering a full range of equipment, services and training to meet this important area of work. The framework is available to public sector organisations such as Fire and Rescue Services, the Ministry of Defence and Maritime and Coastguard Agency as well as registered charities like the RNLI, and all flood rescue responders that are put forward on to the Flood Rescue National Asset Register.

3.12. The procurement framework has been established using technical expertise from organisations such as the Chief Fire Officers Association (CFOA), Fire and Rescue Service (FRS) and RNLI.

3.12.1. **What is covered by the procurement**

The procurement covers four lots, Water Rescue Personal Protective Equipment (PPE), Water Rescue Craft, Water Rescue Equipment and Water Rescue Training.

3.12.2. **Lot 1 – Personal Protective Equipment**

Protecting rescuers when dealing with flooding and water rescue requires very different clothing and accessories than protecting them during land based rescues. This Lot will provide a range of dry suits, undersuits, footwear, helmets, gloves and other protective garments to ensure responders have the right attire to deal with what can be a hostile environment. Entry in both salt and fresh water can be dangerous and cold, as well as being contaminated with biohazards and sewage.

3.12.3. **Lot 2 – Craft & Engines**

This Lot includes powered and non-powered boats as well as range of appropriate outboard engines together with trailers to get the craft to where they are needed. They are not only required to transport rescuers to the scene but to transport flood victims, who may have mobility issues, to safety.

3.12.4. **Lot 3 – Rescue Equipment and Accessories**

This is a diverse Lot which includes specialist equipment for the rescuers from knives, whistles, mudlances and personal location lighting to litter basket stretchers, inflatable rescue platforms, animal cages and rope rescue kits.

3.12.5. **Lot 5 – Training Courses**

The CFOA Inland Water Technical Group and Defra's FRNEP group have identified particular outcomes that are required from flood water rescue training which are essentially different from skills rescuers might have previously acquired from other open water training programmes. As a result five modules in this Lot are being developed which to enhance participants' competencies for carrying out flood water rescue:

- Water Awareness
- Water Rescue First Responder
- Water Rescue Technician
- Water Rescue Power Boat Operator
- Water Rescue Incident Manager

Across each Lot there will be a need for training and maintenance, servicing and cleaning of equipment, craft and clothing; these important areas are being built in to the procurement.

Further information can be found at http://www.firebuy.gov.uk/home.aspx

Register of accredited flood rescue team types and Advisors

3.13. Defra has gathered information on all existing flood rescue assets that wish to be included on a National Asset Register. Completed questionnaires from flood rescue responders have captured information on existing assets, thus building an accurate picture of current flood rescue capability. This register will be maintained through holders of registered assets updating the FRS National Coordination Centre with the latest availability of their assets.

3.14. The capability of each responder will be assessed against an agreed accreditation criteria for all level of flood rescue assets, thus enabling asset categorisation. These are known as team-types and range from Type B (Powered Boat and Advanced Water Rescue) to Type D. Type A is an advanced powered boat that is not currently deemed necessary for our flood rescue requirements. More information on how to become part of the National Asset Register of flood rescue assets can be found by contacting flood.rescue@defra.gsi.gov.uk.

3.15. In addition, different criteria will be assessed to ensure each agency is able to maintain their assets, which includes having in place suitable management and business provision for items such as insurance, finances etc and also a robust approach to the maintenance of training, standards and equipment.

3.16. In the cases of wide-area, severe flooding, Guidance has been created for accessing mutual aid through the FRSNCC. This Guidance can be found in **Annex B**.

3.17. A Memorandum Of Understanding for the National Asset Register that sets out the required agreement between the declared flood rescue agency and Defra can be found in **Annex C**. This document constitutes a broad agreement to release assets nationally, when reasonable. Agencies are expected to maintain their respective teams in accordance with the FRCO standards, paying particular attention to the training, equipment and team typing documents which have been consulted upon and agreed.

Incident Command

3.18. Primacy: Interoperability is critical both for routine cross border mutual aid operations and for larger scale incidents involving deployment of national assets. The duty to coordinate inland flood rescue lies with the Police and they will have primacy during major flood events. It is fully recognised that during a major flood event flood rescue assets will be deployed from a wide range of organisations including emergency services provided by volunteers (RNLI, Mountain Rescue, Lowland Search and Rescue, Cave Rescue etc). In order to ensure a safe and efficient response it is essential that these resources are capable of operating at an incident and do so under a single unified command system. Therefore it is likely the command system employed will be based upon the Fire and Rescue Incident Command System as applied in the flooding context i.e. adapted to take account of the specialist search and rescue nature of flooding.

3.19. The following is adapted from the UK Government's concept of operation for responding to emergencies, as revised in March 2010. It describes the generic duties of command at each level and forms the basis for the following sections relating to flood incident command.

3.19.1. The local response is the basic building block of the response to any emergency in Great Britain, reflecting the fundamental distinction between the independent role of the police and other statutory authorities, and the strategic direction/support provided by Government. It is based around the delivery of individual agencies' responsibilities co-ordinated, where appropriate, through a multi-agency Strategic Co-ordinating Group chaired in most cases by a senior police officer.

3.19.2. These arrangements are underpinned by the statutory framework for emergency preparedness set out in Part One of the Civil Contingencies Act 2004, focused on multi-agency co-operation through local resilience fora which bring together senior representatives of the emergency services, local authority partners, NHS bodies and other Category One and Two responders. In the event of an emergency occurring within its area, most members of the LRF will attend meetings of the local Strategic Co-ordinating Group overseeing and co-ordinating the local response.

Strategic Co-ordinating Groups

3.19.3. If the scale and nature of an incident is such that it requires strategic guidance, this will be provided through a Strategic Co-ordinating Group (SCG), a multi-agency body that will be formed in the Strategic Co-ordination Centre (SCC).

3.19.4. The SCG is made up of senior representatives with executive authority from each of the key organisations involved in the local response. It will normally be chaired by a senior police officer during the response phase although, on occasions, particularly where there is no immediate threat to life, a senior local authority official or other appropriately trained and experienced individual may assume the role. The SCG will take strategic decisions on managing the emergency locally. Operating alongside, but separate from, the SCG will be individual agencies' own command structures, in many cases headed by each agency's own "Gold Commander".

3.19.5. A number of sub-groups may be convened at the request of the chair of the SCG. These usually include a Recovery Co-ordinating Group, led by the relevant local authority, to prepare for the recovery phase and advise the SCG on response decisions that can potentially affect longer-term recovery activity, and a Science and Technical Advisory Cell (STAC), led by the relevant expert organisation with representation from other leading scientific and technical organisations.

3.19.6. Once the initial crisis response is complete, leadership of the incident will normally transfer to the Recovery Co-ordinating Group and the relevant local authority to oversee the recovery phase. In most scenarios, police response and local authority-led recovery groups will work in parallel within a single police force area until the SCG is stood down.

3.19.7. Organisations and agencies that may be involved with the local response will all work on the following common objectives:

i. saving and protecting human life

ii. relieving suffering

iii. protecting property

iv. providing the public with information

v. containing the emergency – limiting its escalation or spread

vi. maintaining critical services

vii. maintaining normal services at an appropriate level

viii. protecting the health and safety of personnel

ix. safeguarding the environment

x. facilitating investigations and inquiries

xi. promoting self-help and recovery

xii. restoring normality as soon as possible

xiii. evaluating the response and identifying lessons to be learned.

3.19.8. Operating below the local (multi-agency) Strategic Co-ordinating Group are three levels of command– operational (Bronze), tactical (Silver) and strategic (Gold). Sometimes these may be implemented without the need for multi-agency co-ordination through the SCG, with any necessary co-ordination taking place at silver or bronze level. The need to implement one or more of these response levels will depend on the nature of the incident, but normally incidents will be handled at the operational level, moving to the tactical or strategic level if required depending on the scale or nature of the incident.

Operational Command (Bronze)

3.19.9. The operational level is where the management of the immediate work is undertaken at the emergency site(s) or other affected area. Personnel first on the scene will take immediate steps to assess the nature and extent of the problem, formulate a plan and concentrate efforts and resources on the specific tasks within their area of responsibility. For example, police will concentrate on establishing cordons, maintaining security and managing traffic. Agencies retain control of resources and personnel deployed at the scene but each agency must also liaise and co-ordinate with other agencies.

Tactical Command (Silver)

3.19.10. The purpose of the tactical level is to ensure that the actions taken by Bronze Commands are co-ordinated, coherent and integrated, in order to achieve maximum effectiveness and efficiency. Silver will usually comprise the most senior officers of each agency committed at the incident and will assume tactical command of the event or situation.

Strategic Command (Gold)

3.19.11. The purpose of the strategic level of local emergency response management is to establish a framework to support officers operating at the tactical level of command by providing resources, prioritising demands from officers and determining plans for the return to normality.

3.20. More information on the local response can be found in the Cabinet Office publication "Emergency Response and Recovery", which can be found on the UK Resilience pages of the Cabinet Office website at http://www.cabinetoffice.gov.uk/ukresilience.aspx.

3.21. It should be borne in mind that different services, depending on the circumstances of the specific incident, may choose to exercise command at similar levels from different locations. The most common example of this is where the police Silver Commander chooses to locate in a police HQ or communications facility, whereas the FRS IC (or Fire Silver) chooses to co-ordinate the Fire Bronzes, or Sector Commanders, from the incident communications facility, most frequently a command unit. Consideration should be given to the likely disruption of the road network during widespread flooding. When the Fire Silver needs to attend a multi-agency liaison meeting at the police commander's HQ, or elsewhere, the incident will be left under the supervision of another senior member of the Silver Command team for the duration of the absence. In these circumstances, the designation of "IC" will rest with the officer on-scene. (FRS ICS Manual).

Key Command Considerations

Strategic Command

3.22. The main focus of strategic command is to establish the priorities and strategy for managing the incident and to supply the resources to deal with it. This includes establishing a clear and unambiguous command structure based upon the principles of primacy described earlier, in the section on Incident Command. A key function of Strategic Command is to pre-deploy rescue and flood management assets into each level of command and in each potential area of operation, paying particular attention to matching resources against risk for the duration of the flood response phase.

Developing Intelligence and Resourcing Assets

3.23. Strategic command will establish the full potential extent of the incident, the likely duration, the areas of highest need, including vulnerable life risk and critical infrastructure, and the precise resources required. In deciding the pre-deployment of rescue assets strategic command will be aware of mutual aid arrangements (see **Annex C**), the need to provide logistical support and the need to maintain operations throughout the response and recovery phase of the incident. In particular, strategic command will consider the capabilities and performance requirements of the rescue resources and select these according to team type.

Information Management

3.24. Strategic command will establish clear lines of communication utilising information mapping techniques. This will be best served by establishing an information management sector within the command structure. This sector will be responsible for establishing the radio network, maintaining communication links and recording and monitoring information flow, including incident logs. The information management command sector will cover all elements of the wider command structure. A key function is to establish a process for generating a Common Recognised Information Picture (CRIP). This is the primary method for obtaining an accurate assessment of what is happening throughout the incident and should be embedded at each command level.

Resilience

3.25. Strategic Command will ensure that each element of the command structure is resourced effectively, to ensure adequately trained and equipped commanders are provided for each command position throughout the duration of the incident.

Tactical Command

3.26. Tactical Command will be carried out in accordance with the principles of primacy outlined earlier, in the section on Incident Command. The main focus of tactical command is to establish the tactics to meet rescue and search management requirements. Tactical command must establish or confirm a tactical plan according to the agreed priorities. It will also fully establish precise resource needs and transmit these to Strategic Command. Tactical command must accept a degree of autonomy on the part of operations commanders to develop plans and carry out tasks to achieve the tactical priorities set by tactical command.

Developing Intelligence

3.27. Tactical command will establish the scope and scale of the incident within their area of operation through predictive intelligence analysis and accurate incident reports; this will be in accordance with the priorities established by Strategic Command. The search and rescue plan will be developed through close inter-agency liaison especially with Police' The SAR Cell and Health services. Water Incident Managers will play a key role in this function.

Resource Deployment

3.28. A search and rescue cell must be established within the command post supported by a Water Incident Manager. This cell could also include an air support liaison officer and communications officer. Mapping techniques should be used to establish search and rescue sectors under the control of a sector commander. Each sector should have adequate access and egress and a casualty evacuation plan, including potential helicopter/boat collection points (see **Annex D**).

Information Management

3.29. The information management function established by Strategic Command will play a key role in tactical command. The prime functions will be to:

- Process rescue requests
- Support the search management process
- Manage the risk assessment process
- Maintain communications
- Develop the incident intelligence picture and

- Record activity

Operational Command

3.30. The main focus of Operational Command is to carry out search and rescue tasks within a designated sector. The overriding priorities are the safety of rescue crews and the effective and safe rescue of casualties. A search and rescue plan will be established in accordance with the strategic priorities (see **Annex D**). The principles of subsidiarity apply at this level. Operational Command will need to allow individual team leaders the autonomy to make on-scene decisions within an overarching control and coordination system.

Developing Intelligence

3.31. Operational Command will clearly identify the scale of the flooding in their sector and establish the risks and resource requirements. A specialist search and rescue command point should be established supported by a flood rescue advisor (advisor specific to flood rescue and separate from flood risk advisors).

Resource Deployment

3.32. All resources should be controlled strictly in accordance with the search and rescue plan and within the incident command structure. Rescue assets should be matched with the specific task need. Particular attention is drawn to avoiding self-deployment especially of well meaning volunteers. The search and rescue plan should take account of command and rescue resource needs for the duration of the incident; for major flooding this could be some days. The principles of the Fire & Rescue ICS will apply and consideration should be given to the establishment of functional sectors such as: safety officer, rendezvous/logistics etc. This should be alongside the SAR and Communications cells specific to flood management.

Information Management

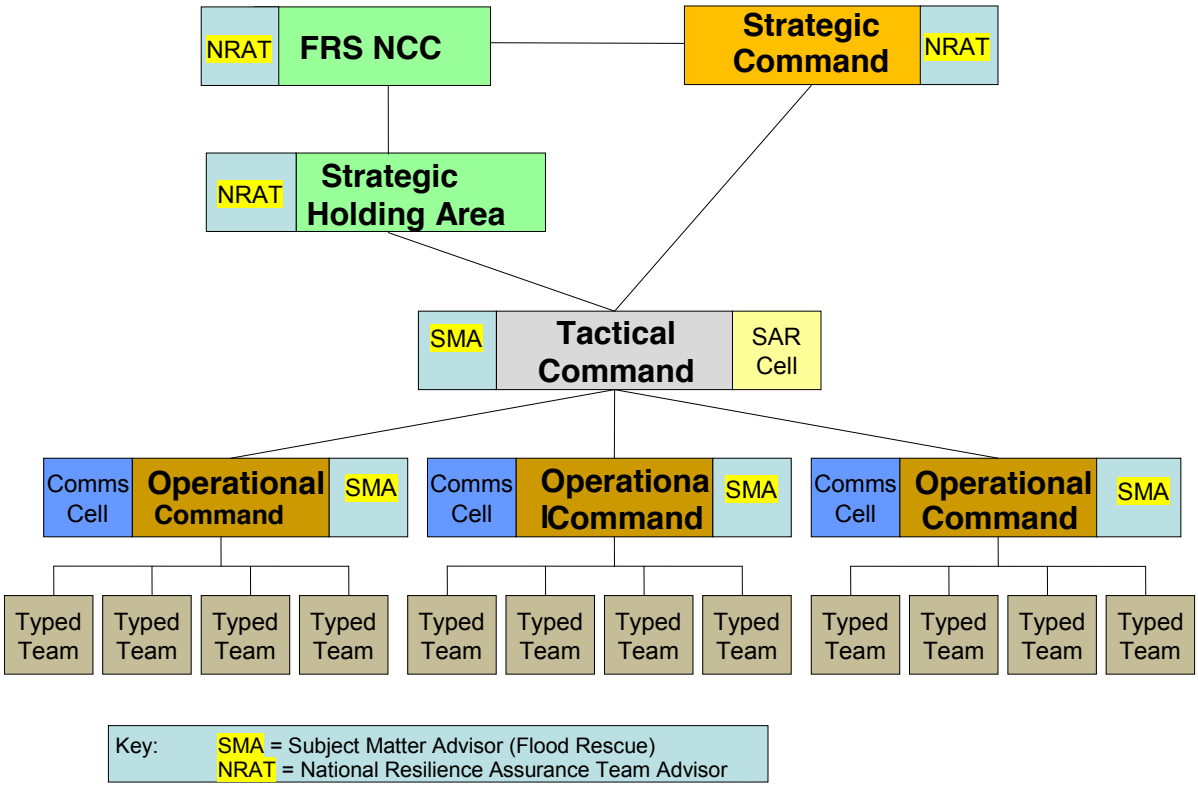
3.33. The tactical operational command picture is wholly dependent on accurate and timely incident reports from sector commanders. The coordination of assets on the ground and in the air is best supported by a specialist command sector utilising mapping techniques and effective communication networks. This again should be provided as a distinct function utilising special advisers.

