Emergency Response & Rescue Vessel Management Guidelines

Guideline

19th September 2024

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Contents

Table of Figures

Table of Tables

Key Responsibilities

MASTER'S DISCRETION

The owner, charterer or manager of a ship or any other person shall not prevent or restrict the Master of a ship from taking or executing any decision which, in the Master's professional judgement, is necessary for the safe navigation of the ship.

(Reference: SOLAS CH V Ord. Reg.4 of MS (Safety of Navigation) Regulations 2002 SI 1473)

OIM RESPONSIBILITIES AND FUNCTIONS

The Offshore Installation Manager (OIM) plays a key role in the offshore Installation's safety management system. The OIM will be responsible (to the duty holder) for the day-to-day management of the offshore Installation and in charge of the health, safety, and welfare of persons on or about the Installation, including ensuring the maintenance of order and discipline.

(Reference: Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995, Regulation 6, Guidance Note 43, extract.)

The OIM's functions include command and control of the offshore Installation in an emergency where this is part of the arrangements made under regulation 6 of the Prevention of Fire and Explosion, and Emergency Response Regulations.

(Reference: Offshore Installations (Prevention of Fire and Explosion and Emergency Response) Regulations 1995, Regulation 6). CO-OPERATION

Safety requires co-operation between everyone who has a contribution to make to ensuring health and safety on the offshore Installation or in activities involving the Installation. The scope of regulation 8 of the Offshore Installations and Pipeline Works Regulations is therefore very wide and includes operators, owners, concession owners, employers, employees, managers, and people in charge of visiting vessels or aircraft.

(Reference: Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995, Regulation 8, Guidance Note 56.)

NOTE

Throughout these Guidelines wherever the terms "OIM" or "Master" are used, this should be interpreted as meaning OIM, Master or their respective delegates.

References

- Emergency Response & Rescue Vessel Survey Guidelines. OEUK / ERRVA
- Guidelines for the Management of Emergency Response for Offshore Installations – Issue 3, Oil & Gas UK.
- OPITO Approved Emergency Response Standards for Standby Vessel Crew
- The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 .
- The Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995 and Guidance.
- SOLAS CH V Ord. Reg. 4 of MS (Safety of Navigation) Regulations 2002 SI 1473
- Code of Safe Working Practices for Merchant Seafarers
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, IMO
- HSE Offshore Technology Report, OTO95-038, Review of Probable Survival Times for Immersion in the North Sea, January 1996

List of Abbreviations

Table 1: List of Abbreviations Used Within the Document

Abbreviations	Definitions
ACoP	Approved Code of Practice
ARPA	Automatic Radar Plotting Aid
BROA	British Rig Owners Association
C&C	Command and Control
CPA	Closest Point of Approach
DC	Daughter Craft
DEFRA	Department for Environment, Food and Rural Affairs
EPIRB	Emergency Position Indicating Radio Beacon
ERRVA	Emergency Response and Rescue Vessel Association
ERRV	Emergency Response and Rescue Vessel
ERP	Emergency Response Plan
ETA	Estimated Time of Arrival
FRC	Fast Rescue Craft
HSE	Health and Safety Executive (Energy Division)
IADC	International Association of Drilling Contractors -North Sea Chapter
ISM Code	The International Safety Management (ISM) Code
IUOOC	Inter-Union Offshore Oil Committee
MCA	Maritime and Coastguard Agency
MNTB	Merchant Navy Training Board
MOB	Man Overboard
MRCC	Maritime Rescue Co-ordination Centre
OIM	Offshore Installation Manager
OPRC	Oil Pollution Preparedness, Response and Cooperation
OSCP	Oil Spill Contingency Plan
OSC	On-Scene Co-ordinator
PFEER	The Offshore Installations (Prevention of Fire, Explosion and Emergency Response) Regulations 1995 (SI 1995 No.743)
PLB	Personal Locator Beacon
POB	Persons on Board
PPE	Personal Protective Equipment

Abbreviations	Definitions
ROV	Remote Operated Vehicle
SAR	Search and Rescue
SEERAD	Scottish Executive Environment and Rural Affairs Department
SI	Statutory Instrument
SITREP	Situation Report
SMC	SAR Mission Co-ordinator
SOPEP	Shipboard Oil Pollution Emergency Plan
SRU	Search and Rescue Unit
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
TCPA	Time to Closest Point of Approach
TEMPSC	Totally Enclosed Motor Propelled Survival Craft

Source: ERRVA/OEUK

Definitions and Explanation of Terms

Table 2: Definitions and Explanation of Terms Used in this Document.

Term	Description
Data Card	Data Cards are supplied to the ERRV Master by the Installation duty holder and may be of two types, i.e., the Installation Data Card and/or the ERRV Data Card. Installation Data Cards include details of: • arrival procedures • marine hazards posed by the Installation • checks to be made prior to approaching the Installation • cargo reception facilities • communication frequencies (For a specimen of the above refer to the "Guidelines for Offshore Marine Operations" at www.g-omo.info) ERRV Data Cards may either supplement the Installation Data Card or be sufficient in themselves. In the latter case they should include the above information plus details of:- • evacuation equipment • escape routes • reporting arrangements • emergency response actions (Refer Appendix 'A' for further details.)
Daughter Craft	"A high-speed manoeuvrable craft which has an enclosed cabin for crew and survivors, deployed from an ERRV (mother ship) for the purposes of recovery and rescue of survivors and marshalling or towing of TEMPSC's or life rafts. The subsidiary role of the Daughter Craft may be to provide close standby and cover for helicopter operations whilst the ERRV is engaged elsewhere. Section 3.11 of these Guidelines state the Functions / Operating Limits / Working Hours that a Daughter Craft is governed by when operating away from the ERRV (mother ship).
Duty Holder	The offshore installation Operator or the Owner of a mobile installation having responsibility under the Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations (PFEER)
Escape	The process of leaving the Installation in an emergency when the evacuation system has failed; it may involve entering the sea directly and is a 'last resort' method of getting personnel off the Installation. Ref: PFEER ACOP, Para. 159.
Evacuation	The leaving of an Installation and its vicinity in an emergency in a systematic manner and without directly entering the sea. Ref: PFEER ACOP, Para. 19.
Fast Rescue Craft	A high-speed, manoeuvrable craft which may have an enclosed cabin for crew and survivors, deployed from an ERRV for the purposes of recovery and rescue of survivors and marshalling or towing of TEMPSC or life rafts.

Term	Description
Good prospect of being recovered, rescued, and taken to a place of safety	Arrangements designed to give a good probability - in all but the most severe storm conditions and sea states - of rescuing, recovering, and taking to a place of safety persons who evacuate or escape from an Installation, or who fall overboard or are involved in a helicopter ditching on take-off or landing. Ref: PFEER ACOP Para. 155.
Installation	A structure which is, or is to be, or has been used, whilst standing or stationed in water or on the foreshore or other land intermittently covered with water, for exploration for or exploitation of mineral resources or related purposes. Examples of types of structures are:- • fixed production platforms • floating storage units • mobile offshore drilling units • flotels • floating production, storage, and offloading units
On-going, On-board Development and Training Programme	A Continuous Professional Development programme designed to consolidate and complement the onshore initial and specialist training undergone by ERRV crews and to enhance their knowledge, skill and understanding of their roles. The programme may also make provision for location specific emergency contingency training.
On Scene	The optimum location close to the 'Scene of Incident, where an ERRV and/or Rescue Craft (DC or FRC) could provide immediate assistance to persons in the sea, following an initial assessment of the incident itself.
On-Scene Co-ordinator (OSC)	A person designated to co-ordinate on-scene SAR operations. The OIM of a stricken installation assumes the role of OSC at the outset of an incident but this must be confirmed with the SMC at the earliest opportunity. In the event of an evacuation the ERRV Master may be asked by the SMC to assume the role while recognising that the priority is to save life. If other options are available, the most suitable asset will be appointed by the SMC.
Place of Safety	An onshore or safe offshore location or vessel where medical treatment and other facilities for the care of survivors are available. Ref: PFEER ACOP, Para. 152 & 165. (See Annex 12- Oil & Gas UK definition of Place of Safety). See also Appendix 'J' of this document.
Recovery	Removal of survivors to a Place of Safety. Ref: PFEER ACOP, Para. 165.
Rescue	Removal of persons from the sea. Ref: PFEER ACOP, Para 165.
Safety Zone	An area considered to be contained within a 500-metre radius of an Installation and commonly referred to as the "500 metre Zone".
Search and Rescue Mission Co-ordinator (SMC)	A person in charge of the SAR operation until recovery and rescue has been affected. The UK Coastguard will assume the SMC role for all major incidents and/or where operator requests SAR facilities from the rescue services. IAMSAR defines SMC as "SAR Operations are normally carried out under the direction of an SMC, who is usually the supervisor of a Rescue Co-ordination Centre (RCC) or Rescue Sub-Centre (RSC) watch team. " In all SAR incidents, HM Coastguard will retain the role of SMC. Down-manning's handled entirely

Term	Description
	in-house by the Duty Holder are not treated as SAR. In Emergency Evacuations i.e., where the IAMSAR emergency phases – Distress or Alert – have been declared are clearly SAR and the SAR operation will come under the overall co-ordination of HM Coastguard.

Source: ERRVA/OEUK

Introduction

These Guidelines are intended to provide Masters and crews of ERRV's, OIM's and other relevant offshore personnel, with general guidance on the conduct of their activities as part of the effective arrangements for the recovery and rescue of personnel.

These Guidelines do not cover Merchant Shipping statutory requirements and are not specific to any nominated field, or Installation. For details of a specific Installation refer to the appropriate Installation Data Cards which complement these Guidelines. (Ref. Appendix 'A' for an example of an Installation Data Card for vessels standing by Offshore Installations).

These Guidelines complement the industry: "Emergency Response & Rescue Vessel Survey Guidelines".

Whilst in transit, mobile units, e.g., drilling or accommodation units, are not regarded as Installations and normally do not require an ERRV. However, if an ERRV is employed as an escort, the Master should act in accordance with the relevant sections of these Guidelines.

ERRV's which incorporate other duties in their work-scope should seek further guidance from publications relevant to these operations, e.g., **"**Guidelines for Offshore Marine Operations (GOMO)**"**

These Guidelines are a living document and after experience in their use or changes in operating practice, may need to be reviewed and amended.

Suggestions for amendments should be sent to either:-

Table 2: Addresses for Suggested Amendments

OEUK	ERRVA
4th Floor	The Secretary
Annan House	ERRVA Limited
33-35 Palmerston Road	11 Bon Accord Crescent
Aberdeen	Aberdeen
AB11 5QP	AB11 6DE
Tel: 01224 577250	Tel: 01224 959836
info@oeuk.org.uk	steveferguson@errva.org.uk

Source: OEUK/ERRVA

1 GENERAL GUIDANCE

1.1 Fundamental Duties of an ERRV

The fundamental requirements which an ERRV must satisfy are, that it should be capable of:-

- Rescuing from the water or recovering persons and providing them with medical aid.
- Acting as a "Place of safety" in accordance with PFEER.
- Providing on scene co-ordination, as required, in accordance with relevant Installations' Emergency Response Plan (ERP).
- Participating fully in the execution of the Installation collision avoidance strategy e.g. to monitor the Safety Zone, warn approaching vessels and the Installation of the risk of collision and prevent same where possible.
- Acting as a reserve radio station.

If the emergency response and rescue vessel is utilised in an additional role then an assessment should be made of any additional risks involved any that could impact on its recovery and rescue role. The risk assessment should be carried out by knowledgeable, experienced, and capable persons closely involved with the work. All risks should be considered together, and mitigating or remedial measures should be put in place to reduce the total residual risk to an acceptable level. Where the assessment has used the terms low, medium, and high the residual risk should not be high. A copy of the details of the risk assessment should be kept on board the ship and should be made available to surveyors and other interested parties at their request.

The "Guidelines for Offshore Marine Operations" apply to all vessels engaged in the carriage of cargo, towing, anchor-handling, and supply operations relative to offshore operations in the United Kingdom. ERRV crews engaged in these operations should be familiar with, and operate to, these guidelines.

1.2 Legal Requirements – PFEER

The Offshore Installations (Prevention of Fire, Explosion, and Emergency Response) Regulations, 1995 (SI 1995 No. 743) (PFEER) is the principal legislation governing offshore emergency response.

Regulation 17 of PFEER states that:

"The duty holder shall ensure that effective arrangements are made, which include such arrangements with suitable persons beyond the Installation, for:

a) recovery of persons following their evacuation or escape from the Installation and

b) rescue of persons near the Installation and

c) taking such persons to a place of safety

and for the purposes of this regulation arrangements shall be regarded as being effective if they secure a good prospect of those persons being recovered, rescued and taken to a place of safety."

The Approved Code of Practice (ACoP) accompanying the above regulation states that:

"There are many circumstances for which only a suitable vessel standing-by will provide effective arrangements and in these circumstances, such a vessel will need to be provided.

Such vessels may be shared between Installations if this does not compromise the objective of securing a good prospect of recovery and rescue."

The ACOP also sets out criteria for vessels standing by Installations. (Such vessels are commonly known as ERRV's).

In United Kingdom territorial waters adjacent to Northern Ireland, the Offshore Installations (Prevention of Fire, Explosion and Emergency Response) Regulations (Northern Ireland) 1995 (SI 1995 No. 345) apply.

1.3 Other Guidelines and Standards relating to ERRV's.

The following documents also directly relate to the operation of ERRV's:

- Guidelines for the Management of Emergency Response, OEUK
- Emergency Response & Rescue Vessel Survey Guidelines. (Issued jointly by OEUK and ERRVA to provide information on technical standards for ERRVs and their equipment.)
- OPITO Approved Emergency Response Standards for ERRV Crew. (Details the levels of competence required by ERRV crews and how these are achieved and demonstrated.)
- NMD Regulation of 16 October 1991 No. 853 concerning Standby Vessels, (Norwegian Maritime Directorate construction, equipment, and manning regulations for ERRV's)
- NOGEPA Industry Standard No. 102 Safety Standby Vessels – 26th June 2019
- NOGEPA Industry Standard No. 34 – Rescue at Sea – 17th March 2021853

1.4 Responsibilities of OIM and ERRV Master

The OIM is the manager of the Installation and is responsible (on behalf of the Installation's duty holder) for the safety of the Installation and those on board. (Ref. "OIM Responsibilities and Functions")

The Master of the ERRV is always responsible for the health, safety and welfare of his crew and the safety of the ERRV. (Reference: SOLAS CH V Ord. Reg.4 of MS (Safety of Navigation) Regulations 2002 SI 1473)

1.5 Planning and Co-operation

The duty holder shall provide the ERRV with appropriate information from the Installation Safety Case and Emergency Response Plan (ERP) permitting the Master and crew to perform their duties effectively.

The circumstances under which an ERRV is expected to undertake its emergency role are included in the Installation's ERP.

Consultation between the duty holder and the ERRV operator in the compilation of the ERP should include:-

a) ERRV capabilities and required performance standards

b) The responsibility of the Master of the ERRV for the organisation and control of:-

   I. The search for and rescue of survivors in the sea

   II. The recovery of persons from boats or rafts used in an evacuation

   III. Other vessels proceeding to assist.

c) Clear guidelines in respect of the responsibility of the Master of the ERRV and the OIM, for the transfer of responsibility from the OIM and the circumstances under which the Master should act as On-scene Co-ordinator.

d) An agreed procedure for the transfer of responsibility of the control of search and rescue to the relevant Search and Rescue Organisation and involvement in implementing the duty holders' collision avoidance strategy. This may include the detection of threatening vessels, the monitoring and challenging of such vessels together with the co-ordinating and communication of the response and developments to the Installation.

e) Any additional information specific to a particular Installation extracted from the safety case and/or Installation ERP.

An ERRV Emergency Response Plan for Offshore Emergency and/or Evacuation or Escape is included as Appendix 'B' and an example of a Collision Avoidance Strategy covering point (d) is included in Appendix 'C'. All the above may be entered on the Installation specific Data Card.

It is important that, as soon as the ERRV Master becomes aware of any circumstances affecting the ERRV's ability to undertake its role and/or achieve agreed performance standards, the Master advises the OIM accordingly.

1.6 Installation Emergency - Contingency Planning

The ERRV operator and Master should jointly prepare contingency plans covering the response of the ERRV for any emergency event affecting the Installation.

1.7 ERRV Group Manning

The crew of an ERRV should be as shown below.
Certification where not noted should be appropriate to Flag State requirements.

Table 4: Key Certification Requirements

ERRV Group	Total Manning	Grade 1 Seaman (minimum)	Grade 2 Seaman (minimum)	Advanced Medical Aiders	FRC Crew
'A'	15	2	3	2	9 (includes 3 Coxswains)
'B'	12	2	2	1	6 (includes 2 Coxswains)
'C'	9	2	1	1	4 (includes 2 Coxswains)

Source: OEUK/ERRVA

NOTES ON TABLE:

a) The total manning shown for a Group 'C' ERRV assumes that only one Fast Rescue Craft is manned and in use at any one time.

b) The Master or Chief Officer shall have at least two months sea service on an ERRV.

c) At least two crew members other than the Master shall each have two month's ERRV experience.

d) Advanced Medical Aiders shall not be the Master or a member of a Fast Rescue Craft crew.

e) Where Daughter Craft are carried, the Total Manning may require to be increased to reflect the frequency of deployment.

f) Where the ERRV is required to undertake the carriage of cargo, the Competency of the Master and Mates must be appropriate to the role.

g) The roles of Group 'A', 'B' and 'C' ERRV's covering a single Installation are defined as:-

I. Group 'A' ERRV is one acting as ERRV for an Installation which is manned by particularly large numbers, significantly i.e., over 300, such as during the hook-up and commissioning phases of field development. The limit on actual capacity shall be determined by assessment of physical space available to survivors based upon zero point five metres squared ($0.5m^2$) per person in alleyways and public spaces together with considering the use of all available seats and bunks including crew cabins. A Stability assessment shall also be undertaken.

II. Group 'B' ERRV is one acting as a ERRV for an Installation which has a manning level falling between those attended by Group 'A' or 'C' ERRV's.

III. Group 'C' ERRV's act only as ERRV for an Installation which is manned by very small numbers e.g., up to about 20, in the southern sector of the North Sea and some sheltered areas.

h) For ERRV's covering more than one Installation, reference should be made to the specific sharing arrangements.

1.8 ERRV Crew Training and Qualifications

Note: Fast Rescue Craft Crew may either possess OPITO or STCW'95 Rescue Craft Certificates

Table 5: Specific ERRV Training Requirements

Training Course/Rank	Master	Mates	DC Coxswains	FRC Coxswains	Rescue Craft Boatmen	Advanced Medical Aiders
Initial Training in Shipboard Operations (ITSO)	*See Note (a)*	Yes	Yes	Yes	Yes	Yes
ERRV Crew Advanced Medical Aid (AMA) Training[1]	No	*Optional*	No	No	No	Yes
ERRV Daughter Craft Coxswain Training[2]	No	*Optional*	Yes	*See Note (c)*	No	*See Note (d)*
ERRV Crew Fast Rescue Craft Coxswain Training[3]	No	*Optional*	No	Yes	*See Note (b)*	*See Note (d)*
ERRV Crew Fast Rescue Craft Boatman Training[4]	No	*Optional*	No	No	Yes	*See Note (d)*
Command and Control for Masters and Mates[5]	Yes	*Optional*	No	No	No	No
ERRV Crew Further Advanced Medical Aid (AMA) Training[6]	No	*Optional*	No	No	No	Yes
STCW' Proficiency in Fast Rescue Boats[7]	No	*Optional*	*Optional*	*Optional*	*Optional*	No
Ongoing Onboard Development and	Yes	Yes	Yes	Yes	Yes	Yes

1 AMA validity is 2 years.

2 DC Coxswain validity is 3 years subject to continued OODTP training.

3 FRC Coxswain Validity is 3 years subject to continued OODTP training.

4 FRC Boatman Validity is 3 years subject to continued OODTP training.

5 Command and Control Validity is 3 years subject to continued OODTP training.

6 Further AMA Validity is 2 years.

7 Owners may choose to train FRC crew to STCW standards instead of the OPITO FRC Coxswain Standard

Training Course/Rank	Master	Mates	DC Coxswains	FRC Coxswains	Rescue Craft Boatmen	Advanced Medical Aiders
Training Programme (OODTP)						

Source: OPITO Training Standards

Further Notes on Table 5

(a) Master's and Chief Engineers are exempt from taking the ITSO Course.
(b) FRC Boatman plus 3 months as an FRC Boatman are the prerequisites for FRC Coxswain
(c) FRC Coxswain plus 3 months service as an FRC Coxswain is a prerequisite for DC Coxswain.
(d) Dedicated Ship-based Advanced Medical Aiders shall not form part of rescue craft crews.
(e) The LSA Code requires 3 FRB Coxswains per designated SOLAS FRB.

1.9 Crew Fitness

All marine crew members shall undergo medical examination in line with MSN 1839 (M) "Maritime labour convention: medical certification. Whilst determining if a crew member is fit to work on an ERRV, due consideration must be given to the role that the individual crew member is required to fulfil and the level of physical work that such a role will entail, in which case additional physical tests may be required.

1.10 Periods of Duty

In recognition of the conditions likely to be experienced on vessels standing by offshore Installations, the period of duty on board should, under normal circumstances, be limited to a maximum of twenty-eight days on location plus an allowance for the passage to and from port.

Crew members shall be granted the same, or longer, periods ashore between voyages in relation to their preceding period on location. Crew members shall be encouraged to take their full leave. However, if demanded by exceptional operational requirements, and with the agreement of the crew member, individuals may return to sea after a minimum of seven days ashore. Irrespective of this, the overall aim shall be to seek an equal balance of sea time and leave over a reasonable period.