Team Leaders

3.34. Team leaders must carry out a dynamic risk assessment and wherever possible inform Operational Command of the hazards and control measures. Team Leaders should operate within the principle of subsidiarity; that means making local on-scene decisions based upon their own assessment of the situation. However, they must ensure that they operate within the overall incident command system.

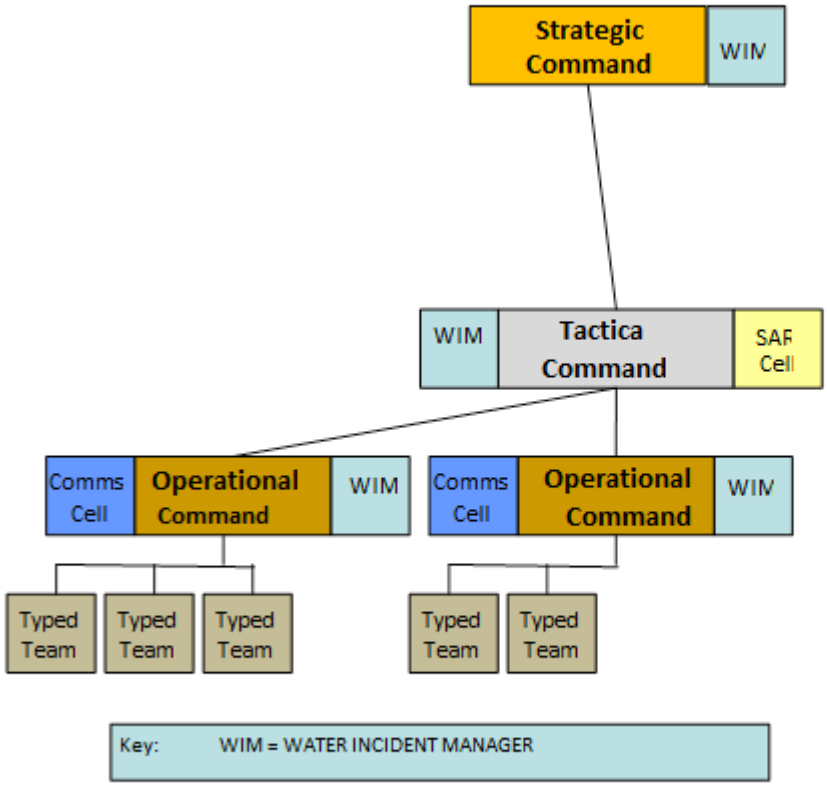
3.35. The following diagram outlines the flood rescue command and co-ordination structure.

Flood Rescue Command and Co-ordination Structure for Incidents requiring National Assets



Key: SMA = Subject Matter Advisor (Flood Rescue)
NRAT = National Resilience Assurance Team Advisor

Flood Rescue Command and Co-ordination Structure for a local event within the capability of a single LRF



3.36. The generic standard operating procedures for incident command, tactical operations, communications and helicopter operations are detailed in **Annex D**.

Subject Matter Advisors (SMA's) and the National Co-Ordination and

3.37. Within the context of overall flood rescue management, the importance of the use of specialist advisers cannot be overstated. SMA's are trained and experienced individuals that can provide a valuable resource at primarily tactical and operational levels. SMAs are persons who have been identified within Agencies and work with flood assets on a day-to-day basis. The SMA will provide detailed tactical capability-relevant advice to the Incident Commander at Silver and/or Bronze levels. SMAs will only be mobilised by the Fire and Rescue Service National Coordination Centre (FRSNCC) who hold a list of experienced SMAs, in liaison with the home Agency. SMAs will be mobilised to provide technical advice and not to assume command.

3.38. A number of SMA's can also provide support to other functions such as FRSNCC , the Strategic Command Incident Room and Strategic Holding Area. These SMA's will be managed by The Chief Fire Officers Association (CFOA), who will develop, maintain and manage the competencies of such SMA's providing an enhanced level of support and advice.

3.39. Fire & Rescue service National Co-ordination and advisory framework

3.40. The purpose of the National Co-ordination and Advisory Framework (NCAF) is to enable the provision of support and advice to the Fire and Rescue Service (FRS)1 and central government during incidents that are of national significance and/or require national co-ordination. The NCAF structure has been designed to be flexible enough to adapt to the nature, scale and requirements of the incident and to support those managing it.

3.41. The Chief Fire and Rescue Adviser (CFRA) oversees and maintains responsibility for the NCAF structure. During activation, the appropriate members from the National Strategic Advisory Team (NSAT) will support the CFRA. In conjunction with CFOA, two Chief Fire Officers from each Region have been nominated to undertake the NSAT role. To assist the NSAT the National Resilience Assurance Team (NRAT) will provide the expert capability support and advice at a regional and national level. The NRAT is made up of personnel seconded from the FRSs. The NRAT will assist the DCLG Emergency Room and FRSNCC functions. It will also support silver commanders where appropriate in liaison with the affected FRS.

Response Phase Voluntary Organisations

Introduction

3.42. Voluntary organisations (the third sector) can provide valuable support for flood response operations but key to successful working is early engagement to ensure that all responders fully understand what is expected from all parties. This section deals with considerations that incident commanders may want to take in to account during the response phase when working with volunteer flood search and rescue assets.

To some degree all voluntary organisations will find it a challenge to integrate in to any flood rescue response, but Incident Commanders should try to ensure that they exploit the strengths of voluntary organisations and manage their weaknesses to maximise the opportunities offered by their involvement.

In a major incident the opportunity to develop an understanding of operational capability is limited and the role of team typing is vital to ensure that a suitable response is developed. An additional consideration for incident commanders is that some voluntary capabilities will be different from their own agencies or services and they should be seeking advice on how to most effectively use voluntary organisations by speaking directly with them

As an example, London Resilience has produced a London Voluntary Sector Capability Document (2009) (http://www.londonprepared.gov.uk/downloads/capabilities.pdf) which provides information of a number of key voluntary responders.

The Local Level Response

3.43. At local level the Local Resilience Forum is a key component of developing suitable response with a wide range of voluntary agencies that are likely to attend flooding events. It is at this level that working arrangements are established and responders can develop an understanding of capabilities and how to engage effectively. Some Category 1 responders will already have well established links with voluntary agencies, such as;

- the MCA and the RNLI
- Police and Mountain Rescue-England and Wales/Association of Low Land Search and Rescue
- Ambulance Service and the Red Cross

3.44. For these partnerships, effective capability is well proven at local level. In some cases the voluntary agencies may play a very significant role in other emergency response work and have specific capability that can enhance flood rescue response.

Major Flood Incidents Response

3.45. At regional/national response levels it can be more difficult for the Incident Commanders to effectively engage with the large number of different responding voluntary agencies - some agencies will be deployed through a National Controlling body where as some may be locally deployed during the initial response and although we would always discourage it, the Incident Commander must be aware that at a local level some agencies may even self-

deploy. In such cases, it is the Incident Commander's responsibility to resolve such issues and bring all agencies into the command structure.

3.46. There are a number of different considerations to be made when working with voluntary agencies including:

Training

3.47. Volunteer organisations are most commonly very well trained and equipped and made up of dedicated individuals. Whilst they will all be trained, skilled and equipped to carry out their core functions, it is less clear that they will be adequately skilled, trained and equipped to respond to major flood emergencies. For this reason the team typing model, underpinned by a detailed training specification is a key aspect in using volunteers.

3.48. Volunteer organisations that are declared on the national register will meet the requirements of the team typing models and therefore the adequacy of training, skills and equipment is appropriate and equivalent to those from the paid services. When using locally sourced volunteer teams however, most likely for 'local events', the incident commanders have to be mindful that the organisations may be made up of individuals that do not all meet the requirements set out in this document. In these cases the volunteer organisations should be asked to provide only individuals with the necessary training to respond to water incidents for the role they will be required to fulfil.

3.49. Different organisations have different perspectives on training, and these are tailored to the organisations own needs. Thus different approaches are seen when using similar methods in and around water. Recognising an organisation's strengths and weaknesses is therefore important in selecting the most appropriate resources for a particular task. Such knowledge is the role of the WIM or SMA who will recognise that two apparently identically typed teams from two organisations will be better suited to different roles. Incident commanders advised by WIM or SMAs should be familiar with the roles best suited to commonly deployed resources (both paid and volunteer).

Call out Procedures

3.50. Voluntary organisations that have declared flood rescue response assets will already have identified their callout procedures and these will be held by the FRSNCC. Requests for these assets should be made directly to the FRSNCC who will co-ordinate the requests and contact the relevant organisation(s).

3.51. Volunteer organisations normally operating within the locality of the flood incident may also be called through the local arrangements that are already in place. Incident commanders should make themselves aware of local volunteer capabilities and mechanisms to call upon their expertise. Local responding volunteer organisations might also request ad-hoc support from other teams or organisations that they have a close working relationship with.

3.52. We discourage any agencies from self-deploying, however in the event that this does happen, or where organisations are called by local agencies during the response, it is imperative that the Incident Command must bring them under the command structure. It should also be noted that any organisations deploying outside of this may be asked to cease activities or move. Without active engagement, it could be difficult to maintain an accurate picture of the number and types of assets deployed from the voluntary organisations unless active engagement is sought.

Duration of Deployment

3.53. For accredited flood rescue response assets their planned initial duration is already declared, however, to maintain deployed capabilities parent organisations may manage their response to ensure continuity of operations. Early discussion about phasing of relief capability will aid a national response and help planning cells.

3.54. Locally arranged teams may seek support from teams already in the flood area of operations. These teams must be encouraged to engage with the Incident Command System ensuring that they are accounted for and their work efforts can be supported. Again, it should be noted that any organisation operating outside of the command structure may be asked to withdraw.

3.55. Volunteer organisations that have a core role other than flood response (for example mountain rescue teams) will be very conscious about the depletion of resources when teams are provided out of the local area. For this reason a limited response from a larger number of teams is often more acceptable than a large response from a small number of teams. This is a consideration for the incident manager responsible for calling resources or the FRS NCC.

Specialist Capabilities

3.56. Most volunteer organisations will have an area of particular expertise which is surprisingly broad, have proven skill levels and a capability that is different to (and may exceed some) Category 1 and 2 responders.

3.57. Key to understanding what specialist capabilities are available is talking before any events, planning suitable responses and exercising the capabilities (but also having some regard to the nature of volunteers and the fact that most have to earn a living as well). This is especially important for local events that do not call upon accredited teams from the National Asset Register under the mutual aid agreements.

3.58. As examples (not an exhaustive list):

- RNLI have Flood Rescue Teams that can provide effective flood rescue operations and they have a proven VHF communications system.
- A significant number of mountain rescue teams have very close working experience with helicopters including the RAF Search and Rescue; they are helicopter operation aware and are use to operating in areas that are difficult to access. They have good multi-agency communications in many parts of the UK.
- The RSPCA maintains has a flood rescue capability to deal with animals.
- RAYNET has great expertise in assisting different agencies and organisations in establishing communication networks.
- Mountain Rescue and the Association of Lowland Search and Rescue (ALSAR) have personnel with good knowledge of formal search procedures and can work well with local Police Search Advisors.

Support to Multi-Agency Commands

3.59. It may be appropriate for Incident Commanders to request support from volunteer organisations to provide advice to multi-agency commands.

Costs and Expense

3.60. It can be an expensive business for any voluntary organisation to respond to out of area flood rescue operations – both for equipment and personnel. Any equipment lost will have to be re-purchased through fund raising or cost recovery. Personnel may well incur personal expenses, such as that associated with the loss of personal clothing/possessions or loss of earnings.

3.61. Some voluntary organisations will deploy with no charge being made to the requesting agency, they consider it as part of their organisations ethos. This is particularly true when the organisation is local to the flood incident. Any expense incurred will be covered as part of their own expense in support of the flood response. However, where the organisation is not local to the incident it may look to recover some or all of the cost of responding.

3.62. Other organisations will deploy and cover the immediate response phase with no charge or minimal charge. For extended periods of response operations then they may, usually by agreement with Gold Command, investigate cost recovery options.

3.63. Some organisations may have a costs policy already in place with any requesting agency.

3.64. Any costs incurred during response phase operations may be eligible under the Bellwin scheme – this should be communicated to volunteer organisations if applicable.

Welfare

3.65. Arrangements for welfare should be integrated in to arrangements for other attending responders. Early communication of the expected duration of deployment and on-site welfare arrangements will help to ensure that the impact on resources is minimised by teams being prepared in advanced.

Health and Safety Considerations

3.66. Category 1 responders may have concerns about voluntary organisations and how they will work together from a health and safety aspect. Although some health and safety law may not apply to a voluntary organisation there are many aspects that are considered as good practice and all participants have a mutual duty of care. A difficulty for many responders can occur when operating practices are different from what they expected and there is a limited understanding of the principles being applied. This will not occur where voluntary organisations are engaged with the standards in this Flood Rescue Concept of Operations and have registered for the National Asset Register.

3.67. Ideally, responding organisations should engage early to develop a mutual understanding of how health and safety considerations are applied. The general principle of reducing risks to as low as is reasonably practical should be followed by all responding organisations. This can usually be achieved by:

- Identifying hazards and risks
- Putting in place control measures to manage the risks
- Reviewing the impact of the controls on the risks

3.68. The principles of risk identification, control and mitigation in a water environment will be well understood by all those meeting the Team Typing requirements and the training guidelines that underpin them. Accordingly, all of the declared assets should understand that they will be operating within a risk managed environment and be prepared for the constraints that this might bring. A key step in ensuring adequate Health and Safety management of those from the voluntary sector is to communicate the overarching plan so that they can understand the framework within which they will be expected to operate. If any issues do arise then these should be discussed at the earliest opportunity to resolve them and a way ahead identified.

Conclusions

3.69. The voluntary sector is a vital part of flood response. Early engagement by all participants is the best means to ensure an efficient operational capability. Initially this leads from local arrangements via the LRFs and local operational arrangements, but when scaled up to a national level becomes more of a challenge. Training, talking, planning and exercise will help to develop the understanding of what voluntary organisations can do for any incident commander.

Team Typing: Overview

3.70. An audit and assessment has been made of the current capabilities in National Flood Rescue response and gaps in capability have been identified. Effective pre-planning will identify the potential scale of flooding and therefore the specific type of flood assets required. All requests for flood rescue assets should be in accordance with the following capabilities.

3.71. As part of the audit of capabilities, common standards have been applied for the accreditation of assets and supporting personnel. The register of assets and capabilities uses the concept of “team types” to accredit assets available for a national response.

3.72. Table 1 below provides a team type capability overview. Annex G describes the building blocks in terms of equipment, personnel and training standards necessary to meet the respective capability requirements.

TABLE 1 - TEAM TYPE CAPABILITY OVERVIEW

Team Type		Capability
A	**Advanced Water Rescue Boat Team**	Not currently in use/within scope of the FRCO.
B	**Water Rescue Boat Team**	Technical water rescue Search operations within the water environment. Power boat rescue operations In water operations Flood response
C	**Water Rescue Technician Team**	Technical water rescue Search operations within the water environment. In water operations Non powered boat operations Flood response
D	**Water Rescue First Responder Team**	Support operations Limited in water operations Bank based safety Flood response
E	**Water Awareness Team**	Support operations Bank based safety Logistical support Pumping operations
F	Under Review	(Under review – considering land based search capabilities and logistical support capabilities)
	Water Incident Manager	A Water Incident Manager will be responsible for commanding or advising at a local water incident at tactical or operational level.., including co-ordination, health and safety liaison with Team Leaders regarding tasking and welfare and liaison with Multi Agency partners. The Water Incident Manager will generally operate at either Bronze or Silver levels although may be asked to advise at Strategic levels for local incidents where National Assets are not required

	Subject Matter Advisor	The SMA will provide detailed tactical capability-relevant advice to the Incident Commander at Silver and/or Bronze levels at incidents requiring National assets. A number of SMA's can also provide support to other functions such as FRSNCC, the Strategic Command Incident Room and Strategic Holding Area. These SMA's will be managed by The Chief Fire Officers Association (CFOA), who will develop, maintain and manage the competencies of such SMA's providing an enhanced level of support and advice

Further information on Team Type Standards can be found at **Annex G.**

Training Standards

3.73. The following modules define the appropriate training for water related activities, the details of which can be found in **Annex E**;

Module 1 Water Awareness

General water safety awareness training and basic land based rescue techniques

Module 2 Water First Responder

To work safely near and in water using land based and wading techniques

Module 3 Water Rescue Technician

Specialist rescue operation

Module 4 Water Rescue Boat Operator

Rescue boat operation

Module 5 Water Incident Management

Water related operational and tactical incident command relating to local incidents

Module 6 Subject Matter Advisor

To provide tactical, strategic and logistical advice at major or wide-spread flooding incidents requiring National assets

3.74. This guidance has been developed by specialist personnel and is the minimum requirement for each identified level of competence. The modules can be used for initial training and as a basis for ongoing sustainability. They are not designed to determine operational response or PPE/rescue equipment requirements. Neither is there a hierarchy of training levels, each module is designed to meet the requirements of that particular identified risk, although some competences are a pre-requisite for specialist training e.g. Module 3 Water Rescue Technician is needed before undertaking training for Module 4 Water Rescue Boat Operator.