1.11 Training

All members of the crew shall receive training appropriate to their role, in accordance with the Statutory Requirements laid down in STCW as a qualifying standard, and with any additional industry requirements laid down by OPITO.

Operators and Masters of ERRV's shall maintain a full record of all crew certification and crew must carry their own personal record of training. The duty holder, or appropriate Regulator, shall make all certification available for inspection.

1.12 English Language Fluency

It is essential that unambiguous, clear, and accurate communication takes place in an emergency. Seafarers whose natural language is not English, must be able to demonstrate a good understanding of both the spoken and written English language, and have passed a Marlins Test at an approved Marlins Test Centre in accordance with MGN 221 (M) - Annex 4.

2 ROUTINE OPERATIONS - MOBILISATION TO LOCATION

2.1 Pre-Sailing and On-Passage Checks.

Before sailing, checks shall be performed to ensure the ERRV and its crew are fully able to undertake all relevant duties upon arrival at location.

All ERRV systems shall be checked and proven operational, for the standby role prior to commencing duties on location. Deficiencies that affect the ERRV role shall be notified to the OIM.

2.2 Pre-arrival Documentation Check.

On arrival at location the ERRV shall, as a minimum, be in possession of:-

- OEUK/ERRVA Emergency Response and Rescue Vessel Management Guidelines
- OEUK/ERRVA Emergency Response and Rescue Vessel Survey Guidelines.
- OEUK Guidelines on Emergency Response for Offshore Installations.
- Data Cards for the Installation being covered (either Installation Data Card or ERRV Data Card or a combination of both as required).
- Documented procedures for sharing of ERRVs (if applicable).
- Documented procedures for Daughter Craft operations (if applicable).
- Documented procedures for PLB system operations (if applicable).
- Documentation as noted under Section 1.5, where not contained in the Data Card(s).
- Other documentation required by Merchant Shipping legislation.
- OIR 13 HSE/OSD Infringement of Safety Zone Report.
- OEUK Guidelines for Ship/Installation collision avoidance.

2.3 Information to be Exchanged by Installation and ERRV's.

Reporting arrangements may vary depending on the assigned Installation and reference should be made to the appropriate Data Card for information.

The incoming ERRV shall be fully briefed by the ERRV being relieved on relevant Installation and field activities or conditions. Appendix 'M' in this document contains suggested content for ERRV Handover Checklists.

The OIM shall provide the Master of the incoming ERRV with details of the Installation's drill and exercise programme and ensure that the ERRV is included wherever this is appropriate. In turn the OIM should be briefed on the ERRV exercise programme for the tour of duty (Ref. Section 4.4).

2.4 Entry to Safety Zone.

Entry to the Safety Zone will normally be subject to permission from the Installation OIM. Refer to the appropriate Installation Data Card for the entry procedure.

In an emergency, and always navigating with extreme care, the ERRV may enter the Safety Zone without permission and on the initiative of the Master.

Prior to entry into the 500m Safety Zone, the ERRV shall have completed all pre-entry checks required by the Duty Holder including the relevant data card(s).

Checks shall also be performed by the Installation in addition to any ERRV checks.

3 ROUTINE OPERATIONS

3.1 Positioning.

The ERRV shall take station such that it maintains the optimum position for recovery and rescue and collision risk monitoring purposes as agreed with the assigned Installation(s). The positioning of the ERRV should be appropriate to ongoing activity in the vicinity and should not hazard the ERRV, the Installation or safe manoeuvring of other vessels.

At all times the appropriate recovery and rescue and collision risk monitoring performance standards must be achievable.

In cases where an ERRV covers more than one Installation, special provisions apply and reference shall be made to the Installation operator's procedures.

3.2 Errant Vessel Collision Risks to Installations.

ERRV's shall always be aware of the vulnerability of Installations to impact from vessels. Therefore, it is imperative that all marine movements in the vicinity are monitored. (For information on a specific Installation's vulnerable areas refer to the appropriate Data Card.)

The installation Duty Holder has a legal duty to have a system in place to detect vessels which may collide with the installation. In most cases the ERRV crew shall assist in this respect by ensuring that they are aware of all vessel activity within the area (including invited vessels within the 500m safety zone) and that effective communication methods have been established with these vessels. A primary role in effective Collision Risk Monitoring is to be able to identify and intercept any vessels on a potential collision course with the Installation(s) using all available means such as, field radar, if applicable, vessel's own radar, AIS, radio, and visual observations. Continuous watch shall be maintained around each manned Installation. The ERRV shall always be ready to warn the OIM of any potential collision threat, long before such an event could occur and in sufficient time for the OIM to muster the Installation personnel. (Ref. Section 3.6.3 and Appendix 'C')

Consideration shall be given to the provision of regular Situation Reports from all attendant vessels to ensure the installation, other attendant vessels and the ERRV are aware of planned movements and operations.

ERRV's are generally required to play an active role in the duty holder's collision avoidance strategy. The strategy shall include minimum times for Installation personnel mustering and making ready to evacuate if necessary (Ref. Appendix 'C'). Consequently, the OIM in consultation with the ERRV Master shall endeavour to ensure that this role is co-ordinated with other duties that the ERRV is required to undertake. Any conflict between work-roles shall be communicated to the Installation OIM and mutually resolved as soon as it becomes apparent.

It is of paramount importance that responsibility, or delegated responsibility, for Collision Risk Monitoring is always clearly understood. Should the ERRV be unable to effectively monitor traffic movements in the vicinity, a formal handover of this duty to the installation must take place. This

required handover could be necessary, for example, if the ERRV is having technical difficulties or radar 'shadowing' is experienced when close to a surface installation causing radar blind sectors.

A video camera and stills camera with sufficient memory and battery power shall be retained onboard the ERRV to record evidence of any unauthorised entry into the installation 500m safety zone.

3.3 Manoeuvring within the Safety Zone

Before entering the Installation 500m Safety Zone, the ERRV Master or, if appropriate, the rescue craft Coxswain shall ensure that checks required by the Duty Holder, and those described on the appropriate Data Card, have been completed, familiarisation with the location of hazardous areas within the Safety Zone has taken place, and permission has been obtained from the OIM or delegate, to enter the Safety Zone. (Ref. Section 2.4)

3.4 Fishing

3.4.1 Fishing Vessel Activity

The ERRV Master shall inform the Installation OIM of any fishing vessel activity observed within the vicinity of pipelines or other assets. The Duty Holder is responsible for ensuring that the ERRV Master is made aware of all areas that require guarding, including minimum distances from the hazards that must be maintained. The OIM shall inform the ERRV of the appropriate action required in accordance with the ERP.

Fishing vessels considered to be encroaching on the mooring spreads of mobile Installations should be warned of the hazard by the ERRV and referred to the Installation for precise details of the mooring assemblies and pattern.

3.4.2 Fouled Nets

In the case of fishing vessels reporting gear fouled on pipelines or other subsea assets, the ERRV shall relay details directly to the Installation. The position of the fishing vessel shall be determined as accurately as possible by the ERRV and logged. Communications between the fishing vessel, ERRV and Installation shall also be logged.

If required to leave station to render assistance or determine the position of a fishing vessel, this shall only be done with the knowledge and agreement of the Installation OIM.

3.4.3 Fishing from ERRVs

Fishing from ERRV's is prohibited within the area surrounding both surface and sub-surface infrastructure. Lost hooks and lines present a significant threat to the safety of divers, ROV operations and the integrity of the ERRV.

3.5 Loss of Equipment to Seabed

Any ERRV which loses equipment overboard shall, as soon as practicable, report the loss, and the position at the time of loss, to the Installation. The details shall be entered in the ERRV's log.

3.6 Close Standby

3.6.1 Definition

Close standby is the position taken by an ERRV (or Daughter Craft/approved alternative), near to an Installation to provide recovery and rescue arrangements within the required performance standards.

When considering the various factors affecting the decision to adopt close standby, the OIM in consultation with the Master shall bear in mind that shipboard survivor Mechanical Recovery Devices require plenty of sea-room to manoeuvre the vessel so are severely limited in their capability to be used close to an Installation having none of the freedom of a deployed rescue craft.

It should be noted that in many cases, rescue craft are often unable to safely manoeuvre underneath offshore installations, even in calm weather. Such scenarios should be subject to a site-specific risk assessment involving both the ERRV and Offshore Installation personnel.

When an ERRV (or Daughter Craft/approved alternative) is engaged on close standby it shall remain dedicated to that activity and maintain the optimum position for affecting a rescue.

At no time should an FRC be used for independent standby.

3.6.2 Planning and Communications with over-side Work Parties during Close Standby

The Installation OIM shall advise the ERRV Master (or DC Coxswain) of the number of persons in an over-side working party, the location of deployment of the work party, and the nature of work to be carried out.

Radio communications between all parties shall be tested and proven on an agreed frequency prior to deployment. Communication integrity shall be maintained throughout the period of close standby.

The ERRV Master (or DC Coxswain) shall be advised by the OIM of the work progress, any suspension, and the estimated and final completion times. Planning and prior warnings to the ERRV and DC Coxswain are extremely important for maintaining recovery and rescue coverage. The DC crew are limited in the time and weather conditions that they can operate independently from the ERRV mother craft. Work party breaks are opportunities where DC crew changes can be carried out so should be communicated to the craft allowing adequate time for such an exchange to take place before work can be resumed.

When requested to provide such support the Master shall take the following actions:-

1. Establish details of personnel at risk, including numbers and locations.

2. Ensure that personnel and equipment on the vessel are at the required state of readiness.

3. Ensure that the vessel is maintained in a position relative to the facility and the environment such that rescue facilities can be deployed in the most expeditious manner.

4. Ensure that the terminology to be used has been agreed and understood by all involved.

5. Ensure that communication have been established and are maintained with the watch-men responsible for monitoring the activities of each work party.

In addition, the Master should ensure that those responsible for work understand that a visual watch of the various worksites cannot always be maintained from the vessel. Any request to maintain such a watch shall be challenged, since this could compromise the safe navigation of the vessel and may be impossible where several worksites are involved.

Should poor visibility be experienced, or other conditions making it difficult for the ERRV (or DC) to meet the recovery and rescue performance standards, over-side work shall cease. The ERRV Master (or DC Coxswain) shall then inform the OIM of the inability to meet the appropriate performance standard and request permission to withdraw. This communication shall be logged. In forecasted worsening conditions, their effect on safe recovery of deployed DC to the ERRV shall also be considered. (Refer Appendix 'G')

3.6.3 Radar Watch during Close Standby

Bridge watchkeepers shall be aware of the detection limitations of vessel radar due to factors such as height of aerial, attenuation of signal from precipitation, wavelength in use, and shall use all other means at their disposal to monitor traffic such as visual sighting, AIS, etc., to supplement detection capability.

Shadowing caused by being close to the structure of the installation, may cause significant blind sectors for radar detection.

When possible and after consultation with the OIM, the ERRV shall regularly change vessel position to permit monitoring of previously masked areas.

3.7 Helicopter Operations

3.7.1 Notification of Helicopter Operations

Proposed helicopter flight schedules to and from an Installation shall be advised to the ERRV by the Installation OIM well in advance of proposed flight times to allow prior planning by the ERRV. The ERRV Master shall advise the installation OIM of the ERRV's ability to provide effective recovery and rescue arrangements and update accordingly if weather conditions deteriorate or are forecasted to do so.

The OIM shall advise the ERRV Master of current helicopter movements in adequate time to permit the ERRV or DC to reach the optimum position from which to affect a rescue.

3.7.2 Positioning during Helicopter Operations

When helicopter operations are scheduled, the ERRV (or DC where appropriate) shall be in a position to respond to a ditching in the vicinity of an Installation within the relevant recovery and rescue performance standards. The ERRV Master shall consider the weather, sea conditions and required field collision risk monitoring requirements and take position accordingly. (Ref. Section 3.1)

The ERRV, or DC, shall avoid taking position directly beneath the projected flightpath of the helicopter.

Where conditions change such that the agreed response times are prejudiced, the ERRV Master shall advise the Installation OIM and this communication shall be logged. (Ref. Appendix 'G')

3.7.3 Cover by ERRV and Daughter Craft

When Daughter Craft are included in arrangements for covering helicopter operations, crews shall be briefed by the Master on their responsibilities. Radio communication between ERRV and DC shall be regularly checked.

3.8 Personal Locator Beacons (PLB)

The OIM shall inform the Master when PLB equipment is to be used.

Where PLB equipment is provided, the Master shall ensure that locator equipment on board is activated when relevant operations are advised. Malfunction of any part of the equipment shall be reported immediately by the Master to the OIM and logged. Adequate training shall be provided to the ERRV crew prior to utilisation of the equipment. . (Ref. Appendix 'N')

The duty holder and ERRV operator shall ensure before deployment of the vessel that the PLB and locator equipment are compatible.

3.9 Surveillance

3.9.1 Watch Keeping

At all times on location, a visual, radar and radio watch shall be maintained on the bridge to monitor marine and aviation activity in the area and alert the Installation in accordance with the requirements of the Emergency Response Plan.

Monitoring shall also include a pollution watch in the vicinity of the Installation.

3.9.2 Security - Errant Vessels

The ERRV shall promptly report to the Installation any vessels which appear to present a potential threat. (Ref. Section 3.2).

Without prejudice to its own safety, the ERRV shall endeavour to prevent unauthorised vessels from entering the Safety Zone.

Any communication with unauthorised vessels, which have a potential to enter the Safety Zone, shall be logged together with available details of flag, name, identifying marks, Port of Registry or any other information which helps to identify the vessel. Where possible, photographic evidence shall be obtained. Photographs shall, where possible, include Installations and/or other vessels that can permit an assessment to be made of distance and scale. The position of the vessel relative to the Installation shall be plotted by radar. All breaches of the safety zone shall be reported both verbally and in writing to the OIM. Infringements shall be reported to the Health and Safety Executive using the OIR 13 'Infringement of Safety Zone' report form. Please see HSE Operations Notice 11 Rev1 – 27th April 2021 (https://www.hse.gov.uk/offshore/notices/on-11.htm)

It is the responsibility of the duty holder (Installation) to complete the form and forward to the HSE.

3.9.3 Buoyed Moorings Check

In the case of Installations with buoyed moorings, the buoy pattern shall be checked regularly as instructed by the Installation and any buoy missing, adrift, damaged, or riding low in the water reported immediately to the OIM. Extra care shall be taken when moorings have subsurface buoyancy within their systems as these may not be visible at the surface and could present a fouling or collision threat to the ERRV.

Where recovery and rescue duties are not compromised and an ERRV has the capability to safely recover a drifting buoy, it may do so after advising and receiving permission from the Installation. If recovery of the buoy presents an unacceptable risk to personnel or the ERRV's equipment (especially survivor recovery and rescue equipment) it should not be attempted and the buoy's position, and observed drift, reported to the Maritime and Coastguard Agency.

3.9.4 Installation Navigation Aids/Marks

At intervals agreed with the Installation, the ERRV Master shall monitor the Installation navigation aids, including associated navigation marks and report any failures.

When required by the Installation OIM, a reportable navigation aids check should be performed. (Ref. Appendix 'D' for a typical checklist.)

3.10 Recovery and Rescue Equipment

3.10.1 Checks of Equipment

All equipment critical to recovery and rescue operations and the safety of the ERRV and its crew, shall be tested in accordance with the ERRV's Planned Maintenance System.

The ERRV shall complete all pre-entry checks required by the Duty Holder.

Any critical equipment that is found to have failed shall be reported immediately to the supported installation OIM(s).

3.10.2 FRC Deployment

FRC's cannot operate autonomously from the mother vessel and are constrained by visibility, weather, equipment levels, and communications. The ERRV must always be able to observe the FRC.

While on location an ERRV shall not normally deploy FRC for any purpose other than an emergency, testing of FRC and/or launch and recovery systems, or crew training. Any request to utilise an FRC for other duties must be agreed in advance by the Installation OIM, the ERRV operator and the Master. The final decision on whether to launch a FRC lies with the Master in consultation with the FRC coxswain.

Except in the case of a Group 'C' ERRV, it should be possible for two FRC's to operate simultaneously. However, the second craft should not be launched until the first is operating satisfactorily. (Ref. Section 1.7, Notes on Table)

3.10.3 FRC Crew Pre-Launch Briefing

The ERRV Master and the FRC Coxswain shall have a clear understanding of the FRC's task before it is launched. The Coxswain shall be briefed with sufficient information to permit commencement of the task safely and minimise risk to personnel. FRC coxswains shall be responsible for ensuring that their crew are properly briefed and equipped for FRC operations.

3.10.4 FRC Handling

FRC speed and manoeuvring shall always be appropriate to the prevailing sea conditions to ensure the safety of crew and survivors and minimise any further injury to the latter.

3.10.5 FRC Proximity to Installations

When manoeuvring near an Installation, FRC crews shall be aware of the structure's configuration and associated hazards. (Ref. appropriate Data Card.) FRC speed shall be regulated appropriately and the craft manoeuvred with great care.

Except in an emergency, FRC shall not proceed under an Installation without obtaining permission from the OIM and be subject to a full risk assessment process to establish levels of acceptability. The risk assessment should, as a minimum, consider submerged hazards such as cross-members, protrusions, hanging hazards from underneath the installation, potential dropped objects including discharges and increased sea turbulence.

3.10.6 FRC Radio Communications

Any FRC shall not be deployed from the ERRV until the FRC radios have been checked and proven for operation. When deployed the FRC Coxswain shall provide situation reports to the ERRV Master at agreed intervals.

If it is necessary for a FRC crewman to board a TEMPSC or similar craft, the crewman transferring should always be equipped with a radio and remain in contact with the FRC and/or ERRV.

3.11 Daughter Craft (DC)

3.11.1 Daughter Craft Functions

The primary purpose of DC is to recover and rescue persons in an emergency.

Subsidiary roles may be to provide close standby and cover for helicopter operations whilst the ERRV is engaged elsewhere.

The deployment of the DC should not compromise the ERRV's ability to perform its recovery and rescue role.

3.11.2 Daughter Craft Operating Limits

Daughter Craft must be accepted for use by the MCA or a UK Recognised Organisation as Offshore Rescue Daughter Craft constructed in accordance with the MCA Harmonised Small Commercial Vessel Code. They shall have undertaken full drop, capsize and water tightness tests in addition to routine physical inspections during construction. They will also have been subjected to a structural overload test and performance trials.

3.11.2.1 DC Load Line Exemption Certification

Note: Daughter Craft Load Line Exemption Certificates shall continue to apply until the new "Daughter Craft Safety Certificates for ERRV's" are formally introduced.

To permit them to operate independently from their ERRV, DC's require a Load Line Exemption Certificate issued by the Maritime and Coastguard Agency. The Load Line Exemption details the conditions under which the DC may operate. A typical Load Line Exemption may include:

a) Maximum wind/sea state for normal operation, e.g. 30 knots or 3.5m SWH;

b) Maximum distance of operation from the mother ERRV during normal operations, e.g. 10 nautical miles;

c) Maximum continuous working hours for the DC crew, e.g. 4 hours, davit to davit.

In the event that it is intended to apply for a Load Line exemption exceeding 10 nautical miles, then the assessment procedure in 7.4.2.3 Emergency Response and Rescue Vessel Survey Guidelines must be applied prior to any application to MCA.

3.11.2.2 Daughter Craft Safety Certificate for ERRV's

Note: Daughter Craft Safety Certificates for ERRV's are intended to replace Load Line Exemption Certificates towards the end of 2024 or during 2025.

Daughter Craft shall be constructed under provision of MCA Harmonised Small Commercial Vessel Code. To permit them to operate independently from their ERRV, DC requires a Daughter Craft Safety Certificate for ERRV's issued by the Maritime and Coastguard Agency or approved Classification Society.

The Safety Daughter Craft Safety Certificate for ERRV's details the conditions under which the DC may operate.

A typical Daughter Craft Safety Certificate for ERRV's may include the following combination of limitations:-

- Maximum wind/sea state for normal operation.
- Maximum distance of operation from the mother ERRV during normal operations.
- Maximum continuous working hours for the DC crew.

If it is intended to apply for a Daughter Craft Safety Certificate for ERRV's for independent operations exceeding 10 nautical miles from the mother vessel, then the procedure detailed in section 7.4.2 of the Emergency Response and Rescue Vessel Survey Guidelines must be followed prior to any application to the MCA.

3.11.3 DC Crew Pre-Launch Briefing

The ERRV Master and the DC Coxswain shall have a clear understanding of the DC's work-role before it is launched. The Coxswain shall be briefed with sufficient information to permit commencement of the task safely and minimise risk to personnel. DC coxswains shall be responsible for ensuring that their crew are properly briefed and equipped for DC operations.

3.11.4 DC Handling

DC speed and manoeuvring shall always be appropriate to the prevailing sea conditions to ensure the safety of crew and survivors and minimise any further injury to the latter.

3.11.5 DC Proximity to Installations

When manoeuvring near an Installation, DC crews shall be aware of the structure's configuration and associated hazards. (Ref. appropriate Data Card.) DC speed shall be regulated appropriately and the craft manoeuvred with great care.

Except in an emergency, DC shall not proceed under an Installation without obtaining permission from the OIM and be subject to a full risk assessment process to establish levels of acceptability. The risk assessment should, as a minimum, consider submerged hazards such as cross-members, protrusions, hanging hazards from underneath the installation, potential dropped objects including discharges and increased sea turbulence.