3.75. The guidance on refreshing training is provided to ensure competence is maintained and refreshed on a regular basis.

3.76. Individual Agencies should assess the water related risk within their area and decide clearly what activity is to be undertaken. The training modules permit Agencies to specify a level of competence to allow staff to operate within the identified risk areas. The training shall be conducted in a safe and controlled environment and should be matched to the risk identified by the Agency. Learning outcomes should be appropriate to water conditions identified.

3.77. The modules also provide training guidance for Agencies that wish to declare a water rescue resource in line with national team typing.

3.78. Agencies can use the modules as a basis for an outcome based specification for training provision by an external supplier.

3.79. In addition, this guidance forms the basis of Skills for Justice Vocational Qualifications (VQs). These VQs will be available for Agencies to deliver to their staff as part of a competency based system (http://www.skillsforjustice.com). There is a VQ for each module and guidance on trainer qualifications to deliver the VQs.

3.80. The modules contained within **Annex E** provide a national framework of water safety and rescue training for all Agencies who may respond to a water-based incident.

3.81. It is strongly recommended that training be provided from either a creditable source such as the framework of training providers held by The Consortium for Purchasing and Distribution Ltd at FireBuy or appropriately trained and qualified internal staff.

Credentialing of individual competency and skills for Flood Rescue

3.82. The credentialing system is designed to be used in partnership with Team Typing, as detailed within this document. The process of validating assets will be established as part of the long term management of the National Asset Register.

3.83. This system gives organisations a list of criteria to follow and achieve in order to credential their individual members who may then be part of a Typed Team. The system will ensure all responders and managers who respond to a major flood emergency will be appropriately qualified, medically fit, certified, personally equipped and approved to carry out the role they are tasked to. When personnel are mobilised to a major flood event they will respond as part of a Typed Team; the team will be tasked according to their capability and therefore the personnel within the team must be appropriately qualified and certified.

3.84. To ensure teams have the correctly qualified and equipped personnel, all teams will be checked when booking in at the Strategic Holding Area. All personnel will be credentialed, including team members, team leaders and managers. All Agencies accredited to provide typed teams to a major flood emergency must ensure that their personnel conform to the credentialing standards. The required standards for the following roles are detailed in **Annex F**.

Definitions (link to documents):
Water Rescue First Responder
Water Rescue First Responder Team Leader
Water Rescue Technician
Water Rescue Technician Team Leader
Water Rescue Boat Operator
Water Rescue Boat Operator Team Leader
Water Incident Manager
Subject matter Advisor

Annex A – Emergency plan activation triggers/ Information Sources

1. Links with National Flood Forecasting Centre

1.1 The Flood Forecasting Centre (FFC) provides the following services to emergency responders in England and Wales:

Extreme Rainfall Alert (ERA) Service
Flood Guidance Statement
Web Service

1.2 These services are designed for Category 1 and 2 responders to assist them in planning and preparing for flooding events.

1.3 They are the first of a number of improved flood warning services from the FFC that will be made available to the emergency response community over the next few years.

1.4 The services are based on the most advanced forecasting techniques available and form a sound platform for the future.

1.5 The FFC also provides a number of weather services to the Environment Agency, including Daily Weather Forecasts, Heavy Rainfall and Strong Wind Warnings as well as the UK Coastal Monitoring and Forecasting Service (UKCMF).

1.6 **To sign up for any of the services provided by the FFC, please use the following link:**http://www.ffc-environment-agency.metoffice.gov.uk/services/fgs_request.html

2. Weather warnings and advice

2.1 The Environment Agency's online Flood Warning Service shows the current Flood Warning situation throughout England and Wales. It is automatically updated every 15 minutes, 24 hours a day, and 7 days a week. The service can be reached by clicking on http://www.environment-agency.gov.uk/homeandleisure/floods/31618.aspx.

2.2 To register for the Environment Agency's Flood Warnings Direct, please follow the link: https://fwd.environment-agency.gov.uk/app/olr/home

Annex B - Guidance for Accessing Specialist Flood Rescue Mutual Aid

1. Introduction

1.1 Flooding and subsequent flood rescue operations can pose significant risks for members of the public and rescuers alike. These risks can be controlled through the use of competent rescuers who have the training, rescue and personal protective equipment to enable them to work safely in the flood environment.

1.2 Through the Flood Rescue National Enhancement Project, Government has put in place processes and structures to improve flood rescue capability across England and Wales so that a comprehensive emergency response can be deployed and co-ordinated between all flood rescue responders, including public, private and voluntary organisations.

1.3 The 'National Asset Register' is a 'live' document that records known flood rescue resources that could be called upon to support local resources in responding to major or wide area flood events. The National Asset Register contains contact details of competent flood rescue teams from both statutory agencies and the voluntary sector. It is maintained by the Fire & Rescue Service National Coordination Centre on behalf of Defra. **To avoid any confusion around the current status of teams, and to prevent specialist teams receiving duplicated requests for assistance, the following arrangements have been put in place to manage mutual aid for flood rescue.**

2. Responses to major or wide area flooding events

3.1 Defining a major or wide area flood event

3.1.1 For the purpose of flood rescue, a major or wide-area event may be defined as any flood event requiring mutual aid for specialist flood rescue teams from outside the Local Resilience Forum (LRF) area or an event requiring extensive flood rescue operations simultaneously impacting more than one LRF area. During major or wide-area flood events local commanders requesting mutual aid should bear in mind that the specialist teams from neighbouring areas and the voluntary sector that they might normally call upon may operate across more than one LRF area and be deployed elsewhere.

3.1.2 Whilst flash flooding can occur with little warning, in many circumstances early warnings of a major flood event are provided (for example by flood guidance statements). This enables the establishment of robust command and control frameworks before the event impacts the local area and provides an opportunity for specialist teams to be requested early and pre-deployed to the area. Effective use of early warning has a number of significant operational advantages, reducing risk for communities and responders alike.

3.1.3 **To ensure best use is made of available specialist flood rescue assets during a major or wide area event, national co-ordination arrangements have been established through the Flood Rescue Concept of Operations**. These arrangements ensure that requests for mutual aid can be considered strategically,

taking into account current and forecasted flood conditions across England and Wales, and ensuring that any flood rescue teams dispatched have the necessary skills and experience to operate in the environment expected.

3.2 Reporting a Major / Wide Area Event and Requesting Mutual Aid

3.2.1 Government has established new national arrangements for the coordination of multi-agency flood rescue assets, building on experience gained in responding to the 2007 floods. These arrangements are outlined below:

3.2.2 The emergency response authority affected by the flood identifies risk of a flood event requiring additional specialist flood rescue assets

3.2.3 The Impacted Authority requests assistance via the Fire and Rescue Service National Coordination Centre (FRSNCC) in London. For validation purposes, the call to the FRSNCC must be made by a Fire Control Room.

Fire and Rescue Service National Coordination Centre	
Primary contact number	**020 8536 5900**
Secondary contact number	020 8542 9254
Fax	020 8536 5953
Email	FRSNCC@london-fire.gov.uk

3.2.4 The FRSNCC verifies the identity of the caller as a representative of an Impacted Authority and records the details of the mutual aid request (as outlined below)

3.2.5 The FRSNCC will decide the most appropriate course of action, including assembling typed teams from the National Asset Register to meet the request for assistance, having liaised as appropriate with the:

i. Impacted Authority
ii. Lead Government Department (which is Defra)
iii. RCCC (Regional Civil Contingencies Committee) (if activated)
iv. Chief Fire & Rescue Adviser Duty Officer and / or DCLG Emergency Room (if established), NRAT Advisor and SMA's.

3.2.6 All flood rescue assets on the Register will be requested by FRSNCC who will contact flood rescue responder organisations via their agreed contact for mobilisation requests (for FRS flood rescue assets this is likely to be individual Fire & Rescue Services; for non-FRS flood rescue responders this is likely to be the organisation's control room).

3.2.7 The FRSNCC will maintain a national overview of all flood rescue assets on the National Asset Register and will provide a function 24/7 and through allocated SMA's supporting NRAT Advisors will provide any strategic advice that might be necessary.

3.2.8 FRSNCC and SMA's supporting NRAT Advisors will maintain a forward looking strategic overview of likely rescue requirements in consultation with the Flood

Forecasting Centre and any other strategic coordination functions that have been established, e.g. Lead Government Department (Defra).

3.2.9 When formally "stood down", the FRSNCC will communicate with all deployed teams on the National Asset Register.

3. Responses to minor or localised flooding events

3.1 Rescue responses to minor or localised flood events will continue to be managed at a local level by the Operational (Bronze) and Tactical (Silver) Coordinating Groups, usually under direction of the police. The decision to deploy specialist flood rescue teams rests with the local commanders and it is their responsibility to assure themselves that any teams they deploy are competent to operate safely in the flood environment. However, when considering whether to deploy external resources, it can be difficult for local commanders to judge the competence and capabilities of the flood rescue teams offering assistance.

3.2 Whilst it is a matter for the local commanders to decide whether to deploy rescue teams who are not on the National Asset Register, reference to the Register can provide some assurance that the teams to be deployed are competent to work in the flood environment.

3.3 If insufficient Local Resilience Forum based resources exist then additional resources can still be requested via FRSNCC.

4. Information required from Impacted (Requesting) Authorities

4.1 Impacted Authorities who request assistance should contact the FRSNCC passing the following information as a minimum:

- Location of incident or expected time/location of impact
- Name and rank of incident commander
- Nature of incident and any specific hazards, i.e. known chemical contamination
- Prevailing weather and (where known) water conditions
- Estimated number of persons requiring rescue
- Local resources already in attendance/available
- Estimate of mutual aid resources required (refer to the Flood Rescue of Concept of Operations for details of the various typed teams available)
- Location (grid reference / name and address) of rendezvous point (Or strategic holding area), including local access issues created by the flooding.

5. Command and Control

5.1 These arrangements for national co-ordination of flood rescue teams providing mutual aid *do not* impact established command and co-ordination arrangements for resolving incidents in impacted areas. Once deployed to an impacted area, specialist teams undertaking water rescue will always come under the direct command/control of the

requesting Authority through existing Strategic, Tactical and Operational ("Gold, Silver and Bronze") incident management systems.

5.2 Where impacted authorities have requested external rescue teams they should nominate a Rendezvous Point (RVP) for all incoming teams. From that RVP, specialist teams can be briefed, assigned a local guide/Liaison Officer and allocated tasks according to their capability. Where major operations are expected a Strategic Holding Area (SHA) may be established in or near to an impacted area. The SHA can be nominated as the RVP for all incoming specialist flood rescue teams.

5.3 Where an SHA/RVP has been established, specialist flood rescue teams will be co-ordinated by the SHA/RVP Commander until released and deployed to the impacted area, when they come under the direct command and control of the appointed local commanders. Once their immediate tasks have been completed, specialist flood rescue teams can be redeployed or returned to the SHA/RVP for rest, recuperation.

5.4 All incoming specialist flood rescue teams must have designated team leaders who will manage their own team's safety and liaise with local Incident Commanders. The team must also have a designated team manager who will be responsible for the support and welfare of the team, and effective liaison with incident command. Should an agency commit more than one team to the incident, then it would be acceptable for the team manager to oversee the welfare and liaison for multiple teams.

5.5 Incoming teams will need to be assigned a local guide/Liaison Officer who has sufficient knowledge of the local area and command structure to ensure the team is fully integrated into local command and communications arrangements. These Liaison Officers need not be flood rescue specialists themselves, but should have the experience and authority necessary to operate effectively.

5.6 Experience from 2007 identified the value of establishing advisors who are specialists in boat/water rescue and can provide assistance directly to Silver or Gold Commanders or provide support by managing flood rescue operations as a specialist sector commander within the incident command system. The deployment of NRAT Advisors and SMAs will be coordinated by the FRSNCC as part of the arrangements outlined above.

6. Welfare

6.1 An Impacted Authority shall ensure, so far as reasonably practicable, the health and safety of staff from an assisting organisation in the same satisfactory manner as those from the Impacted Authority e.g. staff are only to be placed in situations for which they are properly trained and equipped. This is notwithstanding the requirement for the team leader to ensure the health and safety of their team (appendix G).

6.2 An Impacted Authority shall ensure that personnel responding to mutual aid requests have their welfare needs met in the same satisfactory manner as those from the Impacted Authority (e.g. securing adequate provision of food, drink and where necessary, accommodation.) Again, not withstanding the requirement of the team manager to ensure adequate support and welfare (appendix G).

7. Air Asset Support for Flood Rescue Operations

7.1 For sake of clarity, all of the above refers to land/water based specialist rescue teams only. During a major flood event, air assets will also form an invaluable part of the overall rescue effort. The protocol for requesting Military/Coastguard Search & Rescue (SAR) Helicopters for emergency assistance is as follows:

8. General

8.1 'Military Aid to Civil Authorities' sets out the conditions under which military support is provided in response to a 'disruptive challenges' such as flooding (Operations in the UK: The Defence Contribution to Resilience, September 2007). The Aeronautical Rescue Co-ordination Centre (ARCC) based at RAF Kinloss will respond to all requests from the emergency services for helicopter assistance where lives are at risk. The potential contribution offered by air assets to a flooding event is considerable. The ARCC provides a common tasking procedure for all UK SAR helicopters.

9. Resources

9.1 ARCC has the following resources available: RAF Sea King helicopters with winching, NHS qualified and equipped paramedic, infra-red and night vision goggles (NVG) search capability. Royal Navy Sea King helicopters with winching, diver, medic, infra-red and NVG search capability. Coastguard helicopters (AW139 and S92) have very similar capabilities.

9.2 ARCC also coordinates the operations of RAF Mountain Rescue Teams which are available at one hour's notice. The teams are fully equipped with their own vehicles; communications (including Satcom) and NHS qualified and equipped paramedics.

10. Requests for Assistance

10.1 In the event of an operational incident where the Incident commander believes the use of air assets may be appropriate, they should contact the Duty Officer at the ARCC, with the following information:

- Location of incident (Grid Reference)
- Description of incident
- Nature of tasking (e.g. rescue, reconnaissance, transport)
- Number and position of casualties
- Hazards (Overhead power lines etc)
- Weather/environmental conditions
- Other Resources on scene

ARCC Contact Details
Emergency 01343 836036

10.2 Staff at the ARCC are highly professional and experienced and will be able to provide valuable advice and guidance on whether or not air response is appropriate in the circumstances. If in any doubt, contact the ARCC, all requests for emergency assistance will be considered.

11. Costs

11.1 No costs are charged to the emergency service in situations where life is at risk. However, for other purposes costs may be charged.

12. Further Information

12.1 Search and Rescue Framework for the United Kingdom of Great Britain and Northern Ireland (August 2008) http://www.mcga.gov.uk/c4mca/uksar.pdf

12.2 Operations in the UK: The Defence Contribution to Resilience. Joint Doctrine Publication 02, 2nd Edition. (September 2007) http://www.cabinetoffice.gov.uk/media/132712/defenceconrtibution1.pdf

Annex C – Memorandum of Understanding between DEFRA and Flood Rescue Agencies

National Flood Rescue Asset Register: Memorandum of Understanding and Guidance

Contents

1. Introduction
2. Exclusions
3. National Asset Register
4. Freedom of Information Act 2000 (FOIA)
5. FRS National Coordination Centre and the National Asset Register
6. Memorandum of Understanding

1. Introduction

1.1 In September 2009 Defra issued the initial national flood rescue questionnaire which was completed by flood rescue responders. The Flood Rescue National Enhancement Project (FRNEP) team reviewed the submission against the FRCO team typing standards, provided a summary of its findings, and all appropriate assets were recorded.

1.2 In accordance with the FRNEP objectives and as suggested in the initial asset questionnaire, a detailed national flood rescue asset register needed to be established and utilised in the event of a national flood event. Agencies with appropriate teams were put forward onto this National Asset Register, declaring their assets availability and providing assurance that they are able to maintain their respective assets and have in place suitable management and business provision for items such as insurance, finances etc and also a robust approach to the maintenance of training, standards and equipment.