3.11.6 DC Radio Communications

DC shall not be deployed from the ERRV until the DC radios have been checked and proven for operation. When deployed the DC Coxswain shall provide situation reports to the ERRV Master at agreed intervals.

If it is necessary for a DC crewman to board a TEMPSC or similar craft, the crewman transferring should always be equipped with a radio and remain in contact with the DC and/or ERRV.

3.11.7 Daughter Craft Crew Working Hours

DC Crews are subject to fatigue due to continuous vessel motion when the craft are deployed for extended periods. In normal conditions a period of duty shall not exceed four hours inclusive of the transit time to/from its work location. After a period of duty, a DC crew shall be permitted a recuperation period on the ERRV, normally at least as long as their last period of deployment. The crew may carry out their normal duties on the vessel during this period.

The setting of performance standards for DC should take crew fatigue into account.

3.11.8 Daughter Craft Response Times

DC when deployed should be able to meet the recovery and rescue performance standards in the prevailing conditions taking due account of the condition of casualties, i.e., in all circumstances the care and welfare of the casualty shall take precedence.

3.12 Transfer Operations

3.12.1 Personnel Transfer between Installation and ERRV

Master's and OIM's shall comply with the duty holder's and ERRV operator's procedures for the transfer of personnel. Transfer shall not proceed until any conflict between the procedures has been resolved. Personnel transfer may proceed in an emergency or for special circumstances upon agreement between the Master and OIM after suitable risk assessment.

(Ref. The Code of Safe Working Practices for Merchant Seaman, Chapter 31 section 31.7, is relevant to this activity.)

3.12.2 Ship-to-Ship Transfer of Personnel by FRC

Ship-to-ship transfer offshore carries the risk of injury to personnel and damage to equipment that may be vital to emergency response operations. Before deciding to proceed, all aspects of the transfer shall be considered by both Masters and fully risk assessed. (Ref. Appendix 'E' for a checklist and note that the Code of Safe Working Practices for Merchant Seaman is also relevant.)

3.13 Weather Affecting Standby Cover

3.13.1 Exceptional Weather

If an ERRV is unable to maintain station because of exceptional weather conditions, the Master should advise the OIM of the Installation. As far as the safety of the ERRV and crew permits, the Master should endeavour to remain within the normal operating radius of the Installation, maintaining radio contact at intervals agreed with the OIM. (Ref. Appendix 'G')

However, it shall be noted that in exceptional weather conditions, the ERRV Master has a duty of care for his vessel and crew so may need to shelter from the weather. (Ref: OEUK HSTN0005 January 2019 – Operational Assessment during Emergency Response and Rescue Vessel Unavailability).

3.13.2 Adverse Weather Working Policy

The ERRV shall be supplied with relevant details of the appropriate Installation adverse weather working policy. However, nothing contained within the Policy with respect to the various weather limitations shall prevent the Master from setting temporary lower limits in situations where he believes an unacceptable risk to the ERRV and its crew is present. In this event, the OIM shall be informed. (Ref. Appendix 'G')

3.14 Communications

3.14.1 Communications Status

All communication equipment should be maintained in good working condition.

In addition to Flag state and Installation specific requirements, ERRV's are equipped with approved aeronautical radio facilities providing both communication and direction finding.

- All operators of Aeronautical Radio Stations must be in possession of a Restricted Operators Certificate of Competency issued by the Civil Aviation Authority
- Aeronautical Communications equipment requires an OFCOM licence.
- The Aeronautical Radio Station shall comply with Air Navigation Order SI 2016/765.

During service at its assigned Installation(s), an ERRV shall maintain a listening watch on all frequencies required by the OIM. (Refer to appropriate Data Card for required radio frequencies.)

3.14.2 Change of Status

Any circumstance which affects the efficiency of the ERRV while on station shall be communicated by the Master to the OIM and ERRV operators and logged.

3.14.3 Notification to ERRV of Installation Operations

The OIM shall ensure that the ERRV is kept advised of any operation that may affect its role. Such operations may include, but not be limited to:-

- Flaring of gas or oil including cold flaring and gas venting
- Activation of overboard discharges or vents.
- Planned movement of marine or helicopter traffic.
- Planned diving or remotely operated vehicle operations.

- Planned over-side working.
- Planned anchor-handling operations.
- Planned manning of normally unattended Installations.
- Radio silence periods

3.15 ERRV Records

Every ERRV shall maintain a complete record of events on board the ERRV and of those observed on, and in the vicinity of, the Installation, in the English language.

3.16 ERRV Sharing Methodology

In determining the feasibility and requirements for sharing of ERRV's, attention is drawn to the contents of Appendix 'K' as a guide to the methodology to be used. The most critical elements that must be considered are the ability of the ERRV to consistently meet both the recovery and rescue, and collision risk monitoring, performance standards.

3.17 Handover to Relieving ERRV

The ERRV on station shall advise the Installation OIM of any impending change-out and should not leave the vicinity without permission. (Refer to Appendix 'M' for an example checklist)

The ERRV on location shall not hand over to the relieving ERRV until:

- The relief ERRV is on location and the relieving ERRV Master has confirmed to the OIM that the ERRV, its equipment and its crew are operational.
- The relief ERRV Master has been briefed on all relevant information relating to the Installation(s) to be covered. The briefing shall include work or operations in progress. (Ref. Section 2.3).
- Any other requirement noted on the appropriate Data Card has been met.

4 VALIDATION AND VERIFICATION OF RECOVERY AND RESCUE ARRANGEMENTS

4.1 Assessment Methodology

The Duty Holder is legally obliged to establish performance standards that provide a good prospect of recovering and rescuing persons from the water in all but the most severe storm conditions and sea states.

In developing appropriate performance standards, account shall be taken of relevant information including:

- The compatibility, type, and performance of protective clothing likely to be worn, e.g., survival/immersion suits, thermal covers, spray hoods and lifejackets.
- The period for which people in the water might reasonably be expected to survive and subsequently recover after receiving medical attention on the ERRV or other place of safety.
- The number of persons likely to be in the sea.
- The weather and sea conditions likely to be encountered.

Duty Holders shall ensure that the choice of survival equipment is reflected by, and compatible with, their established performance standards. Guidance can be obtained from the HSE Offshore Technology Report OTO 95 038, "Review of Probable Survival Times for Immersion in the North Sea", issued December 1995.

4.2 Validation Trials

It is the responsibility of the duty holder to ensure that independently witnessed Validation Trials have been conducted to demonstrate that specified recovery and rescue performance standards can be met. These shall, as a minimum, be carried out annually per crew, but consideration shall also be given to further validations taking place following significant variation to operational circumstances especially changes of senior Officers or large changes of crew. All validation trials shall be suitably recorded to allow all times/results to be formally extrapolated accurately calculating the expected ERRV's performance in upper sea states.

The purpose of the following is to achieve a common approach to validation of performance standards, ensuring effective arrangements, i.e., arrangements that secure a good prospect of recovery and rescue and taking survivors to a place of safety, as required by Regulation 17 of the Offshore Installations (Prevention of Fire and Explosion and Emergency Response) Regulations, 1995, (PFEER). (Ref. Section 1.2 for details of Regulation 17.)

4.2.1 Overview

The objective of validation trials shall be to test the vessel and crew for the "worst expected case" which can be demonstrated by trialling two distinct scenarios, namely, -

- Scaffold collapse with 4 persons overboard.
- Multiple (21) persons in the water (helicopter ditching or Installation abandonment).

The scaffold collapse, above, relates to a work-party (4), who all enter the water whilst conducting planned overside work. This work is being carried out within the usual weather limitations, and with close standby cover provided by FRC stowed on the ERRV or a DC afloat, where fitted. Thus, the worst-case scenario for this event would be a maximum distance of approximately 500 metres transit to rescue 4 persons and in weather up to 3.5m significant wave height. The exercises however may be carried out in more benign weather conditions and validated by means of computed extrapolation subject to meeting the timing criteria below.

For the multiple (21) person trial, the worst-case scenario would be up to 7m sea conditions with the incident occurring at the most distant location being supported (by the ERRV in a sharing capacity) involving a full helicopter payload or predicted number of persons who may be forced to escape to sea after a fire / explosion, which could be up to 21 personnel. Some duty holders may have specific performance standards for such an incident using FRC or DC, and as such, would require computer extrapolation of the results up to the maximum FRC / DC sea state of 5.5m from the maximum expected distance.

The exercises above may be carried out in more benign weather conditions and validated by means of computed extrapolation, subject to meeting timing criteria below.

For validation of the Baseline Performance Standards the following procedures are suggested for survivor recovery trials, in liaison with the ERRV operator.

4.2.2 Baseline Recovery & Rescue Performance Standards

The objective of these recommendations is to provide a baseline standard for recovery and rescue in all but the most exceptional conditions and sea states. However, compliance with the Performance Standards noted herein, does not necessarily ensure a good prospect of recovery and rescue.

Baseline standards shall be subject to regular review in accordance with good safety management custom, and shall take account of improvements in equipment, knowledge, and practice. Any review shall be directed towards minimising personnel's exposure to harm or associated physical and mental stress.

Duty holders may set performance standards that differ from those denoted below if it can be demonstrated that the expected number of persons in the water, or expected survival time, has been robustly predicted.

4.2.2.1 Personnel entering the sea during overside work.

Where personnel enter the sea and rescue is timed from the point at which the ERRV is alerted:-

- a rescue craft shall be launched within two minutes.
- a rescue craft shall be in position to rescue the first casualty within four minutes.
- up to 4 personnel shall be rescued within 10 minutes and taken to a place of safety within 20 minutes by FRC or DC, to ensure due regard for the care and condition of the casualty.
- the safety and well-being of rescued personnel is always the prime consideration.

4.2.2.2 Random Personnel Overboard

Although not a reasonably foreseeable event, a rescue craft shall, at least, be launched, or the ERRV shall commence making way to the search area, within two minutes of the alarm being communicated to the ERRV.

4.2.2.3 Helicopter Ditching

In the event of a helicopter ditching within the 500m zone, up to 21 personnel shall be rescued and taken to a place of safety within 2 hours. In this case, rescue craft shall be launched, or the ERRV shall commence making way towards the search area, within two minutes of being alerted to the incident.

4.2.2.4 Installation Escape to the Sea

A rescue craft shall be launched, or the ERRV shall commence making way towards the search area, within two minutes of being alerted to the incident, and up to 21 personnel shall be rescued and taken to a place of safety within 2 hours.

4.2.3 Safety During Trials

The safety of the ERRV crew and Installation personnel is fundamental, and measures will be taken to reduce any unnecessary risk to those personnel participating in the trials, particularly during marginal environmental conditions and night-time exercises. Risk assessments shall be in place for all tasks associated with the trials and crew shall be fully briefed on the trials process with all safety measures and controls being identified in the risk assessment.

All trials shall be carried out at the discretion of the ERRV Master, who retains a 'right of veto' over all operations in liaison with the Installation(s) OIM(s), if undertaken on location. A 'STOP' policy shall be in place and planned trials may be terminated by any of the participants, at any stage, if it is perceived that the safety of the vessel, crew, Installation, or Installation personnel is being jeopardised.

If the 'STOP' policy right is invoked, a full debrief and review of events will take place immediately, and any recommended and agreed corrective action implemented.

If a rest period is required due to fatigue caused by the more labour-intensive tasks, any crewmember, at any point during the trials, whether it be mid exercise or between exercises, has the right to call 'time

out' and should be actively encouraged to do so. This stoppage can be accommodated by stopping timing and restarting once all involved feel fit to continue.

In the event of a 'real emergency' occurring during an offshore trial, the vessel will revert to 'emergency standby' status under the instruction of the affected Installation's OIM.

Depending on the severity of the emergency, a contingency strategy may include the recovery of any remaining mannequins that could cause unnecessary problems, or confusion, during the emergency response by the ERRV if the event escalates or leads to real casualties entering the water. However, the Master's initial response and priority shall be directed towards the incident.

4.2.4 Location of Validation Trials

Validation trials shall preferably take place with a third-party assessor onboard the ERRV to provide a full appreciation of the rescue conduct, co-ordination, and performance of the crew.

Trials may take place offshore or in coastal waters but not in unrealistically sheltered areas, however calm conditions are acceptable. Trials shall only take place near the shore if conditions further offshore are too adverse and unsafe. The reasons for this should be clearly recorded in the trial report.

4.2.5 Validation Trial Type and Frequency

All ERRVs are subject to annual validation trials, per crew. The initial trials date for each crew forms the basis of the anniversary target date. It is however accepted that due to unforeseen circumstances such as, continued poor weather, or relief schedule issues, that it may be required to amend the planned trials date. To allow flexibility and achieve realistic trials programmes, the trials may be performed in the window of between 60 days before, to 60 days after, the anniversary date. The ongoing anniversary dates shall, however, remain the same as the initial trials date.

All annual validation trials shall, as a minimum, incorporate all the below scenarios (three (3) trials) in the presence of an independent witness.

1. MOB - Simulate a Man Overboard (MOB) incident during a close standby situation; this to assess compliance with the applicable Performance Standard. This will normally necessitate rescuing up to four (4) persons from the water, from circa 500m from the ERRV with one (1) Rescue Craft.

2. Helicopter Ditching / Escape to Sea – Simulate a multiple casualty rescue with all operational Rescue Craft (DC / FRC) to simulate a Helicopter Ditching or Installation Escape to Sea scenario; this to ensure compliance with the applicable Performance Standard. This will necessitate simulating the rescue of multiple persons (21) from the water from a distance not less than 1 nautical mile (nm).

3. Helicopter Ditching / Escape to Sea – Simulate a multiple casualty rescue with the ERRV's Mechanical Recovery Device to simulate a Helicopter Ditching or Installation Escape to Sea scenario; this to ensure compliance with the applicable Performance Standard. This will necessitate simulating the rescue of multiple persons (21) from the water from a distance not less than 1 nautical mile (nm).

4.2.6 Extrapolation of Validation Trial Results

It shall be recognised that ERRV's and Rescue Craft may respond to emergencies in environmental conditions greater than which it is considered safe or practical to undertake trials or exercises. To accommodate this and demonstrate that performance standards can be achieved in the conditions where emergency response may be required or expected, all annual validation trials will be extrapolated to the upper operating limits for each rescue method, by appropriate methods.

In situations such as a shared service, the calculations should reflect the realistic distances likely to be experienced in a recovery and rescue situation at the most distant installation.

Duty holders shall ensure that they understand the mathematical processes and techniques utilised in the Validation Extrapolation Process, and that they are well founded and effectively demonstrate a robust assessment of performance in the upper sea states that can be evidenced and justified.

Duty holders shall be aware of the limitations of theoretical extrapolation in measuring performance and support this with a robust verification trial regime in a range of sea conditions as required in section 4.3.

4.2.7 Independent Witnessing and Record Keeping

All validation trials shall be facilitated and witnessed by an onboard specialist independent assessor who shall be responsible for recording all trial activities on the R&R Validation Trial Record Sheets (see Appendix 'F'). A written report with comments on the general conduct, and any observations made during the trials, may accompany these record sheets, along with the full extrapolated results within a full trial report that must be retained by the duty holder for at least 5 years and made available to regulatory bodies and independent verification bodies when required.

The specialist independent assessor shall have relevant offshore maritime experience and qualifications to undertake the role and have received suitable coaching and training in maritime search and rescue, casualty handling and major emergency response and co-ordination.

The specialist independent assessor must be completely impartial and therefore cannot be part of the vessel or offshore Installation crew / personnel.

The specialist independent assessor must not assist in any way, that could improve or influence vessel or crew performance during any timed validation trial. The specialist independent assessor may offer advice and tips when preparing for the trial, or when briefing the Master and crew, or during any debrief, to share and encourage good practices and improve future performance.

4.2.8 Relationship with Other Trials and Exercises

It is desirable to compile as much R&R Trial Data as possible for each vessel. All other exercises conducted, shall be recorded on the relevant forms provided (see Appendix 'F'). Any additional Trial Data gathered, particularly in higher sea states, during verification trials, or other exercises, may be used to compare results with, and verify, the extrapolated predictions at the upper sea states calculated during the validation trial process.

4.2.9 Validation Trial Recommended Code of Practice

4.2.9.1 Mannequin Type and Weight

Mannequins used for validation trials shall be suitable for simulating the characteristics of a human casualty in the water. Mannequins shall be ballasted to reach a realistic weight for the physical handling of casualties and simulate realistic drift characteristics in the prevailing weather conditions including the wave actions created by, for example, the vessel's wash and bow wave, when manoeuvring alongside the casualty.

An acceptable weight has been determined as circa 60 kilograms.

4.2.9.2 Mannequin Number / Amount

The full and correct number of mannequins shall be deployed for Rescue Craft and Mechanical Recovery Device Trials in accordance with the relevant Performance Standard. Where it is not possible to use the optimum amount, for example when a damaged mannequin is identified that is either a safety concern, or cannot be correctly weighted, a reduced number may be used. However, this number shall never be less than 90% of the full amount for validation trials. Alternatively, it is acceptable to redeploy a small number of mannequins, following their initial rescue from the sea, in the early part of the trial to simulate the correct amount.

4.2.9.3 Mannequin Deployment and Dispersal

The mannequins shall be distributed and spread to simulate the worst-case scenario for persons in the water at the upper sea states. However, sound 'seamanlike' practices shall be adopted to ensure that trials are not unrealistic, or impossible to complete. It is recommended that mannequins are deployed individually with sufficient intervals between each release to avoid tight grouping. As a guide, the initial distribution of the mannequins shall be within an area approximately equivalent to the physical footprint (length/width) of any Installation being supported, or a typical offshore installation for vessels with no defined location. Whilst emergency training teaches casualties in the water to group together this does not simulate the worst-case scenario. Mannequins must not be tied together in pairs or groups. Mannequins that subsequently randomly drift together into pairs or small groups is likely, and acceptable.

4.2.9.4 Casualty / Mannequin Handling

Good rescue practices shall be employed for the physical handling of mannequins as if they were real casualties during all trials. Mannequins shall be recovered from the water in a horizontal aspect, to avoid the likelihood of post immersion collapse in a real emergency.

In addition to ensuring that any casualties are rescued from the sea in a horizontal posture, utilisation of the cradles, or nets used as recovery aids, may reduce the risk of avoidable back injury to Rescue Craft crews.

Handling of mannequins shall, if practical, be conducted by at least two crew members. Protective gloves should always be worn when handling mannequins. Special care shall be taken to avoid trapping

hands and fingers between the mannequin and the vessel or rescue craft structure, and in the pinch points of mannequin articulated joints and limbs.

Mannequins must not be left in any Mechanical Recovery Device for any longer than necessary. Leaving the Mechanical Recovery Device trailing in the water to rescue multiple casualties in one operation risks the casualties being pinned underwater and may lead to drowning.

In a real emergency, transit back to the mother vessel by FRC, or DC, would not be undertaken at high speed with potentially injured casualties on board, so the same approach shall be expected for trial purposes. Therefore, the transit back to the ERRV shall not be a hurried event, and caution must be exercised by those responsible for this part of the exercise. FRCs, and DCs, should return at a speed that is safe and comfortable for any survivors on board and not just the crew. This time is, however, still a fundamental component of the trial as FRC / DC are not considered to be a "Place of Safety" and times must be recorded until all casualties are onboard the ERRV.

4.2.9.5 Positioning of the ERRV/Rescue Craft during Trial Rescue Operations

Throughout the trials, the Master / Coxswain shall position and manoeuvre the vessel / craft with due consideration to offshore hazards, and the effects of adverse weather.

The ERRV and Rescue Craft must avoid any 'close quarter' situation with any Offshore Installations and / or nearby vessels and shall comply with the Duty Holder / Owner's Policy and Procedures regarding operating distances within the 500 metre Safety Zone.

If the trials are being conducted in relatively benign weather conditions, the vessel/craft shall be manoeuvred in a manner that is appropriate, or achievable, at the upper sea states, although a safe best speed shall be used in the conditions being experienced at the time, giving due consideration to the safety of the vessel/craft and crew.

The following actions shall where possible be avoided: -

- Exposing casualties in the water to increased risk of injury from the vessel's propulsion units.
- Lying beam on to the sea for longer than necessary.
- Operating the Mechanical Recovery Device on the weather side of the vessel.
- Launching and recovering Rescue Craft on the weather side of the vessel.

4.2.9.6 Utilisation of Equipment and Resources

The vessel/crew shall utilise all equipment and resources available to them at the time of the trials to aid a timely, and effective, execution of the rescue such as: -

- Posting suitable lookouts to locate and monitor the location of all casualties/mannequins
- The use of boathooks, Mate-Savers, poles, and lines to assist the recovery of casualties/mannequins. Any device that could potentially injure a casualty shall not be used.
- The use of binoculars and search lights to aid the location of casualties/mannequins

- Liaising with installation personnel (at the scene) to aid the location of casualties/mannequins (for close standby Man Overboard only).
- The use of electronic or manual plotting techniques, to calculate the probable drift of casualties/mannequins.
- The use of appropriate search patterns and techniques to aid the location of casualties/mannequins.
- Communicating regularly with, and accepting feedback from, all parties, to effectively monitor and manage the rescue.

4.3 Ongoing Verification and Recording of Trials Data

4.3.1 Overview

It is important for both rescuers and survivors, that both rescue equipment and vessel crew are trialled in conditions like those, in which they are expected to provide cover. Rescuers need to develop skills to enable them to successfully perform the necessary tasks for rescuing survivors, without endangering themselves, or the survivors. Rescue exercises shall have their performance verified by valid methods to demonstrate, in all but exceptional weather conditions, their compliance with regulatory requirements. Such trials shall not expose rescue personnel to unacceptable risks.