1.3 This document sets out the memorandum of understanding (MOU), between the declared flood rescue agency and Defra for future deployments of assets from the National Asset Register. This document **will** constitute a broad agreement to release assets nationally in accordance with the this Flood Rescue Concept of Operations (FRCO).

1.4 Future standards for monitoring and evaluating assets will be developed in the near future, however, it is envisaged that an element of self and peer assessment may be considered alongside a small central management team. Agencies are expected to maintain their respective teams in accordance with the FRCO standards, paying particular attention to the training, equipment and team typing documents which have been consulted upon and agreed. Further information will be circulated to clarify this aspect.

2. Exclusions

2.1 The FRCO concerns only flood rescue – i.e. the framework, standards, equipment and generic operational processes required to manage and effect rescues from flood water.

2.2 Requirements arising from the need to effect rescues from 'conventional' water-borne settings (such as ice, mud, rivers, lakes and the sea) are excluded, as are rescues from water-borne fire scenarios.

2.3 The FRCO is mandated to provide assets for England and Wales only. However, close involvement will be maintained with the Scottish Government and the Northern Ireland Assembly throughout in order to enable consistent and complementary services to be developed across administrative boundaries and to ensure the FRCO can operate across the UK.

2.4 This MoU does not constitute any form of financial agreement to fund the deployment of assets. The existing Fire and Rescue Circular number 42-2006, National Mutual Aid Protocol for Serious Incidents, dated 20 July 2006 details the scope for recovering costs for serious incidents.

2.5 The scope of the FRCO does not include the establishment of International Mutual Aid arrangements as this falls within the remit of the Department for International Development.

3. National Asset Register

3.1 To become a part of the National Asset Register for flood rescue, please contact flood.rescue@defra.gsi.gov.uk.

3.2 The information you need to provide may be deemed sensitive. Data will be handled and stored in accordance with the Data Protection Act 1998 and the information received by Defra will not be divulged to other organisations. Defra however is subject to the Freedom of Information Act 2000, which gives the public a general right of access to all types of recorded information held by public authorities, subject to certain exemptions. In order to minimize unnecessary exposure to a Freedom of Information Act request, you will not be required to provide full supporting documents for each question, for example, accounts, certificates, statements or policies. However, we may ask to sight these documents at a later stage if deemed necessary and agreeable to the organisation. The FRCO is required to provide assurance to the public, requesting authorities and Incident Commanders that rescue teams responding to mutual aid requests are capable of carrying out the tasks safely and effectively. In order to provide this assurance, the FRCO will rely upon organisations having the appropriate policies and standards available and may, if required, be called to evidence them.

The necessary procedure for management and tracking of the resources on the National Asset Register is set out in section 5, the FRS National Coordination Centre.

3.3 Following agreement with Defra that your organisation meets the standards as defined in this document, an MOU must be completed, containing details of the assets declared and the organisation.

3.4 The MoU must be returned to flood.rescue@defra.gsi.gov.uk. Any questions regarding the National Asset Register should also be sent to this address.

4. Freedom of Information Act 2000 (FOIA)

4.1 Defra as a government department is subject to the provisions of the FOIA. All information submitted to Defra may need to be disclosed in response to a request under the FOIA.

This means that, amongst other things, the following may be subject to disclosure unless an exemption applies:

- information regarding any response to this questionnaire submitted to us;
- correspondence and other papers generated in any dealings within this project.

4.2 If you consider any of the information included within your response to this questionnaire should not be available for disclosure, please:

- identify it specifically; and
- explain the grounds for exemption from disclosure and the time period applicable to that sensitivity.

  For guidance on this issue see http://www.ico.gov.uk/eventual.aspx?id=9183

5. Fire and Rescue Service National Coordination Centre

5.1. Background

5.1.1. A key part of the Government's programme of action and investment following 9/11 was the development of the New Dimension programme which enhanced the capability of the fire and rescue service to respond to disruptive challenges. Over £500 million has been invested in delivering the equipment, training, procedures and on-going support mechanisms required to enable the Fire and Rescue Service (FRS) to provide an efficient, effective and sustained response to major incidents in England.

5.1.2 To ensure an effective response to such incidents the government agreed to fund the development and operation of the Fire and Rescue Service National Co-ordination Centre (FRSNCC) to co-ordinate the mobilisation and deployment of New Dimension and associated conventional FRS resources in response to such incidents. Action to establish the FRSNCC has since been led by West Yorkshire Fire and Rescue Authority and the centre achieved full operational status at the end of May 2007. From the 1st April 2012 the centre will be located in the London Fire Brigade Control Room.

5.1.3 Following the development of a National Asset Register for flood rescue assets as part of the Flood Rescue National Enhancement Project, the FRSNCC have taken on the management, tracking and coordination of these assets, and respond to requests for mutual aid during flooding emergencies.

5.2.0 Purpose

5.2.1 This document provides guidance to flood rescue responders on the role of the FRSNCC and how it can be contacted. It also describes the type of information required from individual responders and the method and frequency with which this should be reported. Agreement to these methods forms an important part of the MOU between flood rescue responders and Defra.

5.3.0 The Role of the FRSNCC

5.3.1 The FRSNCC's principal role is to co-ordinate the national and cross regional mobilisation and deployment of required assets in a major incident.

5.3.2 To enable it to undertake this role and maintain a database of resource availability, FRSNCC will monitor and track resources, using information provided by the responders. Information held on the database will include the following: -

- National Call Sign;
- Type;
- Identifier (Registration Number / Fleet Number);
- Telephone Number;
- Location;
- Availability;
- Reason for status change.

5.4.0 Initial Reporting

5.4.1 Immediately following acceptance of this MOU between the flood rescue responder and Defra to be part of the National Flood Response Asset Register, the responder must provide the FRSNCC with the following information:

• Resource Description;
• Vehicle Registration or Module designation;
• Location.

5.4.2 The FRSNCC will issue the responder with a National call sign.

5.4.3 When the resource is mobilised / deployed, the responder should ensure that this is reported to the FRSNCC.

5.5.0 Availability Reporting

5.5.1 Information held by the FRSNCC on the availability and location of resources is dependent on the receipt of prompt and accurate advice from the responder organisation. If an asset is unavailable, the responsible flood rescue organisation must contact the FRSNCC to declare this within 4 hours. This can be in the form of an email to FRSNCC@london-fire.gov.uk or by using the contact numbers, as below.

5.5.2 Responders should also inform the FRSNCC when there is a change in location of any resources or any change of contact numbers of that resource.

5.6. Information

5.6.1 All information relating to the FRSNCC and the National Asset Register may be shared between the emergency services on a need to know basis.

5.7. Contact Details

5.7.1 The FRSNCC can be contacted using the following numbers: -
Primary Contact Number: 020 8536 5900
Secondary number: 020 8542 9254
Fax: 020 8536 5953
E-mail: FRSNCC@london-fire.gov.uk

Memorandum of Understanding between Defra and Flood Rescue Agencies

1. Executive Summary

This Memorandum of Understanding (MoU) represents the agreement between Defra and the respective Flood Rescue Agency to declare flood rescue assets on the national flood rescue asset register. It also represents an agreement that flood rescue assets will, ordinarily, be approved for deployment if requested in accordance with the Flood Rescue Concept of Operations (FRCO) which is due to be contained within the National Flood Emergencies Framework (NFEF). It also sets out the necessary requirements regarding the management and tracking of assets on the National Asset Register by FRSNCC.

This MoU aims to complement any existing local policies, practices and procedures between existing services in respect of mutual aid or cross boundary agreements.

2. Geographical area.

This MOU will apply to England and Wales however, close involvement will be maintained with the Scottish Government and the Northern Ireland Assembly in order to enable consistent and complementary services to be developed across administrative boundaries and to ensure the FRCO can operate across the UK.

3. Definitions and abbreviations

FRNEP	Flood Rescue National Enhancement project
FRCO	Flood Rescue Concept of Operations
MoU	Memorandum of Understanding
NFEF	National Flood Emergency Framework

4. Context for Use

The following is the operational context for when this MoU will apply:

Where:

1. There is an existing incident of flooding, the scale of which cannot be dealt with locally and a request for assistance is received centrally.
2. There is a predicted incident of flooding that requires pre-deployment to provide preparedness for it.

5. Invocation and Management

For the purposes of this agreement, once the MoU is agreed, future incident requests will be authorised in accordance with the FRCO. Existing Strategic Command Group procedures will be followed as necessary and the FRCO should complement existing procedures.

6. Review Period.

This MoU will be reviewed in 2011 following Exercise Watermark and the subsequent feedback. Thereafter a biennial review is expected.

7. Conditions of the MOU

As part of this MOU, the following criteria must be met and further information may be requested at a future date:

7.1 Financial assurance

- Your organisation has met the terms of its banking facilities and loan agreements (if any) during the past year.
- Your organisation has met all its obligations to pay its creditors and staff during the past year.
- If required, you will be able to provide a copy of your most recent audited accounts.

7.2 Insurance and Litigation

- Your company has appropriate levels of insurance, as set out below:

  Professional Indemnity – £2 million

  Employer's Liability - £5 million

  Public Liability - £10 million

If your organisation's indemnity and liability insurances are below these levels, please indicate levels held. Documentary proof of insurance may be required.

7.3 Health and Safety

- Your organisation is fully compliant with health and safety legislation and can produce a written health and safety policy statement.
- Your organisation has evidence of standard operating procedures or similar, documenting methods of work.

7.4 Quality assurance

- Your organisation has a robust method of measuring and recording quality assurance of management, equipment, training, policies etc.
- Your organisation has means of ensuring ongoing compliance with the FRCO flood rescue team typing standards.

7.5 Maintenance of training and equipment?

- Your organisation has effective means of routine preventative maintenance for all flood rescue equipment including PPE, boats, vehicles etc.
- Your organisation has effective means of recording individual training and competence.

8. Details of organisation

- Name
- Address
- Contact numbers
- E-mail details
- Website address
- Charity Number if applicable
- Main purpose of business

9. Mobilisation details

- Contact number
- Contact name/position
- Authority process – if applicable

10. Declared Assets

Following review of the questionnaire feedback, I confirm that the following number of typed team assets, that all meet the required standards as set out in the Flood Rescue Concept of Operations will be available on the National Asset Register:

Team Description	Team Type	No.
Water Rescue Boat Team	Type B	
Water Rescue Technician Team	Type C	
Water Rescue First Responder Team	Type D	
Water Awareness Team	Type E	
Water Incident Manager		
Subject matter Advisor		

11. Declaration

I declare that to the best of my knowledge the answers submitted in this questionnaire (and any supporting documents) are correct. I understand that the information will be used in accordance with the FRCO.

Signatures

For Defra

Signature…… **Date**……

Print Name …….

For ……..

Signature…….. **Date**……

Print Name ……..

Annex D – Generic standard operating procedures

3. PRE-DEPLOYMENT DOCUMENTATION

3.1 Upon mobilisation, all flood rescue assets should produce a pre-prepared team data sheet in accordance with 3.3. This should be presented to the Incident Command or Strategic Holding Area (SHA) command upon arrival before engaging in any rescue activity.

3.2 Team leaders are responsible for ensuring that Operational Command is notified of any changes to the original team or equipment details.

3.3 Flood Rescue Team Data

Pre-deployment Sheet

Organisation……

Team Type……. Call Sign …….

Means of Comms Available……

Team Manager…….……... Contact No……...……

Team Leader …….. Contact No…...……

Team members……....

……....

…….

…….

……

……

……...

Vehicle Reg No…….. Craft Type/HP……

Vehicle Key holder/location/contact…….…….....

Driving time to scene……. Last rest period……

Notes……
……..……
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4. INCIDENT / STRATEGIC HOLDING AREA ROUTINE

4.1 Flood Rescue Assets will be required to comply with the Incident or SHA command structure. Upon arrival each asset will be checked in and directed as appropriate to the incident.

4.2 Team leaders should verify the following details prior to tasking:

4.2.1 Communications detail – confirmation of means of comms, call signs, comms routine (see communications section) and emergency contact numbers. Operations Normal periods should be confirmed and commenced with the Incident Command prior to each tasking (see below).

4.2.2 Logistics, in terms of breaks, meals, etc; will be dependent upon distances driven to the scene and urgency of rescue needs. Throughout the incident team leaders should ensure that their respective teams are suitably catered for in terms of meals, refreshments and rest. It will be the responsibility of the donor agency to ensure that crews are rotated and or relieved appropriately.

4.2.3 Availability of mapping or on-scene detail: Consideration should be given to local flood related hazards, blocked roads, key travel routes, natural watercourses and the location of appropriate or known launch sites. Casualty landing sites and/or the location of casualty reception centres should be identified if known. Team leaders should also consider the local topography and identify likely high risk areas. A clear search and rescue plan will be adopted.

5. INCIDENT COMMAND PROTOCOLS

5.3 General considerations for Incident Commanders.

5.3.1 Suitable numbers of staff will be required to manage the SHA and provide liaison between the arriving teams. These staff should be organised early in order to be prepared to receive assets.

5.3.2 A dedicated line of communication must be maintained with the appropriate tasking authority and a member of staff allocated to manage calls and record data. Similarly a line of communication must be maintained with Fire & Rescue Service National Coordination Centre (FRSNCC) to monitor the despatch and travel details of flood rescue assets.

5.3.3 Radios should be sourced for distribution to flood rescue assets as required.

5.3.4 Every effort should be made to source mapping data including electronic and conventional paper maps. Local flood related hazards, blocked roads, key travel routes, natural watercourses and appropriate or known launch sites should all be identified if possible to assist teams that are not familiar with the terrain. Casualty landing sites and/or the location of reception centres should also be established from the appropriate authority and identified to the team leaders. A briefing site should be established with appropriate briefing data available.

5.3.5 Welfare considerations should be a high priority and suitable provision maintained for all teams including meals and refreshments according to the circumstances, sleeping arrangements for protracted incidents and suitable rest areas. A record should be maintained to ensure that all teams are adequately catered for and rested. Team leaders are responsible for maintaining their respective teams and should request appropriate welfare breaks.

5.3.6 Fuel provision for vehicles and powered craft should be considered and suitable sites established or locations identified to team leaders.

5.3.7 The command board must be maintained at all times. The data should be recorded in such a way that it is retained for audit or de-brief purposes post-operation. The Ops Normal routine detailed in the Communications section must be incorporated within the command board to ensure the safety of all teams undertaking operations. Tactical Command will establish a SAR cell which will include an SMA. .

5.3.8 Provision must be made to ensure that suitable and timely reliefs for the command team (IC & assisting staff) and SHA personnel are arranged.

5.4 Actions to be considered by Incident Command (IC) upon receipt of a flood rescue asset.

5.4.1 Incident Commanders should ensure that a suitable Strategic Holding Area (SHA) is prepared.

5.4.2 Upon arrival the IC should ensure that team data sheets are collated and record all assets on a command board.

5.4.3 Communications protocols and call signs should be established in accordance with the instructions in the communications section and a record maintained within the command board. Call signs should be agreed with all assets and radios issued if not already held.

5.4.4. The IC should nominate a specific site for each team within the holding area and establish a means of contact prior to tasking. Different team types should be recognised and sited accordingly for immediate deployment. Consideration must be given to closely matching team types and their respective equipment, e.g. similar powered boat types paired for night operations – poorly paired boats may cause significant problems in terms of launch sites, operating depths and speed.

5.4.5 Teams should be encouraged to seek refreshments and meals as available and rest if appropriate prior to tasking.

6. TACTICAL OPERATIONS

6.1 Team and individual identification

6.1.1 To enable Tactical Commanders, Tasking Officers and other teams to determine capability on the Incident it is important that all teams and personnel are identifiable. At a fire scenario crews wear fire-fighting PPE and rank markings to facilitate this; however, at a flood scenario, where crews are from a multi agency background and wear a variety of colours of PPE, it is essential that there is standardisation to enable identification.

6.1.2 In order to ensure teams and individuals are correctly tasked and recognised on the incident according to their capability, a system of identification using helmet colours is to be used.

Role	Helmet colour
Team Leader	White helmet
Rescue Boat Operator and Water Rescue Technician	Red Helmet
Water Rescue First Responder	Yellow Helmet

For example a Type C Technician Team will wear red helmets and the team leader, who will also be a Water Rescue Technician, will wear a white helmet.

6.2 Night operations

6.2.1 During night and poor visibility, teams should be identifiable and locatable using either chemical lightsticks or battery-operated equivalent. This light should be fixed to the helmet, firstly to avoid the light being a distraction should it be wrongly attached to the Rescue Buoyancy Aid and secondly should the wearer enter the water the light will always be visible as the head is above water and the Rescue Buoyancy Aid is below the water line.

6.2.2 Ropes used as rescue throw lines should have the bag marked with a green light so this is more easily located if deployed into the water.