This document provides guidance regarding the planning and execution of recovery and rescue performance trials, to determine the overall effectiveness of recovery and rescue arrangements for various geographic areas around Great Britain, as detailed in Table 1 of 4.3.4.

4.3.2 Crew Safety

Prior to any exercise being conducted, a risk assessment shall be undertaken which shall take cognisance of the scope of the exercise, the equipment to be used, and the prevailing weather conditions. An incremental increase in the sea state for subsequent exercises, will lead to improved confidence, and capability in such conditions.

To enhance the safety of the crew performing these trials, exercises shall be split into manageable separate components, each of which are individually timed. This can avoid unnecessary repetition, and speed, for non-critical operations. In an emergency, Rescue Craft transit back to the mother vessel, would not be 'against the clock', so the same principle shall be adopted for exercise purposes.

Multiple casualty exercises shall be undertaken with fewer mannequins, the weight in water of which, shall not exceed 60 kg, and so reduce the likelihood of fatigue related, or manual-handling, incidents.

Each ERRV shall carry a minimum of 3 mannequins, and for exercises involving simulating the recovery of larger numbers of casualties, the mannequins can be re-used once recovered, with average times being extrapolated by computation, after allowing for the time taken, between exercises.

If a rest period is required due to crew fatigue caused by labour-intensive tasks, any crewmember, at any point during the trials, whether it be mid-exercise or between exercises, has the right to call 'time

out' and shall be actively encouraged to do so. This stoppage can be accommodated by stopping timing and restarting once all involved feel fit to continue.

4.3.3 Number and Type of Verification Trials

As a minimum, to provide a level of confidence in the data recorded, at least ten verification trials shall be conducted by each crew of the ERRV, during a twelve-month period. (See Section 4.3.4 column 4 of Table 1: Significant Wave Heights (H_s) that have 5% Annual Exceedance for UKCS Areas and Worst Months Exceedances for that Condition).

Of these 10 exercises, per crew per annum, the following shall be required, to demonstrate overall competence in the use of rescue equipment, in varying conditions:-

2 each exercises in higher Sea states (as per Table 1 of 4.3.4).*

2 each Night-Time exercises.**

2 each Mechanical Recovery Device (MRD) exercises.

2 each Personal Locator Beacon (PLB) exercises.

2 each Recovery of Mannequin exercises.

Notes:

*Where an ERRV crew has exercised in sea states above the significant wave height for its intended location, the verification record shall also apply to other areas of operation.

**It is recommended that night-time exercises are carried out shortly before dawn, in case difficulties are encountered, allowing remedial action to be taken in daylight conditions.

New trials data shall be collated frequently, with an interval not greater than one month.

4.3.4 Distribution of Trials

Trials shall be conducted across the entire range of expected sea states for the area of operation, after taking cognisance of the "Adverse Weather Standards for Emergency Response and Rescue Vessels" as defined in Appendix 'G'. As a minimum, the distribution of trials conducted, shall reflect the actual frequency of occurrence of various sea states, with trials being undertaken in the higher sea states to confirm validity of the extrapolated data from the annual validation trials.

Additionally, trials shall be conducted in those conditions where it is reasonably foreseeable that rescue might need to be undertaken. This is particularly pertinent regarding rescue during hours of darkness.

Such night-time trials shall be conducted to establish what, if any, degradation in performance occurs. The trials shall be risk-assessed and initially conducted in benign weather conditions to introduce rescue personnel safely to the conditions, so that skills can be developed, and equipment tested. Further trials can be undertaken, in gradually worsening weather conditions once rescue personnel have gained confidence and competence in the use of equipment.

Trials shall be conducted frequently to ensure performance is retained.

The objective of all trials is, to test the vessel and crew for the "worst expected case" which can be demonstrated by two distinct scenarios, namely:-

- Scaffold collapse with four (4) persons overboard.
- Multiple persons (21) in the water (helicopter ditching or Installation abandonment).

The scaffold collapse above, relates to a work-party, who all enter the water whilst conducting planned overside work.

The exercise portfolio shall be further expanded where an ERRV, with one or more Daughter Craft and FRC's, supports two or more offshore installations, where the ability to meet "Baseline Recovery and Rescue Performance Standards" (as defined in Section 5.2.2), shall be demonstrated.

Verification Trial Weather Table

SIGNIFICANT WAVE HEIGHTS (H_s) THAT HAVE 5% ANNUAL EXCEEDENCE FOR UKCS AREAS AND WORST MONTHS EXCEEDENCES FOR THAT CONDITION

1	2	3			4	5
	Area Average Wave Heights with a 5% Annual Exceedance in meters (H_s)	**Winter Months Area Average % Exceedance at 5% Annual Exceedance with Worst Month Indicated**			**Wave height (metres H_s) that Actual Trials Need to be Conducted up to:** **Allowing for Extrapolation to 50% Above the Data Range**	**% Annual Exceedance for Actual Trial Wave Height**
Sea Area		**Jan**	**Feb**	**Dec**		
WoS	6.01	16.99	11.58	8.92	4.0	19.38
NNS	5.20	13.91	11.19	10.64	3.5	18.53
CNS	4.16	13.11	11.52	11.07	2.8	17.90
SNS	2.89	11.50	9.13	11.69	1.9	19.26
EC	3.69	13.05	10.65	16.59	2.5	16.91
CS	5.21	12.71	11.60	16.46	3.5	18.33
IS	3.01	13.40	9.61	13.66	2.0	18.02
HS	6.68	16.58	11.02	8.18	4.5	18.58

Source: OTO 2001 030 – 'Wind and Wave Frequency Distributions Around the UKCS'. (Based on NEXT Hindcast Model)

Note:

WoS = West of Shetland,
NNS = Northern North Sea,
CNS = Central North Sea,
SNS = Southern North Sea,
EC = English Channel,
CS = Celtic Sea,
IS = Irish Sea,
HS = Hebrides Shelf

4.3.5 Record Keeping and Independent Witnessing.

All trials shall be recorded on the "ERRVA Record Sheet for All Launch and Recovery of FRC/Daughter Craft/Dacon Scoop Verification Exercises" as included in Appendix 'F' of these Guidelines.

When it is determined by the Duty Holder that, independently witnessed Verification Trials are to be undertaken, and the format of the trials has been agreed with the Master of the ERRV, thereafter the ERRV will report to the responsible party on the offshore installation, witnessing the progress of the exercise. These shall also be recorded, as a witnessed verification exercise, on the "ERRVA Record Sheet for Verification Recovery and Rescue Exercises" in Appendix 'F'.

Such records shall be retained for a period of five years.

4.3.6 Adverse Weather Policies.

Any Duty Holder Adverse Weather Policy that may apply to the installation, shall be in accord with the overall Recovery and Rescue Performance Standard, as demonstrated when undertaking trials in higher sea states.

It shall be recognised that in higher sea states, it may not be possible for the ERRV to provide a good prospect of recovery and rescue. When such circumstances are becoming apparent then a conversation shall take place between the ERRV Master and the Installation OIM before the limitations are reached.

Furthermore, in extreme weather conditions, it may be necessary for the ERRV to depart location with the safety of the vessel and crew taking precedence. (Refer to Appendix 'G')

4.4 On-going, On-board Training.

Emergency Response and Rescue Vessel crews perform an On-going, On-board Development and Training Programme developed by an OPITO-approved training provider, in accordance with statutory requirements contained within STCW, and industry approved course standards managed by OPITO.

The purpose of the programme is to consolidate the onshore initial and specialist training undertaken by ERRV crews, and to enhance their knowledge, skill and understanding of their roles.

Where an individual cannot be present on the vessel to complete an observed assessment by a training provider, he will be permitted to take the assessment onshore by an OPITO-approved training establishment.

The programme may also make provision for location-specific emergency contingency training. The ERRV Master shall provide the OIM with an outline of the intended exercises which require installation input, and request co-operation as soon as practicable after arrival on station. (Ref. Section 2.3)

Wherever practicable, installations shall co-operate in the execution of such exercises. Conversely, exercises planned for the installation which involve the ERRV, should be discussed in advance with the Master.

4.5 Communications during Exercises.

Procedures shall be in place to ensure that radio communications do not cause confusion by being mistaken for those generated by a real situation. Transmissions should be prefixed by terminology agreed with the Installation and intended to avoid confusion.

If a real emergency develops during an exercise, all concerned shall immediately be informed, the exercise shall be abandoned, and an appropriate recovery and rescue response initiated.

4.6 Record Keeping.

Records of activity during an exercise shall be kept in a format that replicates what would be required for a real emergency. In addition to written logs, incident status boards should be maintained, to provide the Master with information that will assist in the response to an emergency.

Results of all trials and exercises shall be recorded in a standard format (Ref. Appendix 'F') and forwarded to the duty holder and ERRV operator. The ERRV operator shall maintain these records on an industry standard database, as evidence of validation and verification.

4.7 Drills and Exercises.

Drills and exercises shall be undertaken on a regular basis, and in accordance with, HSE "Guidelines on the Use of Trials Data to Determine the Overall Rescue Performance and Confirm Regulatory Compliance", whereby each drill or exercise is recorded on the "ERRVA Record Sheet for Verification Recovery and Rescue Exercises" contained within Appendix 'F' of these guidelines.

Drills or exercises shall not be undertaken where these present an unacceptable risk to the ERRV and/or crew. The assessment of this risk must be undertaken by the ERRV Master. The manual-handling aspects of recovery of a mannequin present a potential risk of injury to the FRC / DC crew, and the mannequin weight, in the water, should not exceed 60 kilograms.

5 EMERGENCY RESPONSE

5.1 Primary Scenarios

The ERRV may be called upon to respond to four primary scenarios where persons may have to be recovered or rescued from the sea. (For examples refer to Appendix 'H')

5.1.1 Person(s) Falling from the Installation

Both working and off duty personnel are at risk of falling from the Installation into the sea. Personnel working in areas where an increased risk of entering the sea exists shall be equipped with appropriate PPE and have planned recovery and rescue arrangements already in place. Where these arrangements involve the ERRV, the Master and crew shall be aware of their roles and responsibilities and react accordingly.

5.1.2 Helicopter Ditching in the Vicinity of the Installation

Helicopter flights are planned events and operate within certain criteria, such as the duty holders Weather Working Policy. All relevant information regarding the flight shall therefore be known, and contingencies planned, e.g., moving the ERRV to an appropriate position to assist in meeting recovery and rescue performance standards.

5.1.3 Escape of Installation Personnel to the Sea

Escape from an Installation may involve personnel using escape devices, life-rafts or entering directly into the sea. A spread of entry points to the sea shall be expected and reference should be made to the appropriate Data Card for information on the Installation escape routes.

5.1.4 Recovery of Persons following Evacuation by TEMPSC

Persons who have evacuated the Installation by TEMPSC may require to be recovered from such craft. Whilst a TEMPSC is not designated as a place of safety, persons in them are at less risk than those who may be in the sea, or in other escape equipment such as life rafts. Consequently, it would be reasonable to assign a comparatively lower priority to recovery of personnel from TEMPSC, than that given to, the rescue of personnel who have escaped from the Installation by other means. The effect of weather and sea conditions on the safe transfer of survivors from a TEMPSC to the ERRV should also be risk-assessed in conjunction with the MRCC.

5.2 Emergency Situations

Timely warning of situations that have the potential to develop into major incidents, requiring intervention by the ERRV, must be communicated by the OIM, to the Master.

5.3 Emergency Response Actions

5.3.1 Command and Control Handover Procedures

If possible, the OIM of an Installation affected by an emergency shall act as On-scene Co-ordinator (OSC). If evacuation of the Installation is unavoidable, the OIM should transfer this role to others external to the Installation. This could be the ERRV Master, or the OIM of a nearby Installation. (Ref. Appendix 2 OEUK Guidelines for the Management of Emergency Response.)

In the event of a catastrophic incident, or complete communication loss with the Installation, the ERRV Master shall immediately adopt, and maintain, the role of OSC until relieved of that duty.

Upon assuming the role of OSC, the ERRV Master shall inform MCA MRCC immediately and issue a mayday-relay message. Thereafter, contact shall be maintained by relaying information as the situation requires and permits. The Master shall act in accordance with the Emergency Response Plan (ERP) for the Installation.

The role of OSC necessarily places a high workload upon the ERRV Master and crew, that may affect their efficiency in the recovery and rescue roles. Although circumstances, such as, operating in a remote location may make this inevitable. Where resources allow, the ERRV Master shall consider transferring this OSC role to another vessel, if this will benefit the recovery and rescue effort. Transfer of the OSC role may allow the ERRV to concentrate its full attention on search and rescue but this shall not be undertaken without the prior knowledge of the OIM and/or Coastguard, and then, only after they have appointed another OSC.

5.3.2 Positioning of ERRV under Emergency Conditions

Because of the varying conditions that may exist, no definitive instructions can be given for stationing of the ERRV under emergency conditions. However, Master's should bear in mind the following:

- Coxswains of Installation TEMPSC are trained to steer upwind from the Installation on a course approximately 30 degrees off the wind, for 1.5 miles, before heaving-to.
- Gas, smoke, oil, and debris may drift from an Installation, under the influence of both wind and wave, thus creating a danger area over, and upon, the sea. Masters of ERRV's shall always bear this in mind, before making any decision to move downwind and recover personnel from the sea.
- Major explosions may occur on the Installation.
- In the case of ditching, a helicopter may be just below the sea surface, or survivors may be ascending to the surface. Consideration shall be given to maintaining the ERRV out with the crash site and deploying rescue craft with instructions to manoeuvre with extreme care.
- Fouling or snagging hazards may be present on, and around, casualties, such as, descender devices, lines, or harnesses worn by rope access technicians.

5.3.3 Search and Location

Searches conducted by both ERRV and rescue craft should be co-ordinated by the ERRV Master with unambiguous reporting procedures agreed in advance. The ERRV and FRC crews shall be familiar with the means of disabling Personal Locator Beacons (PLB's) as contained within these guidelines in Appendix 'N'.

5.3.4 Radio Discipline/Communications

If the Installation 'state of alert' changes, the OIM, or delegate, shall inform the ERRV Master.

Strict radio discipline shall be maintained during an emergency, and emergency frequencies shall only be used for the passage of essential information or instructions.

Should the Installation OIM be unable to transmit a Distress message, the ERRV Master shall broadcast a Mayday-Relay message, as appropriate to the circumstances.

5.4 Survivor Management and Transfer

Survivors shall be handled, in an efficient and professional manner, having due regard to their medical condition.

Each ERRV shall carry a contingency plan for the safe transfer of casualties for further treatment out with the ERRV. which takes account of the various modes of transport that may be used. and varying weather conditions.

The medical condition of casualties shall be stabilised if possible. and external medical advice sought. if necessary. Casualties being evacuated from the ERRV. should be tagged with details of their identity, medical condition. and any medical treatment provided.

Where doubts exist over the advisability of transfer, e.g., the medical stability of the person is uncertain, the advice of a doctor. or other appropriately qualified person. should be sought.

5.5 Emergencies Occurring Out with Assigned Area of Operation

An ERRV must. as required by law. and if required by the Rescue Authorities. proceed out with its assigned area for the saving of life at sea. Prior to departing to assist, the Master must inform the OIM of the installation to which it is assigned. An ERRV may only proceed to assist with the saving of life or property out with its assigned area of operation, with the prior permission of the OIM of the Installation to which it is assigned. Once permission is given the Master of the ERRV shall notify the Maritime Rescue Coordinator of the vessel's availability, the ETA and the vessel's recovery and rescue capability.

The OIM of the installation to which the ERRV is assigned must take all necessary precautions to ensure the requirement for recovery and rescue arrangements is no longer reasonably foreseeable after suitable risk assessment.

5.6 Helicopter Winching Operations

5.6.1 The Decision to Winch

The decision to commence a winching operation whether for an emergency, drill or other circumstance shall be taken jointly by the ERRV Master and the helicopter Pilot. After winching has commenced, either may veto continuation of winching if it is considered that an unacceptable risk to the safety of the ERRV and/or the helicopter, or their respective crews is present, or likely to arise.

For drills, or non-emergency, winching operations, the Master of the ERRV shall ensure that the Installation OIM is briefed on the intended operation, the necessary permission has been granted, and all parties concerned agree that all performance standards are not compromised. Under emergency circumstances, the Master may act on his own initiative. (Refer to Appendix 'I')

5.6.2 Radio Communications during Winching Operations

The officer in charge of the ERRV deck crew shall ensure that radio communication between the deck and the bridge is maintained throughout the winching operation. Any malfunction shall be immediately reported to the bridge and rectified before continuing with winching operations.

Whilst the helicopter is hovering over the ERRV deck, noise levels will be extremely high such that handheld radios alone may probably be inaudible. Consideration should be given to the use of radio-helmets or headsets which reduce interference to communications from external noise.

5.6.3 Permitted Air Band Radio Frequencies

By permission of the Civil Aviation Authority, ERRV's may transmit and/or receive on certain defined air band frequencies. (See para. 8.5 of the ERRV Survey Guidelines) These are:-

- 121.5 MHz, receive only, as part of a Direction-Finding facility, to assist the ERRV to locate a ditched helicopter by homing-in to the emergency locator beacon.

- 123.10 MHz, transmit and receive, restricted to SAR communications concerned with aeronautical emergencies or ERRV/aircraft communications concerning the safety of life.

- The air band frequency assigned to the Installation with which the ERRV is associated to transmit or receive communications. This is to be used solely to enable a guard to be maintained such that the ERRV may react quickly to a distress call from a helicopter.

5.6.4 Winching Operations Procedures

5.6.4.1 Maintaining Course and Speed

Except in an emergency, after winching operations have commenced, the ERRV should not deviate from the agreed course and speed without prior notice to the helicopter pilot.

If, during winching, the Master considers it prudent to abort the operation due to weather or any other circumstance affecting the ERRV, he should immediately inform the helicopter pilot.

5.6.4.2 Preferred Course - Forward and Aft Winching Zones

Winching operations will usually take place over the aft Winching Zone and, unless requested otherwise by the helicopter pilot, the ERRV should steer with the wind 30 degrees on the port bow. As the helicopter pilot sits on the starboard side of the helicopter, this course should allow him to see the winching zone as he manoeuvres into position.

Some ERRVs are also equipped with a forward Winching Zone that may be used at the Master's discretion. Two choices of operation then present themselves depending on weather conditions, i.e., winching over the forward zone while the ERRV steams astern or winching over the forward zone while the ERRV steams ahead.

In the former case (steaming astern - subject to weather), the ERRV should maintain a course with the wind 30 degrees on the starboard quarter. It is particularly important that the ERRV should advise the pilot of this manoeuvre. The helicopter pilot should then approach towards the bow.

In the latter case (steaming ahead), steer with the wind on the starboard quarter.

In all cases, the ERRV's speed should be such that it responds readily to the helm and provides a stable platform.

Whichever location is chosen for winching, the helicopter pilot should brief the Master in advance of his intentions, agree a course and obtain the Master’s consent to proceed.

5.6.4.3 Lifting Equipment and Techniques

Single Lift

A strop is lowered and the passenger lifted. Normally a helicopter winchman will be lowered first to supervise the lift from the deck.

Double Lift.

Using this method, the helicopter winchman descends and then ascends with the person being transferred. This method is used for small numbers of people and for casualties where any injuries will not be aggravated when lifted in such a way.

Stretcher Lift

The helicopter winchman descends with the stretcher, supervises the securing of the patient, and then ascends with stretcher and casualty.

Hi-line Transfer.

Hi-line transfer is used when a vertical lift is impossible and enables the ERRV's crew to guide the helicopter winchman to the deck of the ERRV. It may be used with any of the above techniques.

Always ensure that lines used in association with Hi-Line transfers can run freely without snagging on personnel or ship's fittings. To assist in this, the Hi-line should be flaked down into a weighted bucket or similar receptacle that does not create a risk of snagging. The bucket should be sited and secured such that it is always visible to the helicopter pilot, i.e., to starboard of the helicopter's line of approach.

Use only sufficient force to guide the helicopter winchman to the deck. Excessive force may affect helicopter handling.

After the Hi-Line is received, do not let go unless unavoidable. The Hi-Line is attached to the hook by means of a weak link with a breaking strain of 300 pounds.

Winching by Lifting Strop.

Personnel to be winched-off will usually be supplied with an inflatable lifejacket by the helicopter. This should not be inflated unless an actual emergency threatens the life of the person. Even then, the lifejacket should never be inflated inside the helicopter. Do not equip personnel being transferred with an auto-inflating or solid-buoyancy lifejacket unless an emergency makes their use unavoidable.

When being lifted in the strop for single lifts, ensure that the toggle is down as far as it will go. Hold the strop lightly with both hands just below the hook and the elbows close to the body.

Winching by Stretcher.

Where only a single person is to be winched-up in a stretcher and their condition permits, the helicopter will usually prefer to use its own stretcher and strops for transfer. However, where several personnel have to be evacuated and/or double handling from the ERRV's to the helicopter's stretcher is medically inadvisable, the ERRV's stretchers and strops should be used.

When transferred, the occupant of the stretcher should be protected from spray and cold and accompanied by a written record (usually a Cruciform National Standard Triage Card) providing information on:

- their identity
- medical condition and
- any treatment received.

All loose ends of stretcher strops should be tucked-in to avoid being whipped across the stretcher occupant by the helicopter downdraft.

General Precautions.

DO NOT touch either the helicopter winchman, helicopter stretcher or winch hook, until they have been earthed. Aircraft can acquire very high charges of static electricity that have to be discharged before handling. Often the helicopter will first dunk the hook in the sea to discharge static electricity.

DO NOT secure any part of the winch wire, winch hook, strop, or line to any part of the ERRV. Always hold them loosely.

DO NOT shine lights at the helicopter. Ensure ship's lighting, including any used to illuminate hazards, cannot dazzle the helicopter pilot.

DO NOT try to help yourself if being winched into the helicopter. The helicopter crew will do this for you.

5.7 ENVIRONMENTAL EMERGENCIES

5.8 Oil Spills

Although not a fundamental duty, some ERRV's are equipped with an oil dispersant spraying capability' and may be required to use it by the OIM. Spraying should not be performed if, by doing so, the recovery and rescue arrangements for the Installation are compromised. Where an ERRV is asked to sight the extent of an oil slick, take spill samples, or indeed apply dispersant the safety of the vessel and rescue craft crew is of paramount importance and should be thoroughly risk-assessed taking into consideration at least the following:-

- Approaching the spill from and remaining upwind of any surface oil.
- The hazards posed by oil at surface or in the water column.
- The potential of introducing an ignition source.

5.9 Reporting of Spills

Any ERRV sighting an oil spill shall report it immediately to the nearest Installation. In accordance with National and International Guidelines, the ERRV shall also advise details of the spill to the Maritime and Coastguard Agency, as soon as possible.

If instructed by the OIM, and where the recovery and rescue role is not compromised, the ERRV shall monitor the spill and report the situation at agreed intervals. A request may be made by the Installation to the ERRV to obtain an oil sample – at least two oil sample kits shall be retained onboard. Where, in the opinion of the ERRV Master, it is safe to do so, such requests shall be complied with.

5.10 Circumstances in which Oil Dispersant may be utilised.

ERRV's carrying oil dispersant and spraying equipment, shall test the equipment with water only, and only use dispersant solely upon the instruction of the Installation OIM.

Wherever possible, oil spills shall be allowed to degrade and disperse naturally, and without churning spills with propellers (except during the application of dispersant). Exceptions to this policy are:

- where the safety of the Installation is at risk.
- important populations of birds are at risk.
- there is a likelihood of coastal pollution.

5.11 Approval for and Guidance on the Use of Dispersant

The OIM shall obtain all necessary approvals to use dispersant before instructing the ERRV Master to begin spraying operations.

Where there is an oil spill contingency plan in place, the ERRV Master shall act in accordance with the guidance provided.

5.12 Spraying Techniques

ERRV speed through the water, spray system type, and nozzle size, all affect dispersant application rate per unit area. Thus, these variables should be adjusted to suit the oil film thickness and its viscosity. Several passes with agitation of the dispersant and sea surface provided by fire hoses, monitors, or the ship's wake, may be necessary to achieve complete dispersal. In rough sea conditions, such additional agitation may not be necessary.

Initial deployment of vessels may be on a trial-and-error basis but once the best method of working is determined then this shall be adhered to. Haphazard spraying is a waste of resources.

5.12.1 Circular Slicks

Spraying vessels normally work from the outer edge to the centre using the full width of the spray pattern for maximum coverage.

5.12.2 Long Slicks

Spraying vessels normally work up and down and across the width of the slick.

5.12.3 Blow-out

A well integrity blow-out situation would be expected to result in a long, broad, continuous slick, driven by wind, current and tide. The co-ordinated efforts of several spray vessels will probably be needed, and the spray pattern may vary depending on circumstances. A suggested spray pattern might involve one or more vessels making zigzag passes across the flow, while avoiding the source of the blow-out and its vicinity, where the crude will be rapidly de-gassing and posing an additional explosion hazard. Continuous spraying may be desirable (dispersant stocks permitting) but during the hours of darkness may be less effective if the margins of the slick are difficult to detect.

5.13 Oil Spill Training and Exercises

Regular training and exercise should be carried out as per the vessel's SOPEP/SMPEP manual and in accordance with the installation's Oil Pollution Emergency Plan (OPEP). These are requirements under Annex 1 MARPOL 73/78 and the OPRC Convention.

In addition, particular attention should be paid to the safe and efficient operation of dispersant spray equipment, as per company and manufacturer's procedures. Advice may also be obtained from the Regulatory Authorities SEERAD and DEFRA.

5.14 Oil Spill Sampling

ERRV's may be requested to take samples of Spilled Oil. It is important that the correct procedures be followed, otherwise the sample will not be admissible in court and furthermore would not be usable for fingerprint analysis.

Oil spill sampling, collection and handling guidance can be summarised as follows:-

At least one sealed sample of each pollutant is required by English Law, whereas five sealed samples are required by Scotland and Northern Ireland.

At least one additional sample should be retained by the vessel.

An oil sample for analysis should be as large as is reasonably practicable. The minimum amounts needed for full analysis are:-

- Un weathered oils that are liquid and substantially free of water (100ml).
- Oil exposed to sea's surface and forming water-in-oil emulsion "Chocolate Mousse" (500ml).
- Tarry lumps as found on beaches (20-50mg).

(The preferred sample container is glass, as plastic and metal containers can interfere with subsequent fingerprinting analysis.)

When liquid samples are skimmed off the surface of the sea, care should be taken to ensure that the sample contains sufficient oil and is not water, or water with a thin film of oil on top.

Oil or lumps of tarry / waxy pollutant deposited on rocks or other impervious materials shall be scraped-off and placed directly into a sample container.

The sample container shall be sealed with an adhesive label with a signature, stuck on the bottle top in such a way that it must be broken to open the bottle. The bottle should then be placed inside a plastic bag, that shall be sealed with a further adhesive label, as above.

Wherever possible, samples shall be stored in refrigerators or cold rooms at less than 5 degrees Centigrade in the dark. This is important for samples containing water or sediment, but less so for bulk oil. Samples shall be securely packed and sealed to prevent in-transit damage.

It is important that the sample is positively identified, particularly when more than one sample is given during a particular incident. The label on each container shall provide the following details:-

a) Date and time of sampling.

b) Description of sampling.

c) Position from which the sample is taken (grid reference).

d) Name, signature, contact address and telephone number of sampler and any witness.

Oil Sample Kits comprising 2 kits of 6 bottles to be carried onboard all ERRV's as Statutory Equipment

5.15 Secretary of State's Representative (SOSREP)

Under The Offshore Installations (Emergency Pollution Control) Regulations 2002, the Government has been given the powers to intervene in the event of an incident involving an Offshore Installation where there is, or may be a risk of, significant pollution, or where an Operator is, or has failed to, implement effective control and preventative measures.

In this event, the SOSREP (Secretary of State's Representative) will monitor the actions of the Operator and may issue "Directions". These Directions could and may involve the ERRV (Standby Vessel) and must be complied with. Further details can be obtained from the relevant OSCP.

Appendices

A Data Cards

Ensuring the provision and update of, ERRV Data Cards is the responsibility of the duty holder. A sample of an ERRV Data Card is shown within this Appendix.

The following notes provide guidance to assist the development of Data Cards.

A.1.1 Design

It is important that the information blocks are in a standardised position on the Data Card and that only key information is given. Colours, text, and font size should be designed to be visible in the light conditions experienced at night on the bridge of an ERRV.

To assure clarity, currency and user-friendliness over a reasonable lifespan, the card design should incorporate the following: -

- All measurements shall be in metric units.
- Operators of multi-Installation locations may consider producing a field plan in addition to the Installation plan.
- The final draft document shall be dated and have a revision number.
- The Data Cards shall be sufficiently durable to withstand frequent use.

A.1.2 Standard Specifications

- Location information should include:-
- Position given as Latitude and Longitude.
- Water depth in metres.
- True Installation heading.
- Distance from other Installations, shore base, flying times, etc.

A.1.3 Arrival information:-

- Who the Master should contact prior to arrival on location within/out with office hours.
- Any specific arrival procedures requested.
- Who is responsible for controlling the ERRV's movements within the Safety Zone?
- Who controls entry to the Safety Zone?

A.1.4 Specific Marine Hazards that the Master should be aware of:-

- Any pipeline corridors/exposed risers.
- Buoys in the area.
- Anchoring information.
- Outfalls which cannot be shut down.

A.1.5 Communication:-

- Show the station and frequency for all stations that the ERRV will use or should monitor unless provided elsewhere.

A.1.6 Installation Schematic:-

Should be a simple, clear plan diagram (over-complex diagrams shall be avoided),incorporating the following information:-

- Installation orientation.
- Indicate position of primary and secondary temporary refuges.
- True orientation.
- Water level outline in blue.
- Topside overhang outline in black.
- Crane locations and radii in metres.
- Any exclusion zones.
- Riser locations in red.
- Information on Installation faces that are worked.
- Pipelines in red.

A.1.7 Evacuation Equipment:-

- Positioning of equipment should be shown on the Data Card by symbols.
- Knotted ropes.
- Life-rafts.
- TEMPSC.
- Ladders to sea.
- Donut sets.

- Other evacuation equipment.

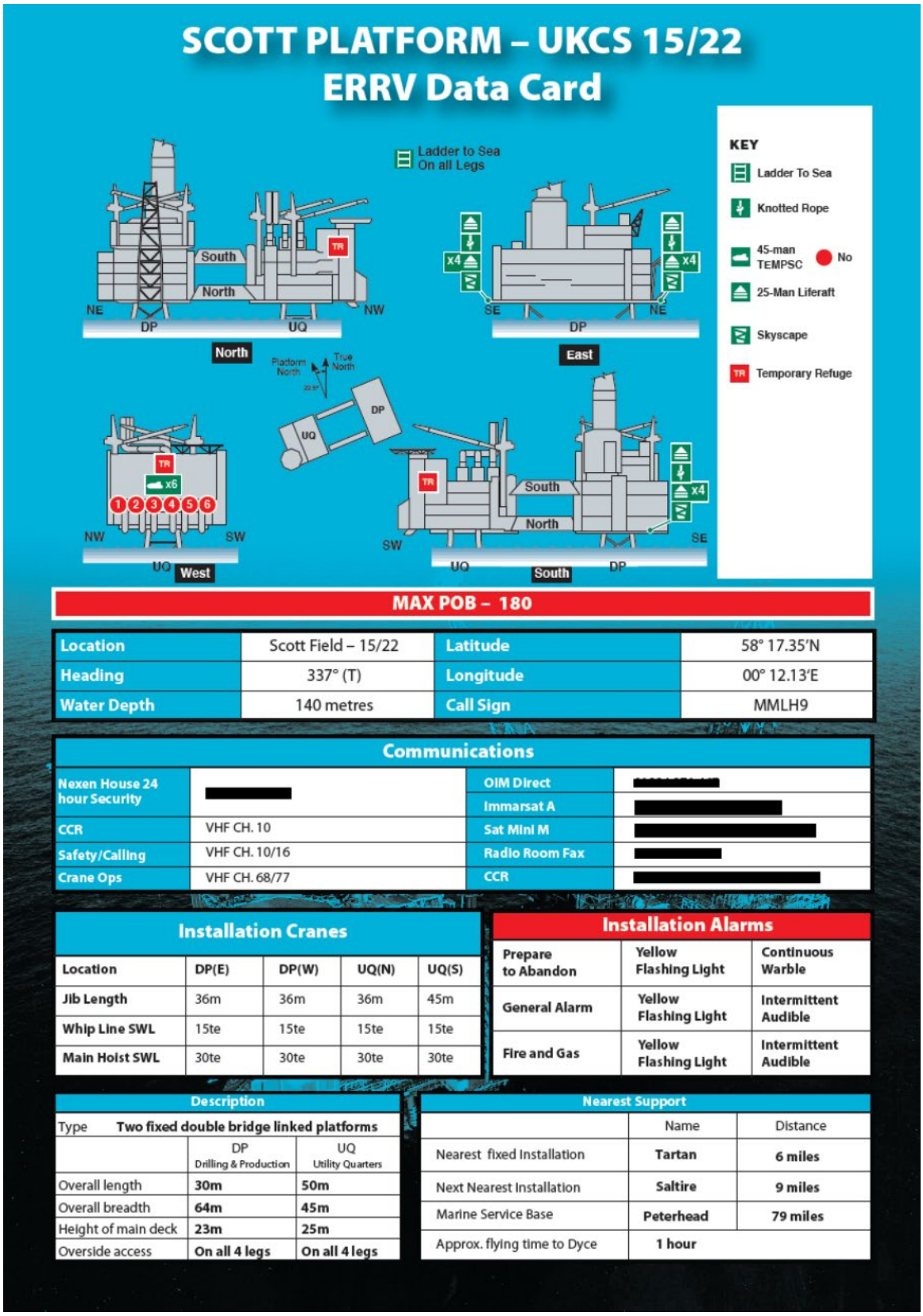
A.1.8 Personnel on Board:-

- A box indicating actual and maximum complement.

A.1.9 Performance Standards:-

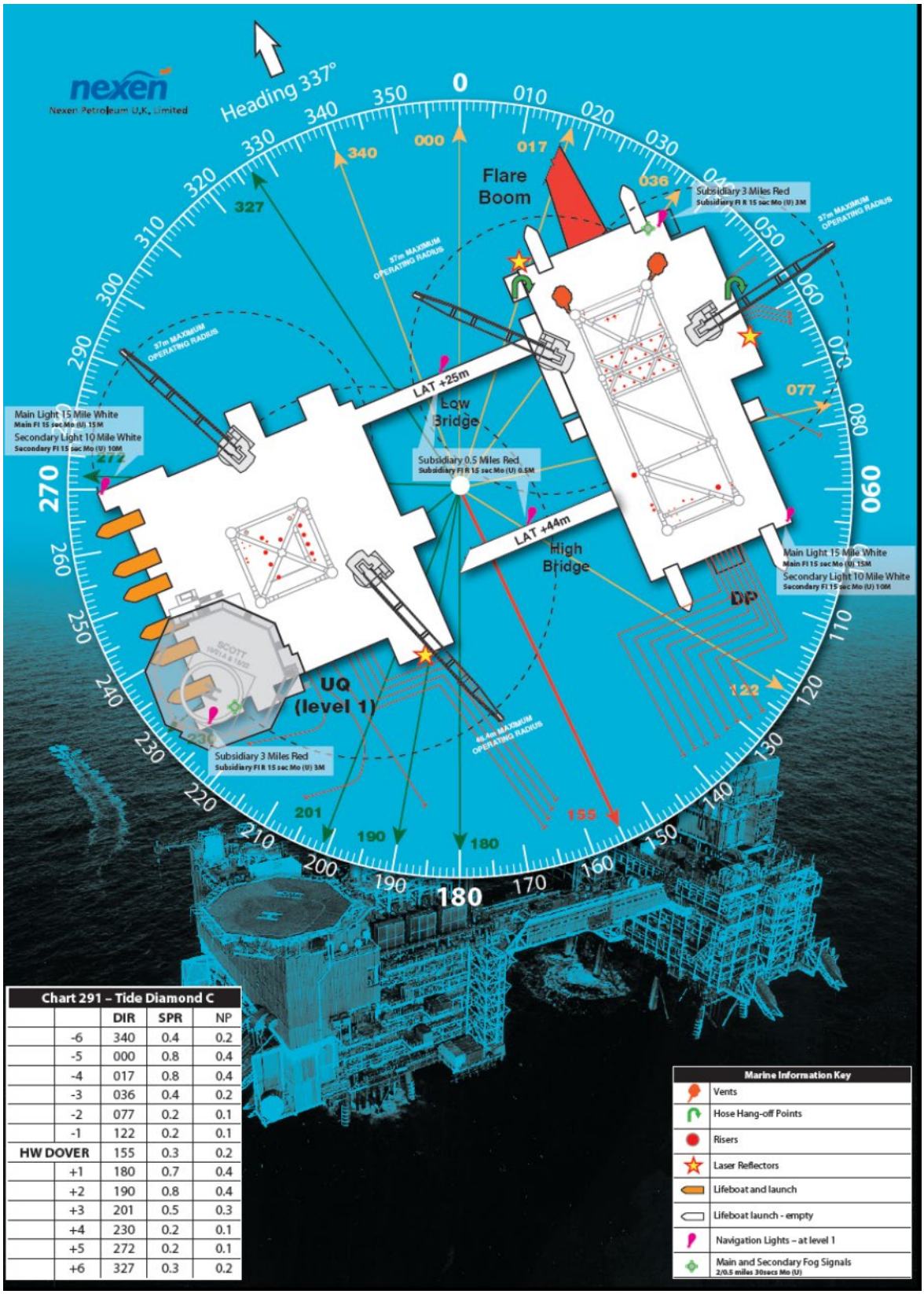
- Recovery and Rescue performance standards
- Any other field specific performance standards e.g., collision avoidance plan and muster times.
- The need to inform the Installation OIM if the agreed performance standards cannot be achieved.

Figure 1: Sample Installation ERRV Data Card (Front)



Source: Courtesy of CNOOC

Figure 2: Sample Installation ERRV Data Card (Rear)



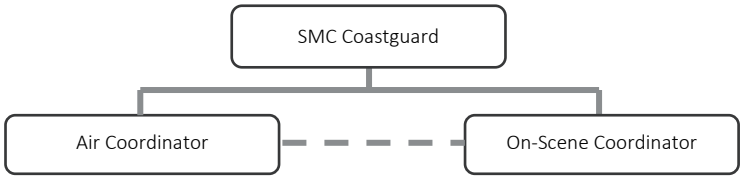
Source: Courtesy of CNOOC

B ERRV Emergency Response Plan for Offshore Emergency and/or Evacuation or Escape

In the event of any Emergency Situation on an offshore installation, the ERRV Master will take the following actions:-

- Sound the alarm, muster all crew, ensure all Recovery and Rescue equipment is made ready.
- Contact the installation – confirm whether Distress or Urgency message has been broadcast.
- Send a Distress relay or urgency signal on GMDSS DSC 2187.5kHz and VHF Channel 70 if not already broadcasted by the installation.
- Establish contact with the Coastguard.
- Proceed with recovery and rescue operations/assistance as required by the situation.
- In a catastrophic incident or complete communication loss with the installation, assume the On Scene Coordinator function until relieved. Confirm this role with the Coastguard at the earliest opportunity.
- If relieved as on-Scene Coordinator, continue monitoring of all communications and continue search and rescue duties as required.
- After recovery of survivors, priority shall be to stabilise their condition, if possible, before onward transport.

Organisational Matrix for Offshore Emergency



Definitions

SMC Search and Rescue Mission Coordinator – The official temporarily assigned to coordinate response to an actual or apparent distress situation. For maritime incidents, in the UK Search and Rescue Region, including offshore installation incidents or helicopter ditching's, this will almost certainly be a senior uniformed officer at HM Coastguard Maritime Rescue Coordination Centre (MRCC).

OSC On Scene Coordinator – A Person designated to coordinate search and rescue operations within a specified area. For offshore installation incidents, HM Coastguard recognise that the Offshore Installation Manager of a stricken installation can assume this role at the outset. In the event of a catastrophic incident to an installation, the Master of an ERRV can assume the role of OSC until relieved by the SMC. Immediate lifesaving responsibilities will always take precedence over OSC duties.

ACO Aircraft Coordinator – A person or team who coordinates the involvement of multiple aircraft SAR operations in support of the SAR Mission Coordinator. Note: IAMSAR states the ACO also acts in support of the OSC. For maritime incidents in the UK Search and Rescue Region, including offshore installation incidents or helicopter ditching's, HM Coastguard consider the roles to be of equal importance and both will report independently to the SMC. If two or more aircraft are tasked, an ACO will be appointed via the SMC.

Evacuation PFEER Regulations – "The leaving of an installation and its vicinity, in an emergency, in a systematic manner and without directly entering the sea". This is usually understood to be by the method joined i.e., helicopter, but also relates to evacuation by lifeboat.

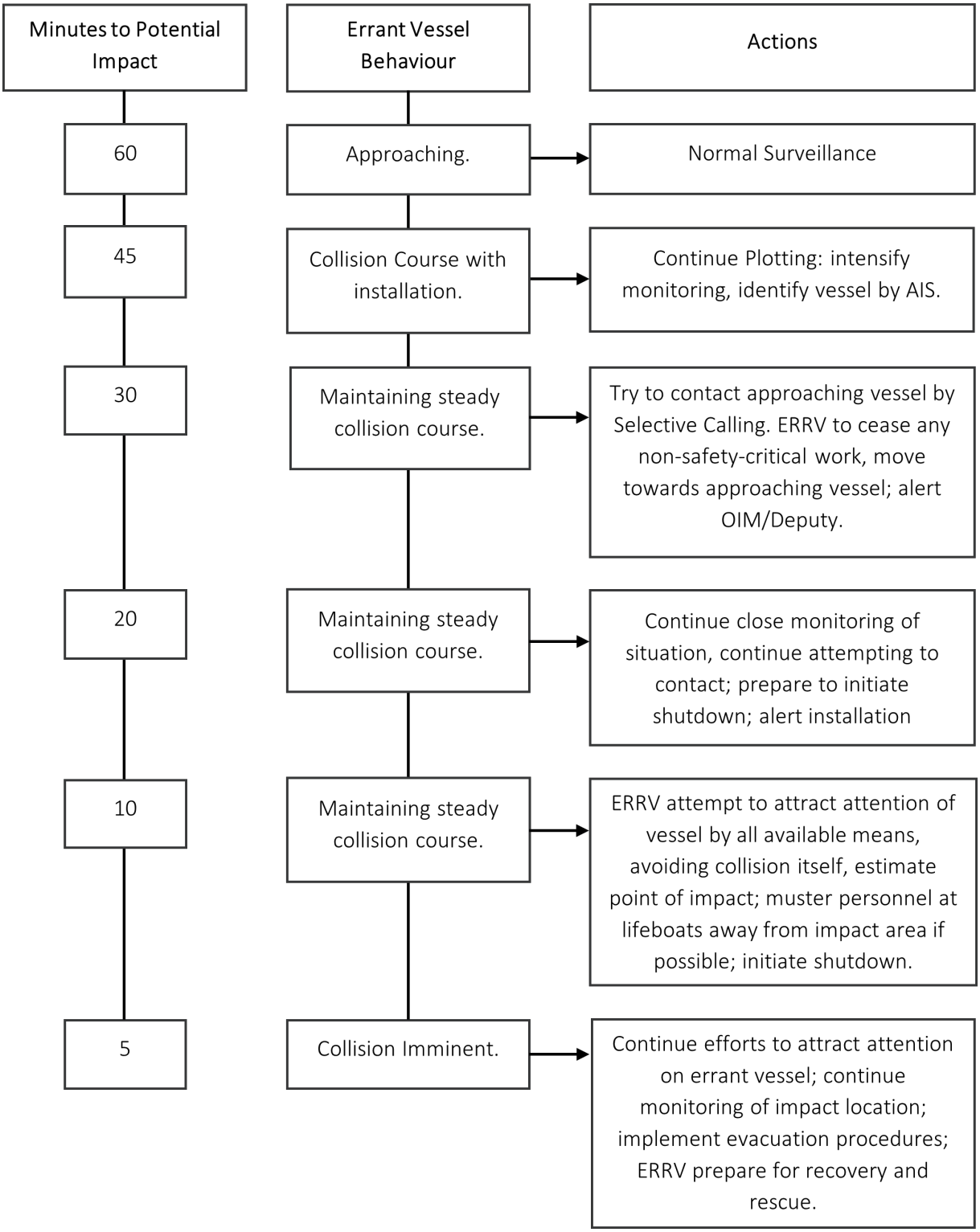
In a precautionary, controlled, or temporary evacuation (i.e., not distress or urgency) HM Coastguard are unlikely to be involved and the evacuation is likely to take place in controlled conditions by the Operator. Search and Rescue terminology does not apply. The use of lifeboats in these circumstances is unlikely.