6.2.3 Personnel and equipment will be identifiable as follows:

Role	Light colour
Rescue Boat Operator and Water Rescue Technician	Red light
Water Rescue First Responder	Yellow light
Rescue Throw ropes	Green light

6.2.4 Team leaders should wear the appropriate colour light to match their team skills, i.e. a Technician team leader should wear a red light and a first responder team leader should wear a yellow light. This is to avoid confusion with personnel wearing headlamps and torches which are predominantly white.

6.2.5 All personnel will have available to them a headlamp to assist with personal task lighting.

6.2.6 In addition, each team will be equipped with search lighting to enable the team to illuminate an area sufficient for carrying out searches and navigation of both urban and rural areas on foot or by boat.

6.2.7 Consideration should also be given to the use of thermal image cameras to assist with navigation and searches. The use of night vision devices may also assist with night operations.

6.2.8 Care must be given to the use of lighting when working with helicopters. The aircrew could be using night vision goggles which will be adversely affected by powerful search lights shining up into the sky directly at the helicopter.

6.3 Casualty reception

6.3.1 At flood operations where persons are being rescued from either the water or properties, it important that a casualty landing area is established. This will ensure casualties can be logged, medically checked and decontaminated where necessary.

6.3.2 Operational command will nominate an area for use as a casualty landing area and consideration should be given to:

- Accessibility of rescue assets
- Likely development of the incident
- Number of casualties
- Media access

- Security
- Access to decontamination
- Access for onward transport to shelter
- Access for medical services
- Consideration of disabled access.

6.3.3 The location of casualty landing and reception areas will be determined through close liaison with the medical teams. Hazardous Area Response Team (HART) Ambulance assets will play a leading role in processing casualties. These teams have some rescue related and medical incident management capabilities. Early consideration should be given to embedding HART assets within the SAR cell at Tactical and Operational Command level.

6.3.4 Fire and Rescue Service Urban Search and Rescue teams may potentially be able to assist with the construction of landing platforms. The teams could use stocks of timber and sheeting to build platforms.

6.3.5 Fire & Rescue Service Incident Response Units can be used to assist the decontamination of rescue staff and casualties.

6.3.6 The Ambulance/HART teams should liaise with the Tactical or Operational Command to meet their own decontamination needs.

6.3.7 Consideration must be given to levels of Personal Protective Equipment (PPE) for personnel in the casualty reception area. A minimum of life jacket must be worn by personnel within three metres of the water's edge and full water rescue PPE for personnel who may enter the water to assist with casualty reception.

6.4 Hand and whistle signals

6.4.1 In order to ensure interoperability between teams regardless of their Agency it is essential that all teams use a standard set of signals for communication.

6.4.2 Whistle blasts

Signal	Meaning
One blast	Stop or attention towards signaller
Two blasts	Attention to upstream or move upstream
Three blasts	Attention to downstream or move downstream
Three blasts repeated	Emergency

6.4.3 Hand signals

Signal	Meaning
One hand flat on head	OK
One arm raised above head	Distress
Pointing with one arm outstretched above horizontal. May be preceded by circling of hand vertically in air.	Move in that direction

Pointing with one arm outstretched below horizontal	Attention to or hazard in water
Both arms crossed in front of chest	Need medical help or bring medical kit.
One arm outstretched in front of chest showing palm	Stop
Whilst in boat- arm outstretched to one side	Move in that direction
Whilst in boat- both arms raised above head	Stop
Whilst in boat- one arm outstretched at side of body bent upwards at 90°	Holding position

7. Communications

7.1 General protocols

7.1.1 Tactical Command will establish a communications network. In order to ensure a safe span of control, this network should aim to ensure that no more than 5 lines of communication are received at any one point. Consideration should therefore be given to establishing a communications cell at both Tactical and Operational Command. A communications plan should be implemented which will establish radio frequencies and networks.

7.1.2 Early consideration should be given to utilising rescue assets that can provide dedicated communications facilities that can complement and support the primary method. There is a UK-wide SAR frequency plan for UK Land-based SAR assets that uses marine band frequencies capable of carrying out this function. It can be accessed by most volunteer land-based SAR teams. Assurance is provided by the UKSAR Communications Sub-Committee, which issues licences on behalf of the wider UKSAR framework. This is a reliable network that has successfully supported flood management during recent emergencies.

7.1.3 All flood rescue assets must ensure that they hold a suitable and agreed means of communications. It is likely that the primary means of communications will be Airwave radio, but may include marine band VHF, mobile telephone or other systems appropriate to the incident.

7.1.4 Each flood rescue asset will require a call sign and this must be clarified prior to tasking. All means of communication available to a specific team should be provided to the Command Point upon arrival at the Strategic Holding Area (SHA).

7.1.5 Flood rescue teams must ensure that all transmissions are clear and concise, using appropriate communication language. It is also important to receive an acknowledgment of all transmissions. At larger incidents effective radio discipline is essential, particularly as there may be many teams using the same frequency. Utilising GPS activated radios can aid asset tracking.

7.2 Operations Normal Routine

7.2.1 Flood rescue teams and Incident Command must comply with the Operation Normal “Ops Normal” routine. The aim of the Ops Normal routine is to ensure that all assets within the area of operations are routinely accounted for. The Tactical Command should confirm a time period for Ops Normal calls which should ordinarily be every 60 minutes but may differ according to

circumstances. Every flood rescue team, when tasked in the area, must contact Operational Command at the pre-determined time interval unless, within that time, operational communications have been conducted that included a team location.

7.2.2 The Ops Normal call should include the following information: the term "Ops Normal" (indicating all well), a location – preferably an OS grid reference, but may include some other landmark or street name – and brief description of the activity undertaken. This is to ensure that the Operational Command can track and account for every team in the area. Ops Normal calls should be clear and concise.

7.2.3 Operational Command will expect to receive and record all Ops Normal calls in accordance with the times specified, except when a unit is operationally engaged or requests assistance. During such an event the receiving command will assume that the unit is Ops Normal. In the event that a team cannot communicate with Incident Command or vice versa, a lost comms routine will be established.

7.3 Contingency plans for communications loss/degradation

7.3.1 In the event of a failure of communications equipment or loss of signal, each team leader will use all available means to contact Operational Command to report safe in accordance with the Ops Normal Routine. In the event that this proves unsuccessful, each team will return immediately to the last reported position, if safe, and re-attempt comms.

7.3.2 If communications prove unsuccessful at the last reported position, the team leader should attempt to return to the launch site using the exact route taken to that location. In the event that this route is not safe he/she should wait at the last reported position until assistance arrives. Team leaders should not divert from their original route unless comms are re-established.

7.3.3 Operational Command will expect Ops Normal communications at the pre-determined times. In the event that these are not received, they will attempt to contact the team by all available means. In the event that this proves unsuccessful, the command will wait 30 minutes to give the team sufficient time to re-establish comms from the previous reported location. Following 30 minutes of continued lack of comms, or less where circumstances dictate, the Incident Command will assume there is a problem and task another team of the same or greater capability to search for them. The same comms procedures will be instigated with the searching team. Once the lost team is reached, the source of the comms problem should be established prior to re-tasking.

7.3.4 In the event that a team requires assistance to deal with an incident, a message should be relayed to Operational Command prefixed with 'priority'. All other users on that frequency must wait until the transmissions are complete. In the event that a team experiences an emergency involving the crew or craft, an immediate message will be relayed to Operational Command prefixed 'Mayday' followed by full details of the emergency. Wherever possible all other users of that frequency should move to an alternative frequency. Alternative frequencies should be designated as part of the communications plan at Tactical Command.

7.4 Communication for Major Flooding Events

7.4.1 Historically, communications have always been highlighted as a significant area that has challenged all responding agencies at flooding events. A large number of different responders are likely to attend and they often bring their own communication methods. For some organisations

they will have a good understanding of multi-agency interoperability but for a significant number of other responders it will be a challenge to integrate effectively.

7.4.2 To respond effectively a robust communication plan needs to be developed and tested ahead of it being needed. The plan should address communications for Commandand Control as well as information and data management to aid the development and dissemination of the Common Operating Picture.

7.5 Airwave

7.5.1 Airwave is available to a large number of Category 1 and 2 responders and the National Police Improvement Agency has published guidance of interagency use of airwave for local, regional and national level incidents. These documents can be downloaded from the NPIA website:
http://www.npia.police.uk/en/docs/Part1_SOP_Guide_on_PoliceandInter-Agency_Airwave_Interop.pdf
http://www.npia.police.uk/en/docs/Part2_SOP_Guide_on_PoliceandInter-Agency_Airwave_Interop.pdf

7.5.2 Police Forces will usually have a Force Operational Airwave Tactical Advisor available to advise on the best configuration for the airwave communication system to achieve optimum multi-agency mutual aid and interoperability. However, for extended duration events an “Airwave Cell” should be considered to provide support for Airwave communications requirements. Some mutual aid and inter-operability channels require activation via Airwave Solutions Ltd on the request of an authorised agency.

7.6 VHF Frequencies

7.6.1 A number of different organisations will also have access to VHF frequencies including:

- Maritime and Coastguard Agency (Marine band VHF)
- Mountain Rescue / Lowland Search and Rescue (UK Land SAR Frequencies VHF)
- RNLI (Marine band VHF)
- Search and Rescue Helicopters (UK Land SAR channels & Marine Band)
- Other aircraft may have radio fits to work on VHF frequencies

Some of these organisations may also have access to Airwave.

7.6.2 VHF communications is a well established communication method, especially for responders that are likely to work out of immediate line of sight or in remote areas. It does not provide large area coverage unless repeater or relay stations are used to extend the range or fill in coverage gaps.

7.7 UHF Frequencies

7.7.1 UHF based communications is usually limited to short range line of sight, except when operated at altitude. UHF communications is commonly used by:

- Fire and Rescue Services – "fire ground" communications
- Aircraft – Aviation UHF frequencies (Air Traffic Control etc)

7.8 Mobile Phone and Telephone Lines

7.8.1 Mobile phone coverage is likely to be un-reliable during major flooding events and will gradually deteriorate in longer duration flooding events as isolate mobile phone locations that are powered by generators lose power.

7.8.2 The UK Government has resilient telecommunications networks but in wide area flooding these may be difficult to access from other networks and capacity may well be limited due to overloading of the systems.

7.8.3 The UK Government runs a Privileged Access Schemes for both mobile and fixed land line telephones; these are usually administered by the Local Resilience Forum.

7.9 Suitability of Equipment for the Flood Environment

7.9.1 Communication equipment needs to be robust enough to operate in a flood environment. Not all equipment is rated for immersion in water and it may be easily damaged unless protected. Waterproof bag systems can be used to provide additional protection but may affect operability.

7.10 Communications Equipment Support

7.10.1 Responding agencies should have sufficient capacity to maintain effective communications capabilities and consider:

- Spare equipment to repair or replace damaged equipment
- Sufficient battery recharging capabilities to support extended duration operations for portable handsets.

7.11 GPS Tracking of Flood Responding Assets

7.11.1 A number of organisations have systems to track the location of assets that are responding to incidents (via airwave, radio or mobile phone). GPS tracking may provide information on where personnel are as well as tracking the location of assets such as fire appliances or ambulances. Some care may be required as to how this information is used effectively to ensure that the correct levels of command and control are exercised.

7.12 Lost Communications/Emergency Procedures

7.12.1 A lost communications procedure needs to be developed and briefed to flood responders, especially for those that are operating in more difficult locations.

A clear plan of action is required in the event of a flood responder indicating that they have an emergency.

7.13 RAYNET

7.13.1 This is the Radio Amateur Emergency Network and they can be used to assist in developing communications infrastructure across a large area that will free up other resources. They can provide short and long range communications, providing gateway and relays for radios.

8. Animals

8.1 Operational Commanders and team leaders will decide on whether to carry out animal rescue/transportation based upon the dynamic risk assessment. Operators should ensure a safe system of work is in place. This may include portable pet cages for cats and small animals and muzzles for dogs.

8.2 Large livestock may also require evacuation to minimise losses for farmers – this requires engagement with RSPCA assets who are the experts in this field.

9. Helicopter operations

9.1 Operating with Helicopters

9.1.1 Helicopters have proven extremely important in floods to rescue stranded people in difficult-to-access locations, transfer the injured and flood response personnel and conduct search operations over areas that are inaccessible to other responders.

9.1.2 Employment of air assets should initially be in accordance with UK SAR Operator's group Standard Operating Procedure for the Deployment of Air Assets (UK SAR, 2010).

9.1.3 As a flood incident escalates, additional major incident considerations may be required to ensure aircraft safety and maintenance of flood related search and rescue tasking. The establishment of a Combined Silver Air Cell, at the direction of Gold Command, will ensure that only suitable agreed tasking is passed on to the aircraft or the aircraft co-ordinating authority. The MOD defines a major incident as when more than 3 aircraft attend.

9.2 Helicopter Assets

9.2.1 A range of helicopters may be used when dealing flood incidents. Incident Commanders and responders require a reasonable working knowledge of them to ensure appropriate tasking requests are submitted and teams know how to work with aircraft during the incident.

9.2.2 Helicopter assets have a range of capabilities usually based on their roles:

- SAR Helicopters are winch-capable aircraft that can operate in a wide range of weather conditions. SAR aircraft have good surveillance systems and can operate at

night using night vision goggles. The RAF, RN and MCA operate SAR helicopters from bases around the UK and these assets are co-ordinated by the Aeronautical Rescue Coordination Centre, RAF Kinloss. These assets should only be requested via a CAT 1 responder. RAF SAR helicopters can deploy with a Search and Rescue Liaison Officer (SARLO) to provide local level incident support at Tactical or Strategic Level. The SARLO will not normally deploy with the first aircraft to scramble; it takes a finite time to allocate, brief and equip a SARLO. He/she may well deploy on a second a/c or, if the area is still accessible by road, by car. For life-saving activities there is no charge to the requesting agency and can include the movement of flood response personnel and equipment to places of need, as well as rescue of flood victims. The aircrew can often be trained to paramedic level.

- Police Air Support aircraft are mostly helicopters but there are a few fixed wing. Helicopters are not usually winch-capable but have a good surveillance system and will often be operated by the local Police Force who has an intimate level of local knowledge. Police aircraft may on occasion carry a paramedic as part of the crew. A number of Police Forces have fixed wing assets that may be employed to support flood operations.
- Helicopter Emergency Medical Service (HEMS) aircraft are equipped for the treatment and transfer of ill or injured patients. They are crewed by ambulance service staff. They do not have surveillance capabilities and require a land site to embark patients.

9.3 Role of Aeronautical Rescue Coordination Centre (ARCC)

9.3.1 The ARCC acts as the lead authority when dealing with SAR aircraft co-ordination and will consider all relevant requests for aircraft to support flooding incidents. They will co-ordinate the attendance of SAR aircraft from around the UK and provide support to aircraft that are deployed on flood incident tasks (such as identifying refuelling locations, co-ordinating with receiving hospitals and arranging relief aircraft).

9.3.2 All requests for SAR aircraft should be made to the ARCC via the highest level of co-ordination group (usually Strategic or Tactical).

9.3.3 The ARCC can also assist with requests for deployment of other military assets such as RAF Mountain Rescue team C3 vehicles to help inter-agency communications. They can also be a suitable initial contact point for requests for Military Aid for Civil Contingency (MACC). The Regional Liaison Officer will also be involved and they co-locate with Strategic Command or with the Combined Silver Air Command.

9.4 Planning Considerations for Helicopters

9.4.1 A number of considerations should be made when planning to use aircraft, but ultimately it will be up to the aircraft's Captain to make a final go/no go decision. In early stage planning it may be worth discussing options with the Combined Silver Air Cell personnel or the ARCC.

9.4.2 Considerations include:

- Weather – en route and on-scene
- Nature of the incident
- Assistance required (to include equipment type and amount to be moved)

- Any other SAR assets on-scene or en route

9.5 Communications with SAR Aircraft

9.5.1 Ground to air communications can usually be established using UK Land SAR channels 62A (calling channel) and then changed to 24A for local ground-to-air operations. For marine band VHF equipped units, Channel 0, 16 or 67 can be used.

9.5.2 Tetra airwave sets are available to aircraft, but these are not authorised for use in flight and can only be operated when the aircraft is on the ground.

9.5.3 Aircraft can also be contacted via the ARCC using HF if outside the VHF range.

9.5.4 Aircraft use air frequencies to de-conflict operations/air space.

9.5.5 Instructions or information can be relayed to the helicopter via the winchman if collocated with the land party (PolyCon (short range) or marine band radio (VHF FM medium range)).