In an emergency evacuation (i.e., distress or urgency situation) personnel will leave the installation in a controlled manner (feet dry) by helicopter or lifeboat.

Escape PFEER Regulations – "The process of leaving the installation in an emergency when the evacuation system has failed; it may involve entering the sea directly and is a 'last resort' method of getting personnel off the installation."

C Approaching Vessel Monitoring Template

Figure 3: (Refer Section 3.2 and OEUK Ship/Installation Collision Avoidance Guidelines)



Source: ERRVA

D Typical Installation Navaids Checklist

(Refer Section 3.9.4)

Installation _____ ERRV _____

Date of Inspection _____

Item	Number	Operating in unison?	Comment
Main Light (15 nm)			
Secondary Light (10 nm)			
Red Lights (3 nm)			
Foghorn (Main – audible at 2 nm)			
Foghorn (Secondary - audible at 0.5nm)			
Name Display Board (Visible all round) • North • South • East • West			

1. Lights

- Main, Secondary, and red lights flash Morse "U" ·· — signal every 15 seconds.
- Secondary white lights activate on failure of the main white lights.

(Checking of both main and secondary lights would place the ERRV at a considerable distance from the Installation, this should be arranged via a relief ERRV or other vessel).

2. Foghorn

- Sound Morse "U" ·· — signal every 30 seconds.
- Weather conditions under which Fog signals checked to be noted under "Comments".

3. Name Boards

- To be illuminated/reflective with 1m. High black lettering on yellow background.

4. Completion of Report

- Any failures to be reported immediately to OIM and entered in ERRV's log.

E Ship to Ship Transfer of Personnel by Fast Rescue Craft

(Refer to Section 3.12.2)

All responses should be affirmative and both Master's agreed that the operation may proceed.

No.	Check	Yes	No
1	Is the transfer necessary?	Y	N
2	Are the personnel being transferred sufficiently fit and agile?	Y	N
3	Are the personnel being transferred familiar with the movement of small craft in a seaway?	Y	N
4	Are the prevailing (and forecast) weather and sea conditions suitable?	Y	N
5	Is visibility sufficient and is forecasted to remain so, throughout the transfer?	Y	N
6	Is the Rescue Craft's crew who are performing the transfer, in agreement that it is safe to proceed?	Y	N
7	Are all persons involved in the transfer wearing the correct PPE?	Y	N
8	Are the personnel being transferred, in agreement that it is safe to proceed?	Y	N
9	Are the Masters of the vessels concerned, in agreement that it is safe to proceed with transfer?	Y	N
10	Are all concerned with the transfer sufficiently rested to proceed in safety?	Y	N
11	Is back-up available if an incident occurs?	Y	N
12	Is any equipment, being transferred with the personnel, stowed such that it will not hazard the operation?	Y	N
13	Is all equipment to be used for the transfer fit for purpose?	Y	N
14	Are the davits on the destination vessel compatible with the Rescue Craft being used for transfer?	Y	N
15	If davit to davit transfer is not available does the destination vessel have a suitable freeboard for personnel transfer?	Y	N
16	Have all other factors which may affect the safety of the operation been satisfactorily addressed? (List and mitigate these)	Y	N

F ERRV Verification Trial Record Sheet

ERRVA Record Sheet for Verification Recovery and Rescue Exercises

Vessel Name:		Masters Name:		Period of Exercises:	
Client:		Location:		Latitude:	Longitude:

Equipment No.	Description	Davit / Crane Type / Make / Model	Winch Speed	Equipment No.	Description	Davit / Crane Type / Make / Model	Winch Speed
1				5			
2				6			
3				7			
4				8			

Launch or Exercise Date (DD/MM/YY)	Equipment Used (Insert No. from Above)	Number of Mannequins	Number of PIB's Used	Distance from Incident (m)	Bearing from Incident (°)	Times						Wind Direction		Combined Visual Wave / Swell				Area I.D. (WOS, NNS, CNS, SNS or EC)	Daylight / Night Exercise	Comment / Reason for Launch
						Alarm Raised	DC/FRC launch or Equipment Ready	Arrival on Location	1st Pick Up	Last Pick Up	End of Exercise / Place of Safety	Wind Direction (°)	Wind Speed (Knots)	Direction (°)	Significant Wave Height (m)	Visibility (nm)	Period (seconds)			

Signed Master:		Date:		Sheet:	

Area Abbreviations: WOS- West of Shetland, NNS-Northern North Sea, CNS-Central North Sea, SNS-Southern North Sea, EC-English Channel, CS-Celtic Sea, IS-Irish Sea, HB-Hebridean Shelf, ROW-Rest of World

G Adverse Weather Standards for ERRV, Flying, and Overside Operations

Table 3: Adverse Weather Standards for ERRV, Flying, and Overside Operations

Offshore Conditions Assessment					Indicative Working Criteria			
Beaufort Scale	Wind Speed (kts.) 10m. Level	Wind Speed (kts.) 100m. Level	Sig. Wave Ht. (m.)	Max. Wave Ht. (m.)	Sig. Wave Ht. Limits (m.)	ERRV Operations Ref. Notes 1, 2, 3 & 6.	Flying Operations Ref. Notes 2, 4, 5, & 6.	Overside Operations Ref. Notes 1, 3, & 6
5 (Fresh breeze)	17 - 21	22 - 27	2.0	2.5		No limitations	No limitations	No limitations
6 (Strong breeze)	22 - 27	28 - 35	3.0	4.0	3.5	Limit for normal operation of FRC	No limitations	Overside work limit
7 (Near Gale)	28 - 33	36 - 43	4.0	5.5		Emergency operation of FRC only.	No limitations	
8 (Gale)	34 - 40	44 - 52	5.5	7.5	5.5	Limit for emergency operation of FRC.	Aircraft not to engage rotors (45 knots).	
			6.0		6.0		Crew Air Transport Limitation ($6mH_s$)	
9 (Strong Gale)	41 - 47	53 - 61	7.0	10.0	7.0	Limit for use of mechanical recovery aids.	See note 4 below.	
10 (Storm)	48 - 55	62 - 71	9.0	12.5		No longer good prospect of rescue from sea		
11 (Violent Storm)	56 - 63	72 - 82	11.0	16.0		Safety of ERRV takes precedence over all other operations		
12 (Hurricane)	64+	83+	14.0					

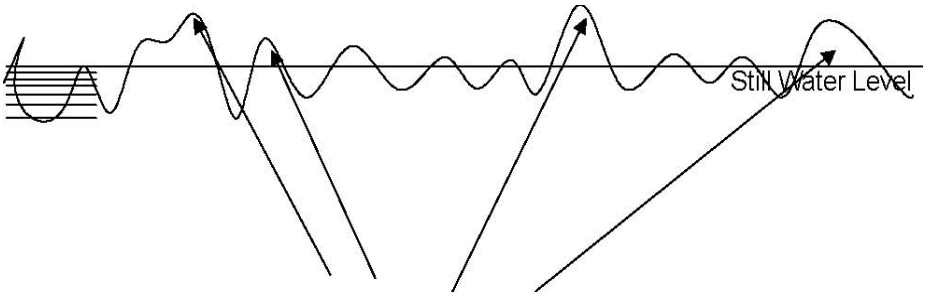
Notes (Refer Section 3.13.2)

1. For overside working, consideration should be given to the ability of the ERRV to observe and monitor personnel engaged in overside work, e.g., consider the effect of fog, heavy rain, etc.
2. The decision to suspend flying operations rests with the OIM in consultation with the ERRV Master, HLO and Aircraft Commander.
3. The decision to suspend overside working rests with the OIM in consultation with the ERRV Master.
4. Routine flying operations suspended at CAP1145.
5. Lower limits may apply in sea areas where short, steep seas are experienced. e.g., Southern North Sea.
6. The assessment of conditions should include the use of hand-held or fixed anemometers and consideration of present and forecast conditions.
7. Other limitations pertaining to heave, roll and pitch of mobile Installations/ERRVs are covered by specific procedures of the helicopter operator concerned.
8. During periods of adverse weather which may affect operations, e.g., reduced visibility due to fog or heavy rain, icing etc., the decision to continue operations rests with the OIM in consultation with the Aircraft Commander and/or ERRV Master.

Significant Wave Height

Forecasters give predictions of "significant" and "maximum" wave heights. It is important to understand the meaning of these terms and how they relate.

Typically, the sea surface is comprised of an ever-changing pattern of bumps and hollows that never repeats itself. If these waves were recorded for some time, a random wave pattern would emerge, as shown in the figure below.



Significant Wave Height

Figure 1 Record of Random Sea

Observers estimating the wave height in this random sea, however, will tend to ignore the smaller waves and concentrate on the larger ones, since these are the ones that most concern them. The wave height thus estimated is approximately the same as the "significant wave height".

Observers are therefore concentrating only on these larger waves, which make up approximately one third of all waves. The other two thirds are ignored, these being too small to worry about or hard to recognise as being individual waves.

The Meteorological Office Definitions

Significant Wave Height (H_S)

Average height of the highest one third of the waves over a 20-minute period.

Maximum Wave Height (H_{max})

Height of the highest wave in a 20-minute period

Figure 4: Beaufort Scale – Force 1 Sea Conditions

FORCE 1

Wind speed 1-3 kn.: mean 2 kn.

Source: Crown (Met Office)

Figure 5: Beaufort Scale – Force 2 Sea Conditions

FORCE 2

Wind speed 4 –6 kn.
(Small wavelets, still short but more pronounced. Crests have a glassy appearance and do not break)

Source: Crown (Met Office)

Figure 6: Beaufort Scale – Force 3 Sea Conditions

FORCE 3

Wind speed 7–10 kn. mean 9 kn.

Source: Crown (Met Office)

Figure 7: Beaufort Scale – Force 4 Sea Conditions

FORCE 4

Wind speed 11–16 kn.: mean 13 kn.

Source: Crown (Met Office)

Figure 8: Beaufort Scale – Force 5 Sea Conditions

FORCE 5

Wind speed 17–21 kn.: mean 19 kn.

Source: Crown (Met Office)

Figure 9: Beaufort Scale – Force 6 Sea Conditions

FORCE 6

Wind speed 22–27 kn.: mean 24 kn.

Source: Crown (Met Office)

Figure 10: Beaufort Scale – Force 7 Sea Conditions

FORCE 7

Wind speed 28–33 kn.: mean 30 kn.

Source: Crown (Met Office)

Figure 11: Beaufort Scale – Force 8 Sea Conditions

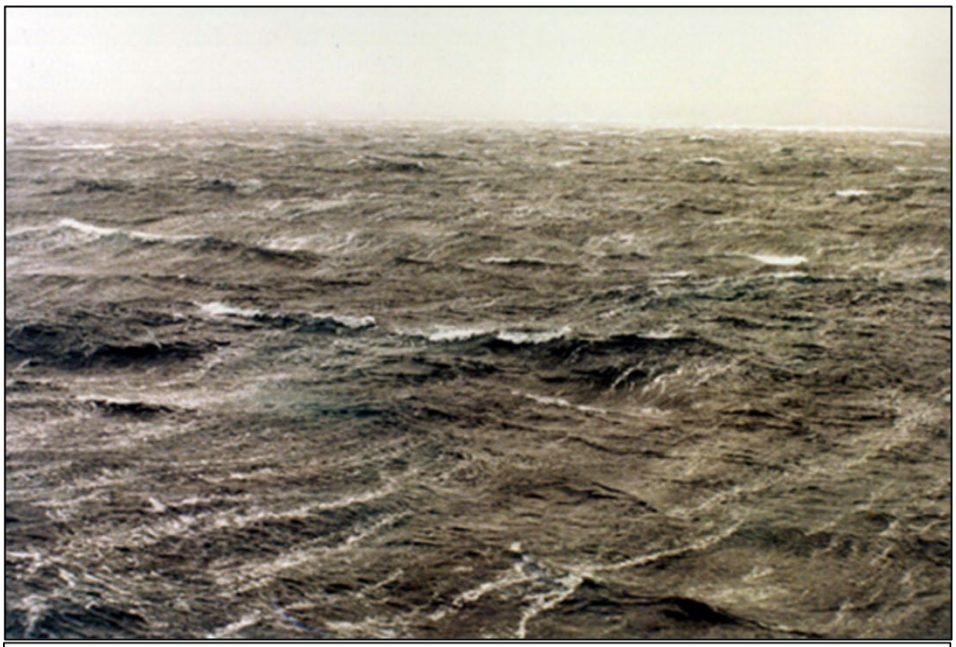
FORCE 8

Wind speed 34–40 kn.: mean 37 kn.

(Moderately high waves of greater length; edges of crests begin to break into

Source: Crown (Met Office)

Figure 12: Beaufort Scale – Force 9 Sea Conditions

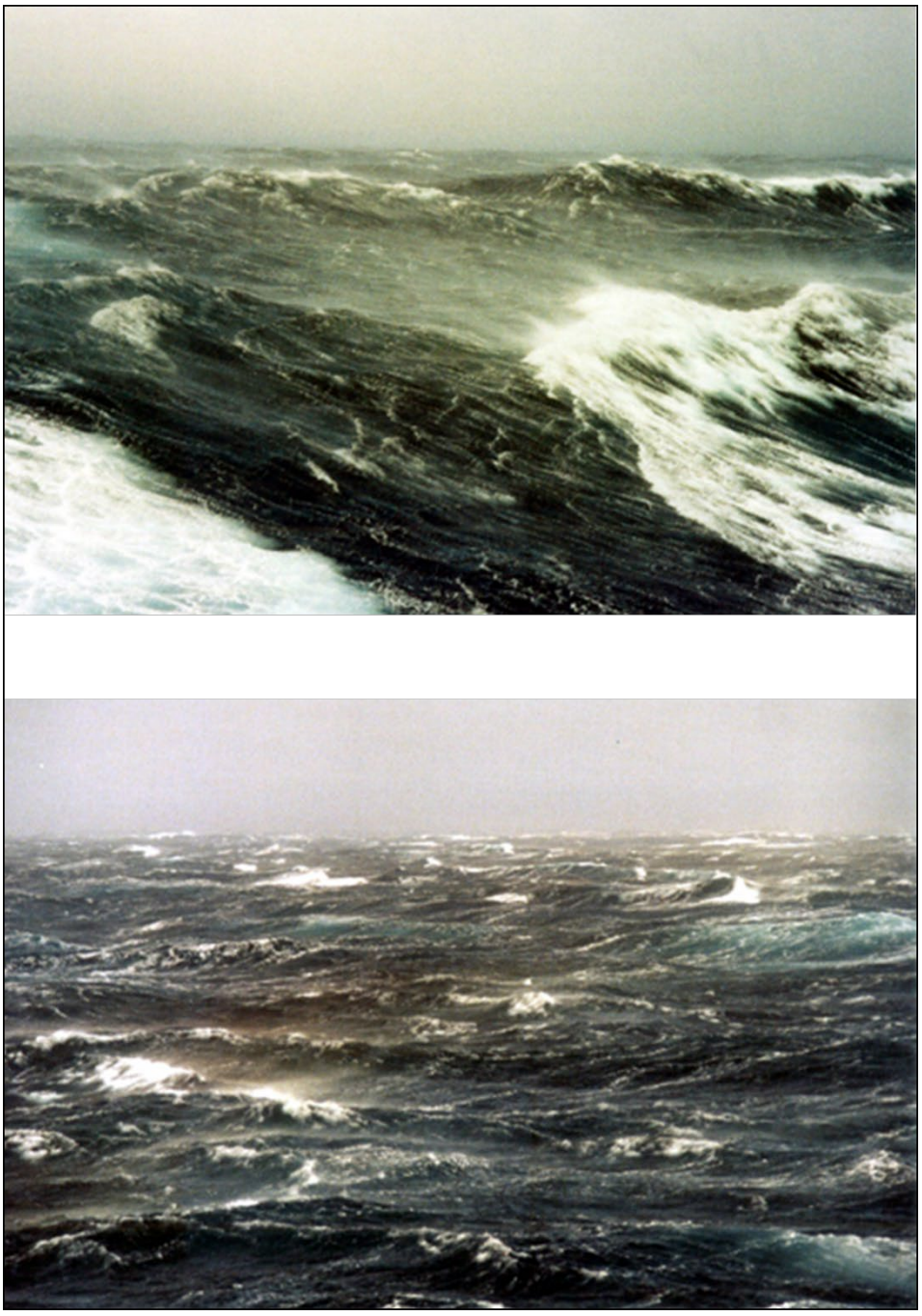


FORCE 9

Wind speed 41–47 kn.: mean 44 kn.

Source: Crown (Met Office)

Figure 13: Beaufort Scale – Force 10 Sea Conditions



FORCE 10

Wind speed 48–55 kn.: mean 52 kn.

(Very high waves with long overhanging crests. The resulting foam, in great patches, is blown in dense white streaks along the direction of the wind. On the whole, the surface of the sea takes a white appearance. The 'tumbling' of the sea becomes heavy and shock-like. Visibility affected.) (The upper and

Source: Crown (Met Office)

Figure 14: Beaufort Scale – Force 11 Sea Conditions

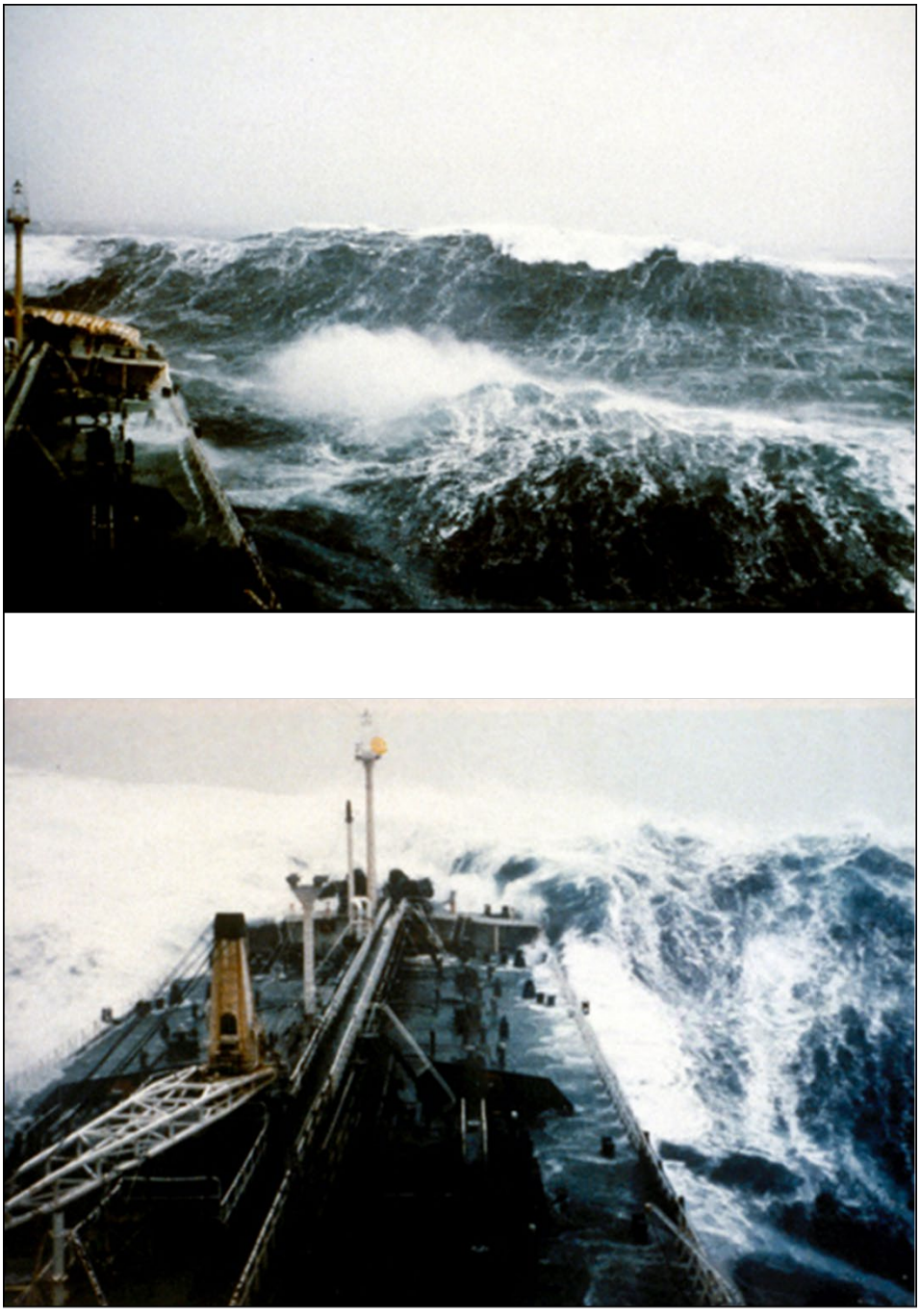
FORCE 11

Wind speed 56–63 kn.: mean 60 kn.

(Exceptionally high waves (small and medium-sized ships might be lost to view for a time behind the waves). The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the

Source: Crown (Met Office)

Figure 15: Beaufort Scale – Force 12 (Hurricane) Sea Conditions



FORCE 12

Wind speed 64–71 kn.: mean 68 kn.
(The air is filled with foam and spray. Sea completely white with driving spray; visibility seriously affected.)

Source: Crown (Met Office)

Figure 16: Beaufort Scale

Beaufort scale

Specifications and equivalent speeds

Force	Description	Specification for use at sea*	Equivalent speed at 10 m above sea level: Mean knots	Mean metres per second	Limits knots	Limits metres per second	Description in forecasts	State of sea	Probable height of waves metres
0	Calm	Sea like a mirror.	0	0.0	<1	0.0-0.2	Calm	Calm	0.0
1	Light air	Ripples with the appearance of scales are formed, but without foam crests.	2	0.8	1-3	0.3-1.5	Light	Calm	0.1 (0.1)
2	Light breeze	Small wavelets, still short but more pronounced. Crests have a glassy appearance and do not break.	5	2.4	4-6	1.6-3.3	Light	Smooth	0.2 (0.3)
3	Gentle breeze	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered white horses.	9	4.3	7-10	3.4-5.4	Light	Smooth	0.6 (1.0)
4	Moderate breeze	Large waves begin to form; the white foam crests are more extensive everywhere. Probably some spray.	13	6.7	11-16	5.5-7.9	Moderate	Slight	1.0 (1.5)
5	Fresh breeze	Moderate waves, taking a more pronounced long form; many white horses are formed. Chance of some spray	19	9.3	17-21	8.0-10.7	Fresh	Moderate	2.0 (2.5)
6	Strong breeze	Large waves begin to form; the white foam crests are more extensive everywhere. Probably some spray.	24	12.3	22-27	10.8-13.8	Strong	Rough	3.0 (4.0)
7	Near gale	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	30	15.5	28-33	13.9-17.1	Strong	Very rough	4.0 (5.5)
8	Gale	Moderately high waves of greater length; edges of crests begin to break into spindrift. The foam is blown in well-marked streaks along the direction of the wind.	37	18.9	34-40	17.2-20.7	Gale	High	5.5 (7.5)
9	Strong gale	High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility.	44	22.6	41-47	20.8-24.4	Severe gale	Very high	7.0 (10.0)
10	Storm	Very high waves with long overhanging crests. The resulting foam, in great patches, is blown in dense white streaks along the direction of the wind. On the whole, the surface of the sea takes a white appearance. The 'tumbling' of the sea becomes heavy and shock-like. Visibility affected.	52	26.4	48-55	24.5-28.4	Storm	Very high	9.0 (12.5)
11	Violent storm	Exceptionally high waves (small and medium-sized ships might be lost to view for a time behind the waves). The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the edges of the wave crests are blown into froth. Visibility affected.	60	30.5	56-63	28.5-32.6	Violent storm	Phenomenal	11.5 (16.0)
12	Hurricane	The air is filled with foam and spray. Sea completely white with driving spray; visibility seriously affected.	-	-	64 and over	32.7 and over	Hurricane force	Phenomenal	14.0 (-)

Source: Crown (Met Office)

H Sample Emergency Scenario Checklists

CHECKLIST 'A': EMERGENCY NOTIFICATION CHECKLIST - (Refer Section 6)

Upon Notification of Emergency	
Activate alarm and issue distress or urgency message	
Crew to Emergency Stations	
Establish communications with Installation and other SAR resources	
Establish nature and location of incident	
Commence Incident Log	
Commence Status Board	
Assume OSC role (if designated or if first ERRV on scene and OIM unable to assume role)	
Establish communications with SMC/OSC as appropriate	

CHECKLIST 'B': FIRE, EXPLOSION, GAS LEAK, STRUCTURAL FAILURE, MASS EVACUATION AND ABANDONMENT

First Actions	
Locate to Optimum Position	
Assess environmental conditions (weather, sea, tide, visibility)	
Establish ETA at incident	
Brief crew on situation	
Prepare appropriate rescue equipment	
Confirm effective communication with crew, FRC and DC	
Open communication with HM Coastguard (if designated OSC)	
Confirm Distress relay	
Refer to Duty Holders ERP (ERRV Data Card)	
Confirm Installation POB	
Secondary Actions	
Ensure safety of crew (esp. FRC and DC crews)	
Consider effect of weather on recovery and rescue options	
Launch FRC/DC and/or prepare overside rescue equipment	
Initiate recovery and rescue arrangements and survivor management	
Maintain SAR and marine support communication with regular SITREP	
Consider location with respect to gas escape, fire and chemical hazards	
Consider location with respect to collapsing Installation structure	
Maintain standard communications terminology	
Provide lee to TEMPSC and/or life rafts	
Transfer and manage survivors	
Plan search including location and detection using ARPA (if available)	

CHECKLIST 'C': HELICOPTER DITCHING

First Actions	
Proceed to scene of incident	
Assess environmental conditions (weather, sea, tide, visibility)	
Establish ETA at incident	
Brief crew	
Prepare rescue equipment	
Confirm effective communication with crew, FRC/DC	
Open communication with HM Coastguard (if designated OSC)	
Confirm Distress relay	
Refer to Duty Holders ERP (ERRV Data Card)	
Confirm helicopter POB, helicopter details and call-sign	
Secondary Actions	
Ensure safety of crew (esp. FRC and DC crews)	
Consider effect of weather on recovery and rescue options	
Launch FRC/DC and/or prepare overside rescue equipment	
Initiate recovery and rescue arrangements and survivor management	
Liaise with Installation radio operator	
Estimate set and drift of helicopter life rafts	
Implement detection and location finding using EPIRB, PLB, radar etc.	
Post lookouts	
Maintain communication with other SAR facilities	

CHECKLIST 'D': MARINE INCIDENT, ERRANT VESSEL

First Actions	
Inform Installation OIM and maintain communications	
Try to establish communications with vessel	
Try to establish nature of problem	
Ensure HM Coastguard are aware – either through the installation or ERRV	
Assess environmental conditions (weather, sea, tide, visibility)	
Establish set and drift of errant vessel	
Take appropriate action to prevent/minimise impact with Installation	
Establish marine resource availability (especially suitable towing vessel)	
Secondary Actions	
Record communications with errant vessel	
Establish Master's name and intentions	
Record nationality of vessel	
Record port of registry	
Record registration number (if fishing vessel)	
Record type of vessel	
Record length and tonnage	
Record cargo (quantity and associated hazards)	
Calculate CPA and time to CPA	
Establish vessel POB	
Establish POB on Installation hazarded	
Advise errant vessel of nearby hazards, e.g. subsea wellheads and pipelines	

CHECKLIST 'E': MAN OVERBOARD

First Actions	
Proceed to last sighted position or location of MOB	
Ensure HM Coastguard are aware – either through the installation or ERRV	
Assess environmental conditions (weather, sea, tide, visibility)	
Calculate ETA at MOB	
Brief crew	
Prepare rescue equipment	
Confirm effective communication with crew, FRC and DC	
Refer to Duty Holders ERP on ERRV Data Card	
Confirm number of MOB	
Secondary Actions	
Ensure safety of crew (esp. FRC and DC crews)	
Evaluate recovery options in prevailing weather	
Launch FRC or DC or prepare overside rescue equipment	
Initiate recovery and rescue arrangements and survivor management	
Liaise with Installation radio operator	
Calculate set and drift of POB	
Implement PLB location (if applicable)	
Post lookouts	
Liaise with other SAR support.	

CHECKLIST 'F': ON-SCENE CO-ORDINATOR

First Actions	
Assume role as soon as required	
Inform other SRU of your responsibilities as OSC	
Establish incident scene and locate to the optimum position	
Assess environmental conditions (weather, sea, tide, visibility)	
Confirm SRU detection systems and search and rescue equipment	
Establish positions of any personnel in sea	
Establish search area	
Initiate the plan of action as directed by SMC	
Secondary Actions	
Maintain detailed record of operations including: -	
Areas searched.	
Track spacing.	
Sighting and leads reported.	
Actions taken.	
Results obtained.	
Establish and assign: -	
Separation of SRU.	
Appropriate search patterns.	
Other SAR search patterns.	
Maintain and control on-scene search and rescue communications	
Maintain and control communication with HM Coastguard	
Monitor weather conditions and communicate significant changes to SMC	
Modify operations plan as on-scene conditions dictate and communicate changes to SMC	
Advise SMC of release of SRU.	

CHECKLIST 'G': POST INCIDENT ACTIONS

Upon Notification of Incident Conclusion	
Make record of Status Board	
Collect and record all information regarding the incident	
Perform and record crew de-brief	
Collect witness statements as appropriate	
Assess crew fatigue	
Assess and monitor crew behavior	
Call for support from Installation if required	
Assess ERRV and equipment damage if incurred	
Stand-down crew and thank them for their efforts	
Request relief ERRV if required	

I Helicopter Winching Checklist

1.0 Pre-Winching Checklist. - (Refer to Section 6.6)

Action	Confirmed?
Has the Installation OIM given permission to winch subject to the ERRV Master's Consent?	Ref. Note 1.
Has the pilot briefed the Master on how he intends to perform the winching and requested a particular course and speed?	Ref. Note 2.
Has the ERRV Master given the Helicopter Pilot permission to winch to/from his vessel?	
Has the Master briefed the crew on the intended operation?	
Has the Master warned the deck crew against touching the winchline or winchman before they have been earthed?	
Have all loose objects on deck been removed or secured?	
Have removable obstructions, e.g., ensign staffs, around the Winching Zone, been dismounted where possible or otherwise illuminated (at night)?	
Are all persons who will need to go on deck wearing appropriate PPE including helmets with chin straps fastened?	
Have fire hoses been run out for use with nozzles pointing away from the Winching Zone?	
Are fire hoses secured or pressurised to prevent being dislodged?	
Have wire cutters been placed ready for severing a fouled winching wire?	
Are the deck crew standing clear of but adjacent to the Winching Zone?	
Is a FRC prepared for launch with its crew on standby?	
Has a satisfactory radio check been performed with the deck and FRC crews at their Stations?	Ref. Note 3.
Is all deck lighting pointing down such that the Helicopter Pilot is not dazzled?	
Is a flag, windsock or similar being flown in a prominent, safe position to indicate wind direction to the Helicopter Pilot?	
Is the Winching Zone illuminated by downward-pointing lights?	

Note 1: It is possible that in an emergency obtaining prior consent from the OIM may be impracticable. In such circumstances, winching will be at the Master's and Helicopter Pilot's discretion.

Note 2: The Master should assess whether the requested course and speed will take him out with his operational area and thereby prejudice other operations. If necessary, the Master should advise the Helicopter Pilot accordingly and agree an alternative plan of action.

Note 3: It is strongly recommended that radio helmets or similar means are used on deck to reduce interference with communications from aircraft engine noise.

J Place of Safety

(Reference OEUK Guidelines for the Management of Emergency Response)

PLACE OF SAFETY

PFEER refers to the recovery and rescue of people from the sea and taking them to 'a place of safety'.

The PFEER ACoP states that it must be available in all but 'exceptional' 'weather and sea conditions' and that these 'exceptional' conditions must be defined by the operator.

The following is intended to set out those capabilities that must be available in any place of safety used to meet the PFEER requirements.

1. Casualty Treatment

Means and persons competent in their use must be present at the Place of Safety to treat all those rescued/recovered in ways that provide good prospects of their survival. These should provide for the initial treatment of the consequences of immersion – e.g., cold shock, drowning, near drowning and secondary drowning, post immersion collapse and hypothermia. They should also provide for the treatment of injuries likely to be sustained in a helicopter crash or when escaping to the sea from an installation – e.g., burns, cuts, abrasions, fractures and internal, back and neck injuries.

2. Conditions at the Place of Safety

These must be suitable to ensure good prospects of survival for all those rescued/recovered to the Place of Safety. It must be possible to provide appropriate care to survivors for an extended period if local conditions do not allow for their early transfer – e.g., through fog, snow, icing or exceptional sea conditions.

3. Casualty Reception

These must be a casualty reception area suitable for dealing with all those who have been rescued/recovered to the Place of Safety and manned by persons competent in receiving casualties.

4. Casualty Monitoring

Means and persons competent in their use must be available at a Place of Safety to monitor and record the personal and medical details of all those rescued or recovered to it for as long as they may remain in it.

5. Communications

Means and persons competent in their use must be present for the transfer, when required, of information to appropriate bodies on shore about the identity and condition of all those rescued/recovered to the Place of Safety and the progress of rescue/recovery operations. Means of communication must be available at the Place of Safety for additional transfer of information from shore – e.g., medical and rescue operation advice.

6. Transfer Facilities

The Place of Safety must incorporate safe and quick access to an area that will enable transfer to a helicopter of those survivors who need immediate intensive medical care.

This area should also be suitable for transfer of medical personnel to the Place of Safety if necessary.

7. Safety from the original cause of the need for rescue and recovery

The risk to the Place of Safety from the original cause of the need for rescue and/or recovery, or any other hazard that develops from it, must not exceed that which would ensure good prospects of survival to all those on board.

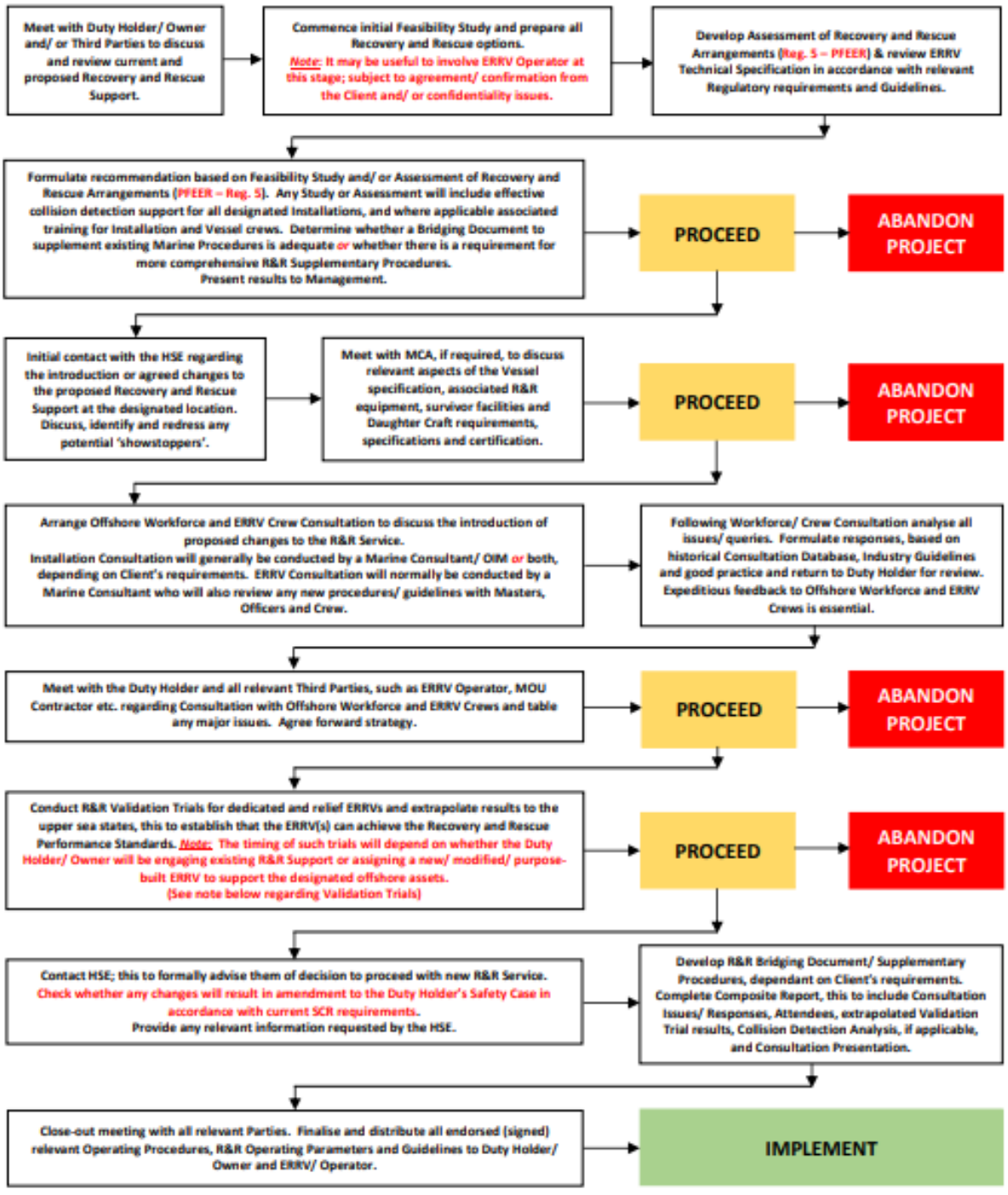
8. Safety from Environmental Hazards

The Place of Safety must offer good prospects of survival from any environmental hazards to all those onboard.

K Recovery and Rescue Support ERRV Sharing Methodology

SEACROFT MARINE CONSULTANTS LTD
A CARBON NEUTRAL COMPANY

RECOVERY AND RESCUE SUPPORT ERRV SHARING METHODOLOGY



NOTE:
1. Duty Holders require evidence from ERRV Operators that the designated ERRV(s) will be able to meet the Recovery and Rescue Performance Standards, prior to any engagement, by undertaking Validation Trials and associated extrapolation of results to the upper sea states. For geographically large arrangements (>10nm) this may require a series of extended Validation Trials over a range of distances, sea states and light conditions rather than a single set of annual trials per ERRV / crew.
2. Duty Holder in conjunction with the ERRV Operator will demonstrate that the ERRV or Installation(s) or a combination of all assets can achieve constant surveillance of vessels within agreed and realistic distances from Installations and have the capability to respond effectively to any errant vessels in accordance with O&GUK Guidelines and Standard Operating Procedures.

L Use of non-certified ERRV's – No Certified ERRV's available

(Extracted from Issue Brief - HSSE/HSE/IB/2006/2 dated 20th. February 2006)

ISSUE BACKGROUND:

The high activity levels in the UKCS have resulted in a shortage of UK based Emergency Response and Rescue Vessels (ERRVs). To meet business demands UK Operators have been employing vessels from other Continental Shelf countries. MCA and HSE have complained that some of these vessels fall below the standards required in the guidelines and may not enable the Duty holders to meet their performance standards, required under PFEER.

ISSUE SENSITIVITIES:

Following the Piper Alpha Enquiry Lord Cullen made recommendations regarding the standards of standby vessels and the training of their crews. OEUK in conjunction with the Standby Vessels owners and the Regulators revised the Standby Vessel Code and have revised it several times over the years. The Code is now referred to as Emergency Response and Rescue Vessel Management Guidelines. There is an accompanying publication providing guidance for the survey of these vessels. One of the requirements of the guidelines is that vessels should hold a Certificate of Compliance issued by MCA.

OEUK RESPONSE:

Oil & Gas UK has met with ERRVA, MCA and HSE to agree interim arrangements for the use of vessels, which do not meet the Certification standards of the OEUK/ERRVA Guidelines. OEUK has undertaken to reinforce its guidelines to its Member Companies and request that Companies make best endeavours to ascertain the availability of certified vessels before considering a non- certified vessel. ERRVA has undertaken to assist companies in their search for suitable vessels.

ACTIONS REQUIRED:

Companies should endeavour to employ vessels that have been surveyed and issued with a compliance certificate for the appropriate group i.e., Group 'A', 'B' or 'C'. (See below table on ERRV Manning as extracted from Section 1.7 ERRV Manning from the Operational Guidelines):

ERRV Group	Total Manning	Grade 1 Seaman (minimum)	Grade 2 Seaman (minimum)	Advanced Medical Aiders	FRC Crew
'A'	15	2	3	2	9 incl. 3 Cox'n
'B'	12	2	2	1	6 incl. 2 Cox'n
'C'	9	2	1	1	4 incl. 2 Cox'n

Only if there are NO vessels available under section 1 above, then vessels issued with a certificate, by another European Marine Administration, and substantially meeting the UK guidelines, in particular the need for 12 crew and able to deploy two FRCs at the same time, are considered acceptable. This will be confirmed in writing by MCA and will be subject to a time limit of three months, or one well, whichever is greater. These vessels may be inspected by MCA under port state control and to ensure they meet the requirements of the acceptance letter.