9.6 Hazards

9.6.1 Operating with aircraft has a significant number of associated hazards. Ideally flood rescue personnel should have had previous training to work with aircraft and be able to recognise the hazards. Hazards to which personnel on the ground can be exposed include:

- Rotor wash /down drafting (blowing water, dust, snow and other materials, small boats being flipped)
- Blade sail (especially at start up and shut down)
- Exhaust fumes and temperatures
- Rotor strikes due to operating on uneven ground
- Tail rotor strikes due to low clearance heights
- High noise levels (hearing and reduced levels of communications)
- Static discharges
- Foreign Object Damage (material that is picked and damages the aircraft)
- Impact with high objects (such as poles, masts, trees etc)

Good ground team management and appropriate PPE will minimise these hazards to all personnel, alongside strict adherence to instructions given by the helicopter's crew.

9.7 Landing Site Considerations

9.7.1 Wherever possible authorised helicopter landing sites should be used, as these have known hazards associated with operating from them. If landing sites need to be established for working with aircraft then consideration should be given to:

- aircraft approach and departure safety,
- noise issues for people in the landing site area if it is to be used regularly,

- Suitability of ground for aircraft and other vehicles such as ambulances (e.g. slope and surface of area (extreme slope and boggy or loose surfaces should be avoided)).

If the crew is not happy with site selected they will not land and will choose another suitable nearby site.

9.8 Boat Operations Considerations

9.8.1 Operating small rescue craft in the flood environment will be challenging for most crews and any operation with an aircraft will considerably increase the risk to all those engaged in the activity. The lack of safe, open water and air space, the risks of impact with shallow ground or debris and the large density of obstacles should be reason enough to generally avoid winch operations to or from small craft, if at possible. Moreover, the construction of unpowered rescue craft make them extremely susceptible to helicopter downwash, which in turn increases risk when winching to or near them. It is preferable to seek a dry point or large structure and conduct winch operations from them.

9.8.2 If unavoidable then:

- good communications with the aircraft and crew need to established
- a suitable area to operate both boat and aircraft needs to be identified
- the boat should be prepared for winch operations, to minimise objects being blown around and reduce the number of snag hazards on the craft.

9.8.3 Personnel or casualties that have automatic inflating life jackets may need to have the life jacket put in to a manual inflation mode shortly before being transferred. If this is not possible, the automatic mode must be disabled as soon as emplaning is complete, indicating to the crew when this action is complete.

9.8.4 References:

- UK SAR Operators Group, 2010, *Standard Operating Procedure for the Deployment of Air Assets v 1.2*, UK SAR Operators Group, Department for Transport.

10. The Search and Rescue Protocol

10.1 Introduction

10.1.1 Flood incidents may result in people being reported as missing, lost or information about their whereabouts may be less than precise. Although the Police have a responsibility to manage missing person incidents they will often have to engage other agencies to assist with the investigation, management and conduct of search operations. In a major flood scenario a search and rescue plan must be established at Tactical and Operational Command levels.

10.2 Search Responsibilities

10.2.1 Overall responsibility for missing persons in mainland UK lies with the Police. They will co-ordinate agencies to provide a suitable response to investigate and, if required, conduct search operations. The priorities of the police service in dealing with missing persons include:

- To ensure every report of a missing person is risk assessed to identify vulnerable or high risk missing persons

- To investigate reports of missing persons
- To adopt a proactive multi-agency approach in dealing with missing persons
- To support the needs of the family, those close to the missing person and community
- To preserve evidence where a crime has been committed.

10.3 Definition: The Association of Chief Police Officers (ACPO) definition of a missing person is:

> "Anyone whose whereabouts is unknown, whatever the circumstances of disappearance. They will be considered missing until located and their well-being or otherwise is established", (ACPO, 2005).

10.4 Categories of Missing Persons in the Flood Environment

10.4.1 In the water and flood environment missing people will usually be considered as high risk missing persons. If a person is deemed as "lost" then the risk associated with them may be less from a management perspective but each report will require careful consideration as the circumstances may be rapidly changing.

10.4.2 Missing – event witnessed:

- This category of missing persons relates to an event with a person or persons that are seen to not reach a point of sanctuary. Typically these events will be considered as high risk events for the missing person (and potentially for any search and rescue asset). For example:
  - An individual who was witnessed being swept away in a water flow or
  - A car that was seen to be washed away when driving through a water flow.

10.4.3 Missing – unaccounted for:

- This category of missing person/persons is associated with information that suggests a person should be found in a particular location, but for some reason they are not there or cannot be confirmed as being there. This type of missing person may occur:
  - As a result of their own actions, such as leaving home to make their way to another location and they fail to arrive, or
  - As the result of infrastructure failure such as telephone system failures which leads to an inability to contact people who may be stranded in difficult to access locations.
- There may be considerable investigative effort to determine the missing person's location (such as checking survivor centres, other family or friends). This investigative effort would normally be undertaken by the Police, but suitable records must be maintained by the search co-ordinator.
- In field search activities may be required such as checking the Point Last Seen (PLS) or Last Known Position (LKP) and conducting searches around these locations depending on the circumstances.

10.4.4 Lost:

- These are people or persons in a location of relative safety but not currently aware of their precise location or unable to provide it
- Some effort is required to determine where they are to then effect a rescue or evacuation.

10.5 Types of Searches in the Flood Environment

10.5.1 Recon:
Rapid search about developing intelligence to inform where to search, enhancing the Common Operating Picture (COP), directing mobile uninjured survivors to reception centres. No rescue activity would be conducted.

10.5.2 Hasty Search:
Quick search; identify location with easy-to-find casualties; very simple rescue or extrication. Call in resources to provide the rescue response.

10.5.3 Primary Search:
House to house type activities, typically using shout and listen techniques as well as quick visual sweeps to look for casualties; collection of intelligence such as number of people in building; survivor needs assessment; call in additional rescue support if required.

10.5.3 Secondary Search – Low Coverage:
Movement of debris in buildings; clearing street debris to find victims; detailed search of debris in areas away from human habitation to find missing persons.

10.5.4 Secondary Search – High Coverage:
Full entry into all parts of building with removal of debris – no further search activity to be conducted on completion. Removal of all debris from areas with human habitation. Extensive search of other debris (move from one location to another) to ensure a high coverage search. This would usually be conducted during the later stages of the response phase or as part of the recovery phase. The nature of these searches would usually be to locate flood victims and evidence protection/recovery should be a key consideration to support the Coroner and Police.

10.6 Search Planning Considerations

10.6.1 Flood-related search will be a challenge for most responding agencies. Specialist search management support should be considered at an early stage to minimise loss of operational tempo.

10.6.2 Determining search resource requirements (numbers and types) is difficult to judge. A search asset's speed of advance and the distance required to cover, along with an estimation of any specific tasks durations, can be useful planning aids:

- Estimated speed of advance for teams operating in a wading mode: 500m-1km per hour
- Estimated time to gain entry into a house, conduct a primary search of easy-to-access rooms and record data: 10-20 minutes.

10.6.2 These speeds and times are an initial planning estimate and will require modification based on reported in field search conditions.

10.6.3 The environmental impact of search operations will mean effective search effort rapidly decreases with time.

10.6.4 Planners must also remember that search assets may have considerable access/egress times associated with particular search tasks. Aircraft/boats may be used to transfer search team members to specific locations.

10.7 Communications

10.7.1 Search often requires teams to operate in locations that will be relatively remote from command and control centres. Good communications is essential to ensure:

- Team safety
- Reporting ability to enable other resources to be mobilised to support rescue or evacuation operations.

10.8 Command and Control Considerations for Search

10.8.1 Strategic Command will clearly identify the wide-scale, strategic search and rescue priorities. Search-related prioriteis will be specified by tactical command and passed to Operations Command in conjunction with the SAR cell. Operations Command will then be responsible for conducting search and rescue tasks in line with the specified tactical plan.10.7.2 The terminology and processes for Search can lead to some confusion when considered with the Incident Command System.

The following descriptions explain search terminology and its relationship to the incident command system.

10.9 Area(s) of Operations (AOO)

10.9.1 These are one or moregeographic areas that contain all active operations or reports within a defined geographic Operational boundary. That Operational area will correspond to an Operational / Bronze level, within the Incident Command structure, and as such will be the responsibility of an Operational / Bronze Commander.

It would be expected that the Tactical / Silver Commander would be responsible for determining which Areas of Operations will be prioritised where competing needs arise.

The AOO can be sub-divided into segments* to indicate areas of responsibility, areas for tasks or administration. Intelligence reports will contribute to defining the AOO and the development of a Common Operational Picture (COP).

10.9.2 Segments are areas that have boundaries used to identify smaller tracts of the AOO. Segments are about ***where*** to conduct tasks. A segment can contain multiple sectors or it can contain one sector. Resources can be allocated to segments to achieve tasks. It would be

expected that the Operational Commander would be responsible for determining which segments are going to be prioritised. The prioritisation process should be a mutli agency decision.

10.9.3 Sectors are about ***how*** to conduct tasks. A sector will have a Sector Commander who will be responsible for the conduct of any tasks that are assigned. Sectors identified for search-related tasks should ideally be;

- Searchable within an operational period for the assigned asset
- Have clearly identifiable boundaries to aid the search teams
- Have a clear plan of action to deal with flood victims and survivors.

Note: in major or extended incidents, formal search management processes may be used by search management teams to determine regions to search.

* It should be noted that the terms *segment* and *sector* when used in this context relate to terminology used within the field of search management. Unfortunately, the term *sector* is also used within the Fire Service Incident Command Systsem. When conducting search operations, Fire Commanders should consider search *segments* to equate to fire *sectors*.

10.10 Tasking

10.10.1 Tasks are identified by the relevant Operational Commander / Sector Commander and communicated down to resources that will carry out the actual tasks. All tasks need to have:

- a record of the work to be conducted
- a note who is assigned to it
- a start and finish time
- progress monitored
- a review on completion for follow on actions.

Search teams should have a comprehensive operational and task specific brief. A full debrief should be undertaken to enable search planners to consider future search actions.

10.11 Records

10.11.1 Good record keeping is essential to ensure that search and rescue effort is not wasted and is properly focused. The use of tasking forms will enable a record of taskings to be maintained. Additional records, such as decision logs, narratives and action logs may also be required. Handover briefings should be recorded and help to maintain a snapshot of the current operational status. Records may be required to support post incident reviews, debriefs and inquiries; and to provide evidence to relevant authorities.

10.12 Search Resources

General Considerations

10.12.1 Any search task must have objectives that are as well defined as possible. Briefings are essential and should include:

- Type of search to be conducted
- Communications and fallback methods
- Actions on finding flood victims and survivors.

10.12.2 Bank based search

10.12.2.1 In areas where land is exposed, bank based search teams can be employed. Searches can be focused on the dry near water margins (warm and hot zone areas) and areas where water levels have dropped. Providing them with binoculars or other vision aids may enhance their detection capabilities.

These teams are not provided with equipment to conduct in-water search or rescue activities and will require additional support to effect anything more than simple talk, reach or throw type rescues.

10.12.3 Water Search Teams

10.12.3.1 These teams have a limited ability to conduct search activities in water (usually hazard, water depth and current will be the main limiting factors). These teams will be able to move through shallow water areas to reach search tasks. These types of teams can use unpowered boats to aid access to search tasks.

10.12.4 Boat Based Search

10.12.5 In areas where it is difficult for personnel to operate, boat-based operations may be the best method of conducting searches. Boats may be used in a number of different ways including:

- Crews, if trained, can conduct open water search-pattern-based searches, such as;
  - Expanding square searches
  - Parallel track searches
  - Sector searches
- Crews may be provided with specific “hot spot” location searches based on information gathered from the field.
- Sector based searches will require crews to conduct a search of a geographic area.

10.12.6 Helicopter based search

10.12.6.1 Helicopter assets may be an ideal method of searching larger segments or sectors (within the context of search management terminology), or identifying and transferring search teams to hot spots or “lily pads”. The search tasking should provide a clear indication of the area to be searched and include information on how to handle dealing with those affected by the floods. Some helicopters have a limited rescue capability (such as Police and Helicopter Emergency Medical Service (HEMS) aircraft) and they may be more suited to search tasks rather than rescue tasks. It is important to check with the aircrew / Air Liaison Officer what rules they operate under and to inform them of other SAR assets operating in the area, to aid overall effectiveness and help with deconflictions. A good liaison with the Air Liaison Officer will help operational effectiveness.

10.13 Search Related Considerations

10.13.1 Lily Pads

10.13.1.1 Areas that are totally cut off by flood water may still require search and rescue effort. When planning operations for areas such as these, teams that are deployed to these locations need to consider how they can provide an effective search and rescue service. Teams deploying into lily pads using boat or aircraft should ensure that they identify suitable capabilities, resources and have sufficient endurance to conduct a full range of flood SAR operations, potentially for an extended period. A suitable location to act as a forward control post / survivor reception centre should be identified and its position reported to Operational Command.

10.13.2 Dealing with Pets and Animals

10.13.2.1 Results of search activities may indicate that flood survivors have pets and animals that need to be dealt with as part of the follow-on rescue effort. The RSPCA has a flood rescue capability and will be able to provide advice and assistance in dealing with animals.

10.13.2.2 Small animals, such as cats, can usually be dealt with by using cages and responders should consider having a supply of animal cages. Dogs may require muzzling before being transported.

10.13.2.3 Large animals may require specialist equipment to move them to places away from flood risks. Large numbers of dead animals may develop into a public health hazard if not addressed in the correct manner.

10.14 Mass Fatalities

10.14.1 Although recent UK flood events have resulted in relatively few tragic fatalities, historically, flood events can lead to large numbers of people being killed. Flood responders may have to deal with finding large numbers of fatalities. Early advice from the Police should be sought if large numbers of fatalities are found, so that mass fatality plans can be activated. Flood responders may have to work with Disaster Victim Identification teams to assist with reporting, marking and recovery of victims. Where victims are at risk of being washed away then, subject to suitable risk assessment, the bodies should be moved to a position where further movement is unlikely and the actions of the responder thoroughly documented.

10.15 References

ACPO Centrex, (2005), *Guidance on the Management, Recording and Investigation of Missing Persons*, National Centre for Policing Excellence.

Annex E – Water Rescue training modules for team typing accreditation

1. It is essential that initial training courses are delivered by appropriately qualified trainers, using adequately risk-assessed locations especially with regards to access, water features and water quality.

2. The following guidelines are the recommended parameters for staff to maintain an appropriate level of competency in the range of Water Rescue Modules detailed.

- Staff will be required to show evidence of activity based training and also attend pre-determined skills maintenance and refresher training.
- Update, refresher and skills maintenance shall be carried out on suitable and appropriate water. For Water Rescue Technicians and Rescue Boat Operators this shall be minimum Class 2 swift water or marine equivalent with appropriate hydrological conditions for all aspects of training to be carried out safely and effectively. These sessions will also be supervised and tutored by appropriately competent instructors.

3.Activity Based Training

3.1 Programmed and recorded training carried out in the work place. To maintain skills this can be practised in the appropriate locations.

4. Refresher Training

4.1 Periodic refresher training completed at set time intervals, at suitable locations with competent trainers.

5. Skill Sustainability Training

5.1 Programmed training for the team to spend quality training time at suitable venues to ensure skills not covered by work based training are maintained (see modules). This training is under the supervision of appropriately competent trainers.

Module 1	**Water Awareness**

Target group;
All staff who may, as part of their role, work near to the water.

Scope;
This training is designed to make people aware of the hazards associated with water and carry out basic land-based rescue techniques.

The dangers of working near water are explained and basic safety measures are introduced to the student.

The session includes awareness of water-related hazards, water hydrology, scene organisation, principles of water safety, varying rescue options including low to high risk options and introduction to basic water safety PPE.

The training is split into separate units which cover the essential knowledge and understanding plus the practical application of items of equipment which may or may not be available to the students. The practical units are delivered as dry land sessions.

Aim;
To enable staff to work safely near water.

Learning Outcomes;
State the hazards associated with working near water.
State safety measures to be put in place when working near water.
Describe selection of and demonstrate correct donning of water safety PPE.
Demonstrate the use of rescue equipment provided

Outline of requirements;

Knowledge and Understanding relating to Learning Outcomes;

Agency Policy.
- Understand Agency Policy
- Understand Agency Standard Operating Procedure
- Have an awareness of national flood operational framework

Identification of the basic characteristics and hazards of the water environment.
- Water temperature
- Current /flow
- Pollution/ contamination
- Public, bystanders, moral pressure
- Training, equipment
- Locks
- Weirs
- Ice, mud and other unstable surfaces
- Access
- Entrapment
- Debris
- Casualty (human and animal)
- Noise, communications
- Visibility

Time of day/ year
Tide
Effects of weather
Changeable water condition.
Other water users, vessels etc

Safety Measures when Working near Water.
Understand the Defensive Swimming Position.
Understand the concept of Zoning near to the water.

Awareness of the physiological effects of entry into cold water.
Cold water reflex
Short and long term effects

Have an appreciation of the physiology of drowning
Physiology of drowning

Have an appreciation of the difficulties associated with rescues from ice, mud and other unstable surfaces
Ice, mud and other unstable surfaces.

Understanding of the limitations of non water rescue PPE in various water environments
Cold
Drag
Weight
Helmets
Self rescue/ recovery
Breathing apparatus sets
Clothing worn by non operational personnel

Have an understanding of flowing water hydrology
Eddies
Force of water
Strainers
Main current
Helical, Laminar flow
Flood water

Selection, use and care of PPE
Life jackets
Buoyancy Aids
Ancillary equipment

Have a knowledge of the prioritised approach to rescue attempts
Understanding of Talk, reach and throw techniques
Awareness of row and go limitations

Awareness of casualty management
Basic casualty care

Demonstrate the use of throw bags.
Design and limitations
Care and maintenance
Dry land practice (in bag and loose coiled)
Receiving the throw line as casualty

Demonstrate the use of inflated fire hose.
Design and limitations
Care and maintenance
Dry land practice

Refresher and sustainability;
Activity Based Training

Personnel trained to this level should be refreshed during activity based training on an annual basis. This update training should include:-

- Safe working near water
- Water Safety PPE
- Pollution, infection, hygiene and de-contamination.
- Rescue equipment practice

It may be necessary to refresh personnel on specific areas of Water Awareness, or example following a near miss or incident of concern.

Module 2	**Water Rescue First Responder**

Target group;
This Module is aimed at selected operational personnel who respond to water incidents and have available to them the correct PPE.
The Module introduces water rescue equipment including its safe and effective use and progressively develops the student to be confident in and around water. As well as learning how to read the water, the student will practice wading rescues and self-rescue techniques appropriate to the risk, bank based rescues and shallow water crossings, and unstable surface hazards such as mud and ice.

Scope;
Fire Service Module one- Water Awareness

Pre-requisite;
Module 1 Water Awareness

Venue:
The water selected for this Module shall be appropriate to the limits of wading rescue with suitable and appropriate hydrology features, up to class 2 water, for all aspects of training to be carried out safely and effectively.

Aim;
To train students to identify their limitations and safely and effectively use water rescue equipment, whilst operating near, on, or in moving water appropriate to the limits of wading rescue

Learning Outcomes;
Demonstrate water rescue scene management and dynamic assessment of risk.
- Understand the limitations of the water rescue first responder capability
- Rescue Team Organisation
- Communication systems, hand, audible and radio
- Hazard recognition and preplanning
- Risk and incident zones
- ICS alignment
- Team roles and responsibilities

Identify and apply the role of the First Responder within the Incident Management Structure.
- ICS alignment
- Team health, safety and welfare

Apply a working knowledge of hydrology and associated hazards.
- Recognition of water features and their impact

Identify and use appropriate PPE
- Types
- Donning and doffing
- Care maintenance and inspection, record keeping

Demonstrate self rescue from water.
Understand and apply relevant rescue techniques
- Talk, Reach, Throw
- First responders to only demonstrate talk, reach, throw.

Have a working knowledge of specialist rescue equipment (where in use by Agency)
- Inflatable adjuncts
- Ropes for water rescue
- Technical Hardware
- Unstable ground equipment

Demonstrate techniques for movement in shallow water
- Supported crossing (poles / lines)
- 1-2-3 person teams

Wedge
Casualty crossing
Awareness of flooding and associated hazards
Pollution
Location and incident specific hazards
Topography
Have a working knowledge of casualty management issues specific to the water environment
Medical problems associated with water.
Identify and explain an understanding of the hazards and implications associated with:-
Entrapment, Supporting tag lines, use of cinches
Mud and Ice, Characteristics, Medical issues, extrication techniques, contamination
Locks and Sluices, Characteristics, design / hydrology, specific rescue techniques
Animals, Hazards and safety protocols,
Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility and application of suitable control measures.
Equipment issues
Lighting
Additional marking requirements
Audible signals

Refresher and sustainability;
Activity Based Training

Annual recorded activity based training should cover the following subjects;-

Donning, doffing and care of water rescue PPE
Water Rescue Incident Management
Self rescue techniques.
Throw bag skills
Shallow water crossing techniques
Swift water hydrology.

Refresher Training

Each operator should demonstrate competence against each learning outcome at least once every three years. This may take the form of a full course renewal and/or skills based assessment, under the supervision and tutorship of competent trainers.

Skill sustainability training

Where ever possible the First Responder should partake in supervised skill maintenance training. These sessions should be supervised and led by Water Rescue Technician Instructors. This training should take place in suitably safe and appropriate locations.

Module 3	**Water Rescue Technician**

Target group; Specialist Rescue Personnel

Scope;
This Module is aimed at selected operational personnel. The Module introduces water rescue equipment including its safe and effective use and progressively develops an individual to be confident in and around moving water. As well as learning how to read the water, an individual will spend time swimming, practising self-rescue techniques and performing in-water rescues as part of a rescue team.
The syllabus also includes boat and pathway handling, rope rescue techniques and consideration of still water and unstable ground hazards such as mud and ice.

Pre-requisite;
Module 1 Water Awareness

Venue;
The water selected for this Module shall be minimum Class 2 swift water with suitable and appropriate hydrology features for all aspects of training to be carried out safely and effectively.

Aim;
To enable individuals to safely use water rescue equipment, whilst operating near, on, or in inland water and to be able to carry-out water and flood rescues safely, providing the underpinning skills and knowledge to undertake an effective dynamic risk assessment.

Learning Outcomes;
Demonstrate water rescue scene management and dynamic assessment of risk.
- Understand the limitations of the role
- Rescue team organisation
  - Communication systems
  - Hazard recognition and preplanning
  - Risk and incident zones
  - ICS alignment including providing tactical advice
  - Team health, safety and welfare

Identify and apply the role of the rescue technician within the Incident Management Structure.
- Team health, safety and welfare
- Team roles and responsibilities

Apply a working knowledge of hydrology and associated hazards.
- Recognition of water features and their impact

Have an understanding of search procedures in the water environment.
- When to search
- Deployment of teams
- Sectoring, point last seen and areas of possible detection.

Identify and use appropriate PPE
- Types
- Standards
- Donning and doffing
- Care maintenance and inspection, record keeping

Demonstrate swimming and manoeuvring in moving water
- Ferry glide concept
- Negotiating obstacles
- Entry – egress
- Defensive swimming
- Aggressive swimming
- Tethered swims

Understand and apply relevant rescue techniques
- Talk. Reach, Throw, Row, Go / Tow, Helicopter

Have a working knowledge of basic boat handling by paddle & rope systems
- Aggressive swimming
- Types and suitability of systems
- Safety briefings
- Helming skills
- Tethered boat options
- Paddling skills
- Wading skills.

Demonstrate rigging & operating of rope systems
- Equipment
- Anchors
- Tensioned diagonals
- Tensioning Lines
- Mechanical Advantage
- Knots and Hitches

Have a working knowledge of specialist rescue equipment (where in use by Agency)
- Inflatable adjuncts
- Ropes for water rescue
- Technical Hardware
- Unstable ground equipment

Demonstrate techniques for movement in shallow water
- Supported crossing (poles / lines)
- 1-2-3 in teams
- Wedge
- Casualty crossing

Awareness of flooding and associated hazards
- Pollution
- Location and incident specific hazards
- Topography

Demonstrate casualty management issues specific to the water environment
- Medical problems associated with water
- In water ‘C’ spine management
- Non compliant casualty

Identify and explain an understanding of the hazards and implications associated with:-
- Entrapment
  - Supporting tag lines, use of cinches
- Mud and Ice
  - Characteristics, Medical issues, extrication techniques, contamination
- Locks and Sluices
  - Characteristics, design / hydrology, specific rescue techniques
- Vehicles and objects in water
  - Behaviour, Hydrology, Access and stabilisation techniques
- Working with helicopters
  - Availability and access, Hazards and safety protocols
- Animals
  - Hazards and safety protocols,

Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility and application of suitable control measures.
- Equipment issues
- Lighting, additional marking requirements

Audible signals

Refresher and sustainability;
Activity Based Training

Quarterly recorded activity based training should cover the following subjects;-

- Donning, doffing and care of water rescue PPE
- Water Rescue Incident Management
- Swift water hydrology.
- Ropework for water rescue
- Inflatable fire hose techniques.

Refresher Training

Each operator should demonstrate competence against each learning outcome at least once every three years this may take the form of a full course renewal and/or skills based assessment, under the supervision and tutorship of appropriately competent trainers.

Skill sustainability training

It is recommended that personnel spend a minimum of one day per annum as a team at a suitable swift water training venue, under the supervision and tutorship of appropriately competent trainers. The water should be minimum Class 2 with suitable and appropriate hydrology features for all aspects of Technician training to be carried out safely and effectively. Skills to be refreshed shall include:-

- Swift water self rescue techniques
- Swift water throw bag skills
- Shallow water crossing techniques
- Contact swimming rescues
- Boat tethers.

Module 4 Water Rescue Power Boat Operator

Target group;
For selected module 3 Water Technicians to operate power rescue craft. This module is an extension of general powerboat courses i.e. RYA2 as it involves using the craft as a rescue platform and teaches delegates to operate in varied water conditions.

Scope;
This Module is aimed at selected operational personnel who are required to operate a powered craft for a range of activities as part of a crew.
The Module develops Module 3 Water Rescue Technicians to be able to operate a powered craft in a variety of waters, including still, moving and flood. The module covers basic and advanced boat rescue operations such as casualty pickups, throw lines, evacuations, swimming rescues and includes night search and rescue activities.

Pre-requisite;
Module 3 Water Rescue Technician

Venue;
The water selected for this Module shall be minimum Class 2 swift water or marine equivalent with suitable and appropriate hydrology features for all aspects of training to be carried out safely and effectively.

Aim;
To enable personnel to demonstrate boat-handling skills whilst operating open rescue boats in inland waters and flooding, by day or night, in a range of water conditions.

Learning Outcomes;

Individuals will demonstrate their ability to perform skills from the RYA Level 2 National Powerboat Course syllabus.

Including; pre-launch checks, launching, leaving and coming alongside, low and high speed manoeuvring, picking up a buoy, anchoring, towing, person overboard and recovery of boat.

Demonstrate boat handling in swift water.

- Identification of safe launching sites and bail-out sites
- Launch & recovery into swift water
- Recognition of moving water characteristics & hazards
- Vessel limitations, hull damage & watertight integrity
- Anchoring, veering down
- Holding station, stemming the flow, and ferry gliding
- Use of water features, including eddy currents, lees & wash-outs
- Identify the hazards and operate in shallow water
- Manoeuvring in swift water, including running with the flow, moving aft over ground, power turns, closing/bearing away.
- Coming alongside moving vessels, suction effects and pressure waves
- Closing down procedures – returning equipment, reporting faults & problems

Paddle boat handling.

- Use of paddles to manoeuvre and control the craft, in both still and moving water.
- Capsize avoidance and recovery

Search and Rescue operations from Powered craft.

- Safety equipment, communication with crew & other agencies
- Search techniques & incident management
- Methods of recovering personnel from water and techniques for lifting heavy casualties
- Extended reach rescue
- Swimmer operations

Use of loaded lines
Tandem working
Towing & being towed – length of tow lines, position to pass a tow, using a bridle, towing alongside, casting off a tow.
Approaching, righting and dealing with entrapments from capsized vessels
Dealing with entrapments
Awareness of Rescue from vehicles
Rescues from lee shores
Mass evacuation
Helicopter rescue procedures
Use of navigation systems
Use of other specialist equipment

5. Boat handling and Search and Rescue during darkness and poor lighting conditions
Practical application of skills in darkness and poor light.
Demonstrate ability at keeping a proper lookout and identifying lit & unlit marks and hazards at night.
Students to conduct a search and rescue scenario during darkness.

Refresher and sustainability;
Activity Based Training

Quarterly recorded activity based training should cover the following subjects;--

Launching and recovery
Manoeuvring the boat, forwards reverse and holding off.
Coming alongside, mooring and swift off.
Towing and being towed.
Person overboard.
Shallow water operations.
Use of navigation system

Refresher Training

Each operator should demonstrate competence against each learning outcome at least once every three years, this may take the form of a full course renewal and/or skills based assessment, under the supervision and tutorship of appropriately competent trainers.

Skill sustainability training

It is recommended that personnel spend a minimum of one day per annum at a suitable swift water training venue, under the supervision and tutorship of appropriately competent trainers. The water should be minimum Class 2 or equivalent marine environment with suitable and appropriate hydrology features for all aspects of Rescue Boat Operator training to be carried out safely and effectively. Skills to be refreshed shall include:-

Swift water boat operations.
Crossing channels, holding off, ferry glides.
Casualty recovery into the boat in swift water scenarios.

Module 5 Water Incident Management

Target group;
This Module is for personnel who may be required to advise or command at water incidents at a tactical or operational level at local events.

Scope;
This Module is designed to give individuals who may be advising or commanding tactically or operationally at a water related incident the necessary knowledge and understanding to effectively carry out that role.

Pre-requisite;
Module 1 Water Awareness

Aim;
To train existing managers to have a technical understanding of Water and Flood Incident management

Learning Outcomes;

Demonstrate an understanding of the Flood Rescue National Enhancement Project Concept of Operations.
Demonstrate and understanding of Local Resilience Forum Emergency Flood Plans
Demonstrate an understanding of water related dynamic risk assessment and how this impacts on the incident command system, including liaison with responding crews
Demonstrate an understanding of the water rescue training guidance modules and the associated capabilities of the personnel.
Have an understanding of the levels of water rescue PPE and their associated uses and applications.
Have an understanding of specific water incident issues including; specialist operator skills, welfare, crew rotation, de-contamination, communications plans and emergency procedures.
Have an awareness of search management techniques
Have an awareness of rescue and evacuation techniques used by teams.
Have an understanding of Flood Management commonalities such as; accessing and interpreting weather and flood warnings, flood warning schemes, multi-agency working, rainfall prediction, flood development, hazard identification and deployment of crews.
Have a comprehensive awareness of the agencies policies, SOP's and limitations.

Refresher and sustainability;
Work Based Training
The manager should record activity based training in relation to the subject.

Refresher Training

In order to remain current and up to date this competence should be refreshed on a three yearly basis. However personnel may be required to show logged work based training on management systems, command and control and specific water issues.

Module 6 Subject Matter Advisors

Target group;
This Module is for personnel who may be required to provide operational and tactical advice in relation to major or wide-spread Flood or Water Rescue Incidents.

Scope;
This Module is designed to give individuals who may be SMA's in local or National structuresthe necessary knowledge and skills to be able to offer advice and support at that level.

Pre-requisite;
Module 4 Water Rescue Boat Operator; Module 5 Water Incident Manager

Aim;
To train existing managers to be able to advise at operational and tactical levels on Water and Flood Incident management and the management of resources for incidents requiring National assets and assistance.

Learning Outcomes;

Explain the Flood Rescue National Enhancement Project Concept of Operations.
Demonstrate and understanding of Local Resilience Forum Emergency Flood Plans

Demonstrate a working knowledge of the National Assets Register and protocols for its use.
Demonstrate a working knowledge of Strategic Holding Areas and their operation.
Explain water related dynamic risk assessment and how this impacts on the incident command system, including functional sectorisation, inter-agency operation and liaison with responding crews
Explain the capabilities of personnel and equipment attending a water or flood rescue incident.
Explain the levels of water rescue PPE and their associated uses and applications.
Demonstrate an understanding of specific water incident issues including; specialist operator skills, welfare, crew rotation, de-contamination, communications plans and emergency procedures.
Explain search management issues, rescue and evacuation techniques used by teams, including liaison with Police POLSA and other agencies involved with search.

Observe Water Rescue Boat Operation training to gain a working knowledge of Water Rescue Boat operations.
Demonstrate an effective ability to inform tactical and strategic command decisions by drawing conclusions using Flood Management commonalities such as; accessing and interpreting weather and flood warnings, flood warning schemes, flood mapping, rainfall prediction, flood development, hazard identification rescue capabilities.
Explain the capabilities of all agencies responding to flood emergencies through the effective use of credentialing.
Apply knowledge of command and control systems, national capabilities for flooding, local flood plans, SOP's

Refresher and sustainability;
Work Based Training
The manager should record activity based training in relation to the subject.

Refresher Training

In order to remain current and up to date this competence should be refreshed on a three yearly basis. However personnel may be required to show logged work based training on management systems, command and control and specific water issues.

Annex F – Water Rescue Credentialing Standards

Credentialing categories

Water Awareness Operative
Water Rescue First Responder
Water Rescue First Responder Team Leader
Water Rescue Technician
Water Rescue Technician Team Leader
Water Rescue Boat Operator
Water Rescue Boat Operator Team Leader
Water Incident Manager
Subject matter Advisor

1. Definitions

1.1 Defra Flood Rescue National Enhancement Project

Refers to Department for Environment, Food and Rural Affairs, Flood Rescue National Enhancement Project (Defra FRNEP).This is a multi agency project formed as a result of Pitt Review to enhance flood rescue capability across England. Stakeholders include: Defra, Department for Transport (DfT), Department for Communities and Local Government (DCLG), Chief Fire Officers Association (CFOA), Civil Contingencies Secretariat, Cabinet Office (CCS), Royal National Lifeboat Institution (RNLI).

1.2 Training Guidance

Refers to the guidance contained within this document and detailed in annex E Water Rescue Training Modules.

1.3 Basic First Aid

As a minimum, skills should include;

- Ability to manage a medical incident safely and effectively
- Basic life support
- Dealing with an unconscious casualty
- Administration of First Aid to a casualty, who may be bleeding, burnt, in shock, suffering a musclo-skeletal injury, may be poisoned, overcome by gas/fumes, suffering from hypothermia or hyperthermia.
- Recognition of minor illnesses
- Dealing with medical conditions such as Diabetes, Epilepsy and Asthma
- Dealing with a drowning/near drowning casualty
- Hand over to Emergency Medical Services.

Training and assessment must be refreshed and appropriately certified on a three yearly basis.

1.4 Advanced First Aid

As a minimum, skills should include:

- All Basic First Aid skills
- Administration of Oxygen via therapy and bag valve mask.
- Spinal management, including the use of cervical collars, long boards, vacuum mattresses and head blocks
- Airway management, including use of manual techniques and airway adjuncts to maintain an airway.

1.5 Incident Command and Co-ordination System

Working knowledge of Fire and Rescue Service Incident Command System.
Familiarisation with Major incident management.

1.6 Medical Criteria.

A level of health and fitness which ensures that the individual is fit and healthy to carry out the role they are credentialed for. This should be passed by a Medical Doctor or Physician.
The medical declaration should include a test of fitness, for example an aerobic fitness test.
Inoculations could include Hepatitis, Typhoid, and Tetanus. These should be declared by the Agency

1.7 Personal Equipment

Water Rescue PPE

- Drysuit
- Rescue Buoyancy Aid (BS EN 393 or ISO 12402 pt 5, 70Newton minimum)
- Water Rescue Helmet (BS EN 1385 or PAS 028; 2002)
- Thermal layer
- Gloves
- Appropriate footwear
- Knife
- Whistle
- Eye protection

1.8 Basic Health and Safety Awareness

Awareness of Health and Safety at Work regulations including the responsibilities of employees and employers.
Working knowledge of the Risk Assessment process including Analytical and dynamic risk assessment.

Water Awareness Operative	**Ref: WAO1/09**
	Contents

Description

The Water Awareness Operative will operate in the warm and cold zone.

The Operative should be tasked with support operations and generally non rescue operations.

Tasks could include, Media, Highways support, Utilities workers, casualty handling, pumping.

Training	**Requisite**	**Recommended**
Water Rescue Training Guidelines, Module 1 Water Awareness.	X	
Basic Incident Command and Co-ordination Awareness	X	
Basic Health and Safety Awareness	X	
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Personal Protective Equipment		
275N Life Jacket	X	
Clothing appropriate to the environment and task	X	

Water Rescue First Responder	**Ref: WRFRO1/09** Contents

Description

Water Rescue First Responders will work in the Hot and Warm zones.
Tasked to support rescue operations.
Undertake wading rescues

Training	**Requisite**	**Recommended**
Defra FRNEP Concept of Operations Training Modules, Module 2 Water Rescue First Responder.	X	
Basic First Aid.	X	
Basic Incident Command and Co-ordination Awareness	X	
Basic Health and Safety Awareness	X	
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
Water Rescue PPE Full water rescue PPE Yellow Helmet	X	
Personal lighting Headlamp Personal location lighting - yellow	X	

Water Rescue First Responder Team Leader	**Ref: WRFRTO1/09**
	Contents

Description

The Team Leader will supervise a team of first responders at an operational level
Will work in the warm and hot zones
Responsible for their tasking, health and safety, monitoring and welfare.

Training	**Requisite**	**Recommended**
Defra FRNEP Concept of Operations Training Modules, Module 2 Water Rescue First Responder.	X	
Incident Command and Co-ordination Competent	X	
Basic Health and Safety Awareness.	X	
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
Water Rescue PPE Full water rescue PPE White Helmet	X	
Personal lighting Headlamp Personal location lighting - yellow	X	

Water Rescue Technician	**Ref: WRTO1/09**
	Contents

Description

A Water Rescue Technician will work within the warm and hot zones in full water rescue PPE.

Tasked with technical rescues and searches.

Training	**Requisite**	**Recommended**
Defra FRNE Concept of Operations Training Modules, Module 3 Water Rescue Technician.	X	
Basic Incident Command and Co-ordination Awareness	X	
Basic Health and Safety Awareness.	X	
Basic First Aid	X	
Advanced First Aid		X
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
Water Rescue PPE Full water rescue PPE Red Helmet	X	
Personal lighting Headlamp Personal location lighting - Red	X	

Water Rescue Technician Team Leader	**Ref: WRTLO1/09**
	Contents

Description

The Team Leader will supervise a team of responders at a tactical level
Will work within the warm and hot zones
Responsible for their tasking, health and safety, monitoring and welfare.

Training	**Requisite**	**Recommended**
Defra FRNE Concept of Operations Training Modules, Module 3 Water Rescue Technician.	X	
Incident Command and Co-ordination Competent	X	
Institute of Occupational Safety and Health (or equivalent)		X
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
Water Rescue PPE Full water rescue PPE White Helmet	X	
Personal lighting Headlamp Personal location lighting - Red	X	

Water Rescue Boat Operator		**Ref: WRBO1/09** Contents
Description A Water Rescue Boat Operator will work within the warm and hot zones in full water rescue PPE. Tasked with technical rescues, searches and boat operations.		
Training	**Requisite**	**Recommended**
Defra FRNE Concept of Operations Training Modules, Module 3 Water Rescue Technician.	X	
Defra FRNE Concept of Operations Training Modules, Module 4 Water Rescue Boat Operator.	X	
Basic Incident Command and Co-ordination Awareness	X	
Basic Health and Safety Awareness.	X	
Basic First Aid	X	
Advanced First Aid		X
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
Water Rescue PPE Full water rescue PPE Red Helmet	X	
Personal lighting Headlamp Personal location lighting - Red	X	

Water Rescue Boat Operator Team Leader	**Ref: WRBOT1/09**
	Contents

Description

The Team Leader will supervise a team of responders at a tactical level
Will work within the warm and hot zones
Responsible for their tasking, health and safety, monitoring and welfare.

Training	**Requisite**	**Recommended**
Defra FRNE Concept of Operations Training Modules, Module 3 Water Rescue Technician.	X	
Defra FRNE Concept of Operations Training Modules, Module 4 Water Rescue Boat Operator.	X	
Incident Command and Co-ordination Competent	X	
Institute of Occupational Safety and Health (or equivalent)		X
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
Water Rescue PPE Full water rescue PPE White Helmet	X	
Personal lighting Headlamp Personal location lighting - Red	X	

Water Incident Manager	**Ref: WRIM1/09**
	Contents

Description

A Water Incident Manager will be responsible for commanding or advising at a local water incident at tactical or operational level.., including co-ordination, health and safety liaison with Team Leaders regarding tasking and welfare and liaison with Multi Agency partners.
The Water Incident Manager will generally operate at either Bronze or Silver levels although may be asked to advise at Strategic levels for local incidents where National Assets are not required.

Training	**Requisite**	**Recommended**
Defra FRNE Concept of Operations Training Modules,, Module 5 Water Incident Manager.	X	
Incident Command and Co-ordination Competent.	X	
Institute of Occupational Safety and Health or equivalent		X
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Inoculations		X
Personal Protective Equipment		
275N Life Jacket	X	
Clothing appropriate to the environment and task	X	

Subject matter Advisor	**Ref: WRSM1/09**
	Contents

Description

The SMA will provide detailed tactical capability-relevant advice to the Incident Commander at Silver and/or Bronze levels at incidents requiring National assets . A number of SMA's can also provide support to other functions such as FRSNCC , the Strategic Command Incident Room and Strategic Holding Area. These SMA's will be managed by The Chief Fire Officers Association (CFOA), who will develop, maintain and manage the competencies of such SMA's providing an enhanced level of support and advice

Training	**Requisite**	**Recommended**
Defra FRNE Concept of Operations Training Modules, Module 6 **Subject Matter Advisor**	X	
Strategic Gold Command operations awareness training	X	
Medical Criteria		
Approved by a General Practitioner/Medical Doctor/Physician to carry out the role.	X	
Personal Protective Equipment		
Clothing appropriate to the environment and task	X	

Annex G Water Rescue Team Types

TEAM TYPE B – WATER RESCUE BOAT TEAM

Capability	**Logistics (Minimum requirements)**	**Team Structure (Minimum 7 persons)**	**Competencies of personnel (Minimum number required)**	**Incident Command System**
Technical water rescue Search operations within the water environment. Power boat rescue operations In water operations Flood response	Be available 24 hours a day Facility for financing supplies and consumables when mobile or on scene (e.g. credit card or Team Manager) Team to be sustainable with rations for 10 hours. Team to be available for up to 4 days on scene.	1 Welfare and liaison officer 1 team leader 5 team members * Welfare and liaison officer is for support and welfare considerations at protracted incidents not for tactical command as required by the agency.	Module 1 Water Awareness - **All** Module 3 Water Rescue Technicians **(6)** Module 4 Water Rescue Boat Operators **(4)** First Aid Qualified **(6)*** ***Update of training – current and refreshed within the previous 3 year period. Boat and in water skills within a 12 monthly period.***	All team members to be trained to the current ICS in operation for flood incidents
EQUIPMENT				
Transport Vehicle(s) suitable to carry personnel and equipment	**Communications** Handheld communications for all team members, spare batteries and charger. Waterproofed. Mobile phone with team leader and manager- waterproofed	**Medical** Basic Life Support First Aid Pack - dry bag Oxygen cylinder x2 and resuscitation equipment - dry bag Spinal long board Blankets Basket stretcher	**Decontamination** Anti-bacterial hand gel Anti-bacterial Face wipes Anti-bacterial equipment spray Full cleaning facilities available at base station	**Navigation** Handheld GPS system with street mapping facility
Boat Minimum capacity to drive upstream against 10 mph flow whilst carrying 6 persons prop guarded. Ancillary equipment- anchor, fuel containers, lifelines, D rings for tethers, Paddles. Suitable transportation system.	**PPE** Full PPE for all team members + redundancy Drysuit, Buoyancy Aid, helmet, footwear, gloves, knife, whistle, personal lighting, thermal under suit x 2.	**Technical Equipment** Set of technical rescue equipment including ropes and hardware, suitable container. Search equipment including, lighting, marker boards, mapping, aide memoirs. Throw bags x 8 Scene lighting Search lighting Hand tool kit. Wading Poles	**Testing** All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines.	

*** min 2 with advanced training inc. water specific medical considerations**

TEAM TYPE C – WATER RESCUE TECHNICIAN TEAM

Capability	**Logistics (Minimum requirements)**	**Team Structure (Minimum 7 persons)**	**Competencies of personnel (Minimum number required)**	**Incident Command System**
Technical water rescue Search operations within the water environment. In water operations Non powered boat operations Flood response	Be available 24 hours a day. Facility for financing supplies and consumables when mobile or on scene (e.g. credit card or welfare & Liaison Officer) Team to be sustainable with rations for 10 hours. Team to be available for up to 4 days on scene.	1 welfare & Liaison Officer 1 team leader 5 team members * welfare & Liaison Officer is for support and welfare considerations at protracted incidents not for tactical command as required by the agency.	Module 1 Water Awareness - **All** Module 2 Water First Responder **(0)** Module 3 Water Rescue Technicians **(6)** Module 4 Water Rescue Boat Operators **(0)** First Aid Qualified **(6)*** ***Update of training – Current and refreshed within previous 3 year period.*** ***In water skills within a 12 monthly period***	All team members to be trained to the current ICS in operation for flood incidents
EQUIPMENT				
Transport Vehicle(s) suitable to carry personnel and equipment	**Communications** Handheld communications for all team members, spare batteries and charger. Waterproofed. Mobile phone with team leader and manager- waterproofed	**Medical** Basic Life Support First Aid Pack - dry bag Oxygen cylinder x2 and resuscitation equipment - dry bag Spinal long board Blankets Basket stretcher	**Decontamination** Anti-bacterial hand gel Anti-bacterial Face wipes Anti-bacterial equipment spray Full cleaning facilities available at base station	**Testing** All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines.
Boat Minimum 6 persons capacity for tethering operations or basic paddle boat handling. Suitable for wading/paddling rescue of persons without unduly getting the casualties wet. Ancillary equipment- anchor, fuel containers, lifelines, D rings for tethers, Paddles. Suitable transportation system	**PPE** Full PPE for all team members + redundancy Drysuit, Buoyancy Aid, helmet, footwear, gloves, knife, whistle, personal lighting, thermal under suit x 2.	**Technical Equipment** Set of technical rescue equipment including ropes and hardware, suitable container. Throw bags x8 Scene lighting Search lighting Hand tool kit. Wading Poles Casualty life jackets		

*** min 2 with advanced training inc. water specific medical considerations**

TEAM TYPE D – WATER RESCUE FIRST RESPONDER TEAM

Capability	**Logistics (Minimum requirements)**	**Team Structure (Minimum 4 persons)**	**Competencies of personnel (Minimum number required)**	**Incident Command System**
Support operations Bank based safety Flood response Wading rescues	Be available 24 hours a day. Facility for financing supplies and consumables when mobile or on scene (e.g. credit card or welfare & Liaison Officer) Team to be sustainable with rations for 10 hours. Team to be available for up to 4 days on scene.	1 team leader 3 team members welfare & Liaison Officer is for support and welfare considerations at protracted incidents not for tactical command as required by the agency.	Module 1 Water Awareness – **(All)** Module 2 Water First Responder **(4)** Module 3 Water Rescue Technicians **(0)** Module 4 Water Rescue Boat Operators **(0)** First Aid Qualified **(4)** ***Update of training – Current and refreshed within previous 3 year period.***	All team members to be trained to the current ICS in operation for flood incidents
EQUIPMENT				
Transport Vehicle(s) suitable to carry personnel and equipment	**Communications** Handheld communications for all team members, spare batteries and charger. Waterproofed. Mobile phone with team leader and manager- waterproofed	**Medical** Basic Life Support First Aid Pack Oxygen cylinder x2 and resuscitation equipment Blankets	**Decontamination** Anti-bacterial hand gel Anti-bacterial Face wipes Anti-bacterial equipment spray Full cleaning facilities available at base station	**Testing** All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines.
Boat Optional Minimum 6 persons capacity suitable for wading rescues of persons without unduly getting the casualties wet. Suitable transportation system	**PPE** Full PPE for all team members + redundancy Drysuit, Buoyancy Aid, helmet, footwear, gloves, knife, whistle, personal lighting, thermal under suit x 2.	**Technical Equipment** Throwbags x 5 Scene lighting Hand tool kit Wading Poles		

TEAM TYPE E – WATER AWARENESS TEAM

Capability	**Logistics (Minimum requirements)**	**Team Structure (Minimum 4 persons)**	**Competencies of personnel (Minimum number required)**	**Incident Command System**
Support operations Bank based safety Logistical support Pumping operations	Be available 24 hours a day. Facility for financing supplies and consumables when mobile or on scene (e.g. credit card or welfare & Liaison Officer) Team to be sustainable with rations for 10 hours. Team to be available for up to 4 days on scene.	1 team leader 3 team members. welfare & Liaison Officer is for support and welfare considerations at protracted incidents not for tactical command as required by the agency.	Module 1 Water Awareness – **(4)** Module 2 Water First Responder **(0)** Module 3 Water Rescue Technicians **(0)** Module 4 Water Rescue Boat Operators **(0)** First Aid Qualified **(4)** ***Update of training – Current and refreshed within previous 3 year period.***	All team members to be trained to the current ICS in operation for flood incidents
EQUIPMENT				
Transport Vehicle(s) suitable to carry personnel and equipment	**Communications** Handheld communications for all team members, spare batteries and charger. Waterproofed. Mobile phone with team leader and manager- waterproofed	**Medical** Basic Life Support First Aid Pack	**Decontamination** Anti-bacterial hand gel Anti-bacterial Face wipes Full cleaning facilities available at base station	**Testing** All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines.
PPE 275N automatic inflation life jacket for each team member. Personal lighting	**Technical Equipment** Throwbags x 2 Scene lighting Hand tool kit.			