Only if there are NO vessels available under sections 1) & 2) above may vessels falling within section 3) be considered as a last resort. Vessel owners/Brokers/Duty Holders who are considering deploying such vessels, that clearly do not meet the guidelines, should liaise with MCA and HSE to consider what arrangements can be put in place to meet required performance standards. A decision can then be made on a case-by-case basis, whether a single vessel, or a combination of vessels acting together, can meet the performance standards. (See section 4 below relating to HSE requirements for these vessels.) If after assessment the vessel/s is found satisfactory, a letter or email can be sent giving a time limit of 28 days from the Operators specified start time. This acceptance may be renewed subject to confirmation to MCA that vessels under 1 and 2 above are not available. These vessels may be inspected by MCA under port state control, to ensure they meet the requirements of the acceptance letter.

It is for the duty holder to demonstrate either by a trial or by assessment of previous trials conducted under the supervision of other coastal states.

That the vessel and its crew can achieve all the relevant duty holders' recovery and rescue performance standards, across the whole operational range.

That the systems on the vessel, essential to achieving these performance standards, are sufficiently reliable to ensure that failure of the vessel and its crew to meet the performance standards is not reasonably foreseeable.

M Suggested Content for an ERRV Handover Checklist

Vessel Name
Client Name
Location Served
Date & Time of Arrival/Departure
Length Overall (m)
Breadth (m)
Maximum Draft (m)
Registered Tonnage
Official Number
Port of Registry
Propulsion Engine Power (kW)
Year of Build
MMSI Number
Call-Sign
Satellite Phone No.
VOIP Phone No.
Mobile Phone No.
E-Mail Address
Number of Crew
Survivor Capacity
Standby Certificate Expiry Date

Helicopter Band Frequency
Dispersant Type and Quantity
Dispersant – Date Last Tested

Masters Name
Chief Officers Name
Second Officers Name(s)
Watch Rota
AMA Name(s)
Watch Rotas

Fast Rescue Craft Types and Numbers
Daughter Craft Types and Numbers
Mechanical Recovery Device Type

Petrol for Rescue Craft ROB
Fuel Oil ROB
Lubricating Oil ROB
Potable Water ROB
Food stocks for how many days

Departure Destination
Destination ETA

Machinery Fully Operational?
Bridge Equipment Fully Operational?
Communication Systems Fully Operational
Rescue Equipment Fully Operational?

Latest Installation Data Cards Onboard?
Field Operating Manuals read and understood by Bridge Team?
Latest Installation POB Information Onboard?
Latest Weather Information onboard?
Mooring and Buoy Patterns and Positions Information onboard?
Are there any other attendant Vessel operations expected?
Correct Installation/Vessel Radio Frequencies Verified?
All Current Installation Planned Work-Scopes Fully Understood?
Collision Risk Monitoring Requirements Fully Understood?

Has Arriving Vessel Confirmed Operational Status to Installation?
Have Installation Relevant Parties been Advised of Vessel Handover?

Signatures, Names and dates of those preparing Checklist

N Emergency Locator Beacon and PPE Grab Handles Guidance for Offshore Rescue Crews

1.0 INTRODUCTION AND PURPOSE

This guidance has been produced to provide information and guidance to offshore rescue crews in the correct handling of emergency locator beacons currently in use in the offshore oil and gas industry in the UKCS. Its content may be applied in other geographical and / or commercial sectors, but it should be known that there are many other products and items of equipment in use worldwide that are not contained in this document.

2.0 OVERVIEW OF EMERGENCY LOCATOR BEACONS

Emergency locator beacons are tracking transmitters which aid in the detection and location of boats, aircraft, and people in distress. They are radio beacons that can interface with satellite systems for search and rescue (SAR) and radio direction finders on SAR vessels and aircraft with the basic purpose of ensuring people are rescued as quickly as possible.

When activated, such beacons send out a distress signal, some of which can be detected by satellite on 406 MHz, but all of which can be detected by radio direction finders locally on 121.5 MHz, which is essential for homing at close range. In the case of 406 MHz beacons which transmit digital signals, the beacons can be uniquely identified by satellite almost instantly, and furthermore, a GPS position can be encoded into the signal, which provides instantaneous identification of the registered user and its location.

By using the initial position provided via the satellite system or mayday / distress radio broadcast, SAR aircraft and surface search parties can home in on the 121.5MHz distress signals from the beacons and come to the aid of the concerned boat, aircraft, or people.

The title Emergency Locator Beacons covers a wide range of beacons which are often given a variety of names depending on their application. Beacon types that are commonly used are also known as Emergency Beacons, Emergency Location Transmitters (ELTs), Automatically Deployed Emergency Location Transmitters (ADELTs), Crash Position Indicators (CPIs), Emergency Position Indicating Radio Beacons (EPIRBs) and Personal Locator Beacons (PLBs).

There are three main types of distress radio beacons which can be put into the following three categories: -

- EPIRBs which signal maritime distress.
- ELTs which signal aircraft distress (Including ADELTs and CPIs).
- PLBs which indicate a person in distress

Note: All beacons are of greater assistance to the rescue crew in darkness, restricted visibility and adverse weather. Experience has shown in good conditions it may be possible to locate the casualty visually before the homing frequency is detected depending on the strength of the signal being transmitted. Therefore, a good visual and listening lookout should be maintained at all times.

2.1 Helicopter Beacons

All helicopters operating offshore in the UKCS are equipped with at least one ELT / CPI which can be deployed and activated manually by the pilot or co-pilot or automatically upon impact or when submerged in water.

These beacons transmit the aircraft's last known GPS position to satellites on 406 MHz and are located by radio directions finders on 121.5MHz.

See Section 'A' for the types in use and deactivation instructions.

2.2 Helicopter Life raft Beacons

All helicopters operating offshore in the UKCS are equipped with two life rafts which contain an ELT. There is one type in use offshore in the UKCS which is activated manually by the occupants of the life raft.

See Section A for the type in use and deactivation instructions.

2.3 Helicopter Crew Beacons

All helicopter pilots and co-pilots operating offshore in the UKCS are equipped with a PLB. There are two types in use offshore in the UKCS. Both can be activated manually or automatically when submerged in water.

See Sections 'B' & 'C' for the types in use and deactivation instructions.

2.4 Helicopter Passenger Beacons

By mid-2010 all helicopter passengers travelling offshore in the UKCS will be equipped with PLBs. There are currently two types of passenger PLBs approved for use offshore in the UKCS. Both can be activated manually or automatically when submerged in water.

See Section 'D' for the types in use and deactivation instructions.

2.5 TEMPSC / Lifeboat Beacons

Some offshore installation TEMPSC / Lifeboats are equipped with EPIRBs. Their fitment is not mandatory and there are many different types in use (too many to list in this document). If fitted, Duty Holders and rescue crews should ensure information is available on the type fitted at the installation(s) they are supporting.

2.6 Installation Life raft Beacons

Some offshore installation life rafts are equipped with locator beacons. Their fitment is not mandatory and there are many different types in use (too many to list in this document). If fitted, Duty Holders and rescue crews should ensure information is available on the type fitted at the installation(s) they are supporting.

2.7 Overside Work Beacons

Not all duty holders in the UKCS currently equip personnel with PLBs for overside work situations but some do. Those companies that do will provide them to all personnel engaged in overside work. As well as the two types of helicopter passenger PLBs in use offshore (which can also be used for overside work) in the UKCS there is a third PLB (that is no longer permitted on aircraft) that can also be used onboard installations. This can be activated manually or automatically when submerged in water.

See Sections 'D' &' 'E' for the types in use and deactivation instructions.

3.0 EQUIPMENT TESTING AND CREW FAMILIARISATION

All offshore rescue crews should ensure they have sufficient knowledge to ensure they can correctly operate any homing equipment they may have to operate as part of their duties and / or recognise and deactivate any Emergency Locator Beacons that may be recovered during a rescue.

Crews should also ensure they are aware of how their equipment 'behaves' when it encounters multiple signals. Most modern direction-finding equipment will home in on the strongest signal but this should be verified by the crew for each individual piece of equipment.

Exercises and familiarisation training should be conducted to verify crew competence.

It is also recommended that Duty Holders validate the correct use and operation of associated equipment by means of independently witnessed trials with rescue crews. This could be conducted in conjunction with other independently witnessed exercises to minimise the impact to other crew and / or vessel commitments.

Any 'live' testing of homing equipment for exercise and training purposes should be conducted on the test frequency only (121.65 MHz). Duty Holder's should provide test units for this purpose.

Testing should NOT be conducted on the 'emergency' frequency 121.5MHz

4.0 RECOVERY PROCEDURE

So as not to impede the rescue, all recovered beacons should be deactivated. However, rescue crews should not endanger themselves by boarding abandoned helicopters just to find and deactivate locator beacons.

Direction finding equipment will normally lock on to the strongest signal which is likely to be coming from the beacon that is highest or closest to the receiving antennae. If not deactivated it is likely homing equipment will lock onto the beacon which is onboard the rescuing aircraft or vessel (whether onboard your own or a nearby aircraft / vessel) before detecting any further casualties in the water.

Crews should be aware that some beacons transmit on higher power than others so a high-powered aircraft beacon, for example, may mask the detection of lower powered PLBs worn by immersed casualties. Therefore, when conducting a search for survivor's rescue crews should also attempt to locate and deactivate any beacons that may have floated free to avoid confusion during the rescue.

At the earliest opportunity, the time and location of the beacon recovery must be passed to the co-ordinating rescue centre - normally a Coastguard MRCC. This is of particular importance for the PLBs (crew or passenger). Whilst this may appear to add to the rescue unit's workload, time and location

details can greatly assist the MRCC in defining or refining search areas for other survivors - particularly important in the event of a malfunction of an individual PLB.

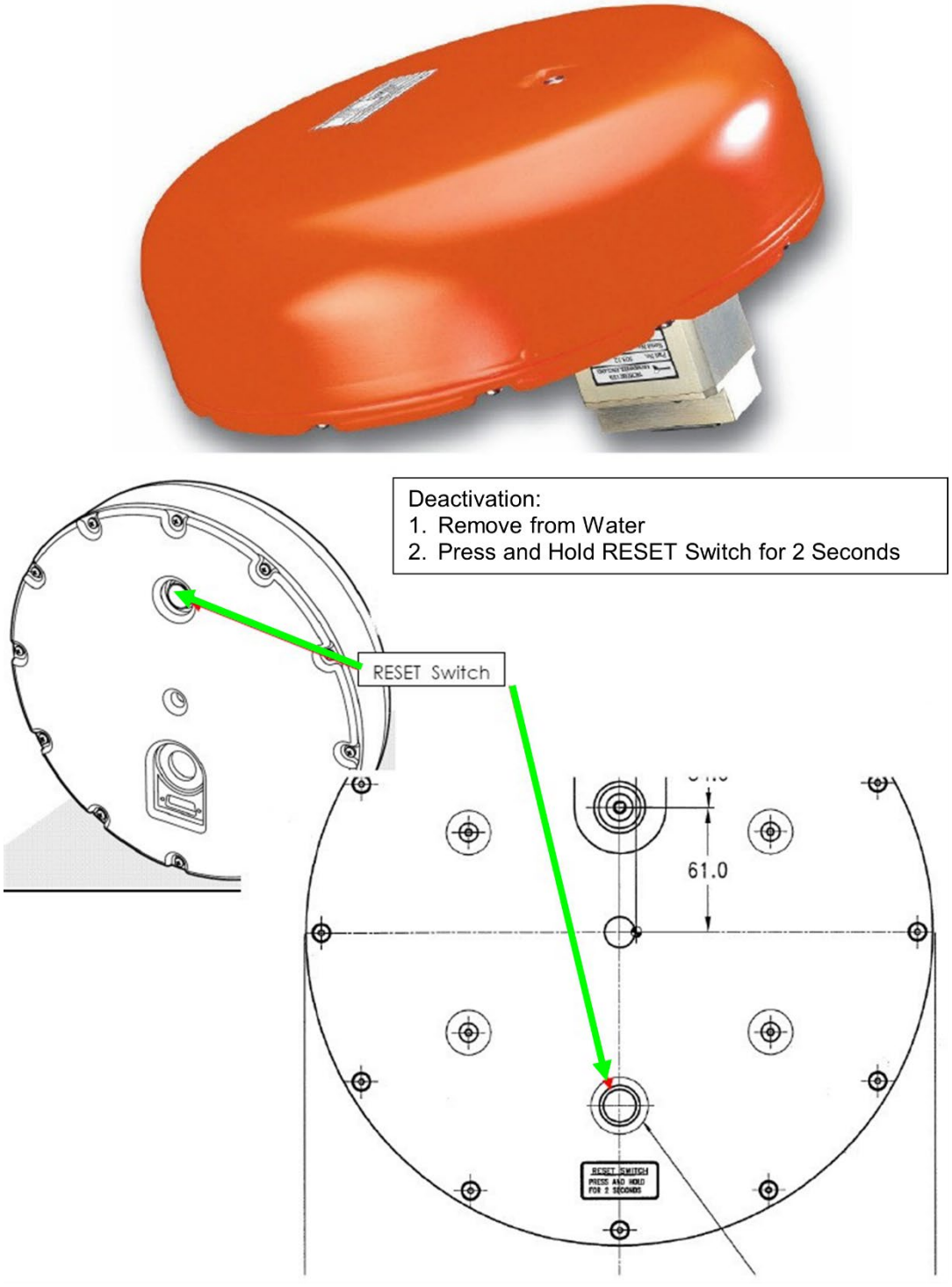
5.0 GRAB HANDLES FOR SURVIVAL SUITS AND LAPP JACKET

If possible, the grab handles of survival suits or life jackets should be used when recovering persons from water. Grab handles are fit for manual handling purposes due to their reinforced stitching.

These handles are ordinarily located by the nape of the neck and are a different colour to the rest of the suit/ jacket. In some cases, a reflective strip may help locate the handle. There are currently no grab handles on helicopter crew suits, due to the fact they have handles on the aviation life jackets.

Photographs of the grab handles for the most common PPE are given in Section 'F'.

Figure 17: HR Smith Techtest 503-1 – Helicopter Crash Position Indicator



Source: OEUK

Figure 18: HR Smith Techtest 503-16 – Helicopter Crash Position Indicator

Summary
This is a large round orange disc that usually mounts on the LHS tail/baggage bay area of the aircraft, when deployed transmits homing signals on both 121.5 MHz (Civil) and 243.0 MHz (Military) distress frequencies together with 406.025 MHz for satellite location.

Deactivation
On the rear flat face there is a connector plug and a round button, press and hold the button for approximately 5 seconds to deactivate. The CPI's beeping will then stop.

Source: OEUK

Figure 19: Caledonian Airborne Systems CPT-900 – Helicopter Emergency Locator Transmitter

'Power' and 'Transmit' Indicators

Summary for Deactivation of CPT-900

1. Remove from water.
2. Flick 'ARM' Switch to 'OFF'.
3. Press TST/RST button.

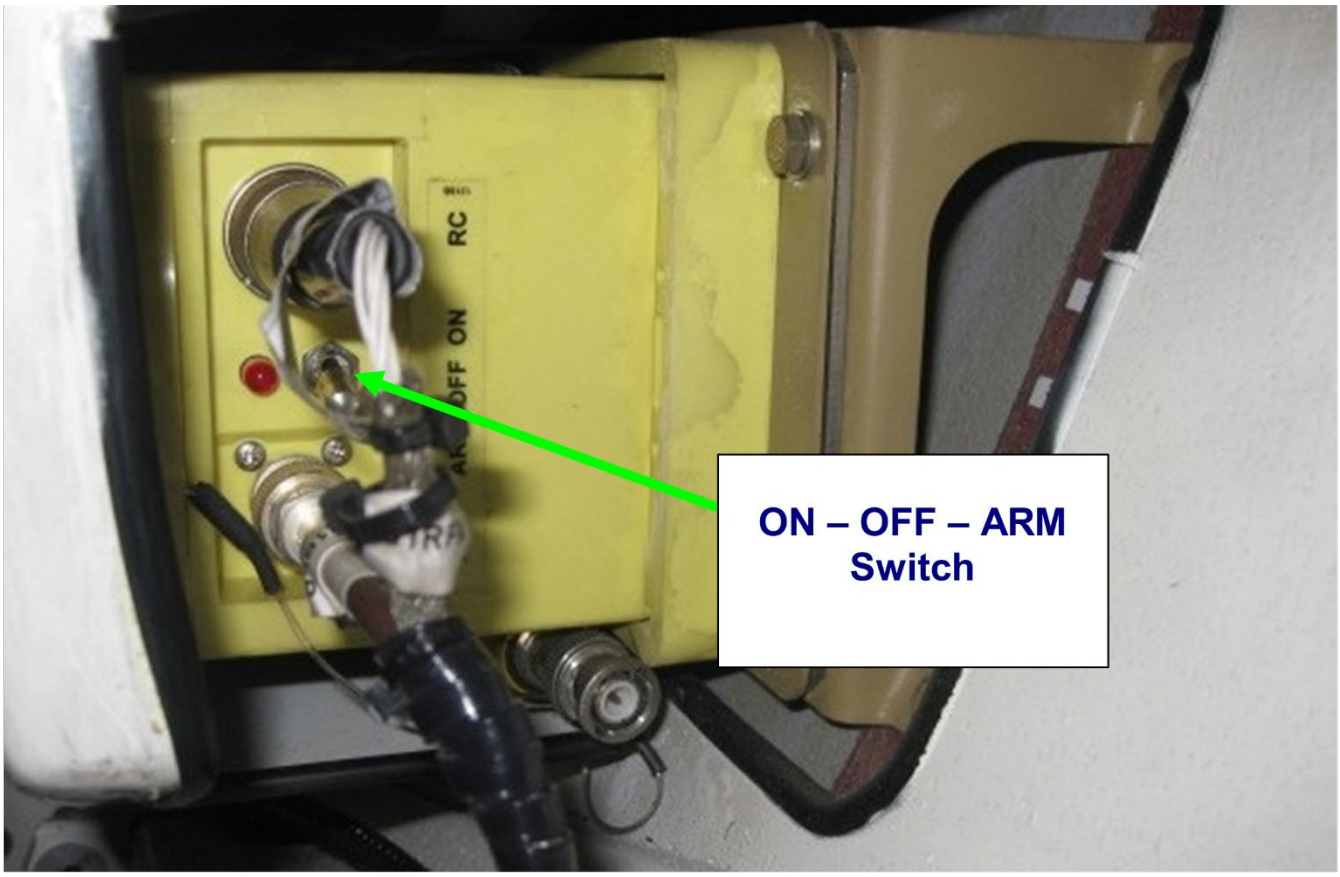
The beacon is no longer transmitting when the green power LED and the amber transmit (XMT) LED are both off.

Arm/ Off Switch

Test/ Reset Switch

Source: OEUK

Figure 170: Kannard S1821502-02 & S1820502-02 - Helicopter Crash Position Indicator



N.B. Rescue crews should not endanger themselves by boarding abandoned helicopters just to find and deactivate locator beacons!

Summary

The Kannard transmits homing signals on both 121.5 MHz (Civil) and 243.0 MHz (Military) distress frequencies together with 406.025 MHz for satellite location.

It is inside the Baggage Bay of the aircraft and is not under normal circumstances removed from there.

Deactivation

The Kannard is off or deactivated when the switch on the front of the unit is set to OFF. The status of the CPI is confirmed as being off by an inactive LED.

Source: OEUK

Figure 181: HR Smith Series 500-12 - Multi Function Locator Beacons
(Contained in helicopter life rafts and also worn by some helicopter pilots)

Summary

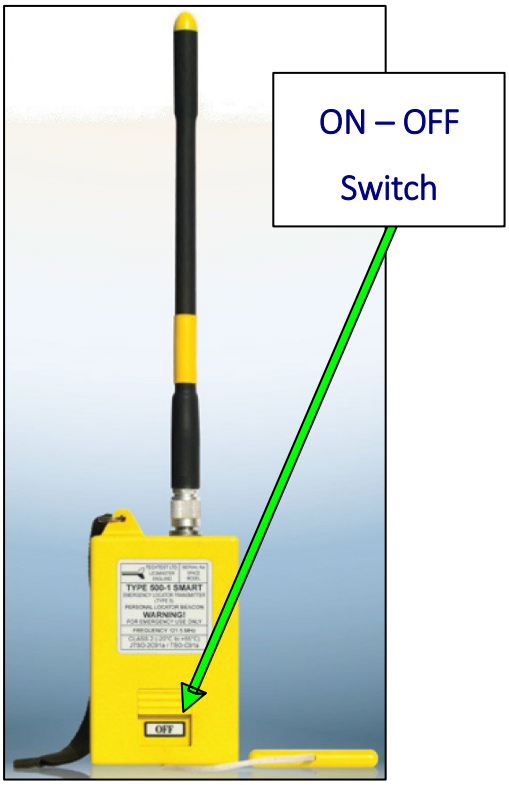
The HR Smith Series 500-12 beacon transmits modulated homing signals on both 121.5MHz (Civil) and 243.0 (Military) distress frequencies together with 406.025 MHz for satellite location.

Deactivation

The HR Smith Series 500-12 beacon is off or deactivated when the sliding switch on the front left-hand side of the unit is set to OFF in the central position. No more lights or sounds should come from the handset.

Source: OEUK

Figure 22: HR Smith Series 500-1 – Personal Locator Beacon (Pilots)



Summary

The HR Smith Series 500-1 beacon transmits modulated homing signals on both 121.5MHz (Civil) and 243.0 (Military) distress frequencies Together with 406.025 MHz for satellite location.

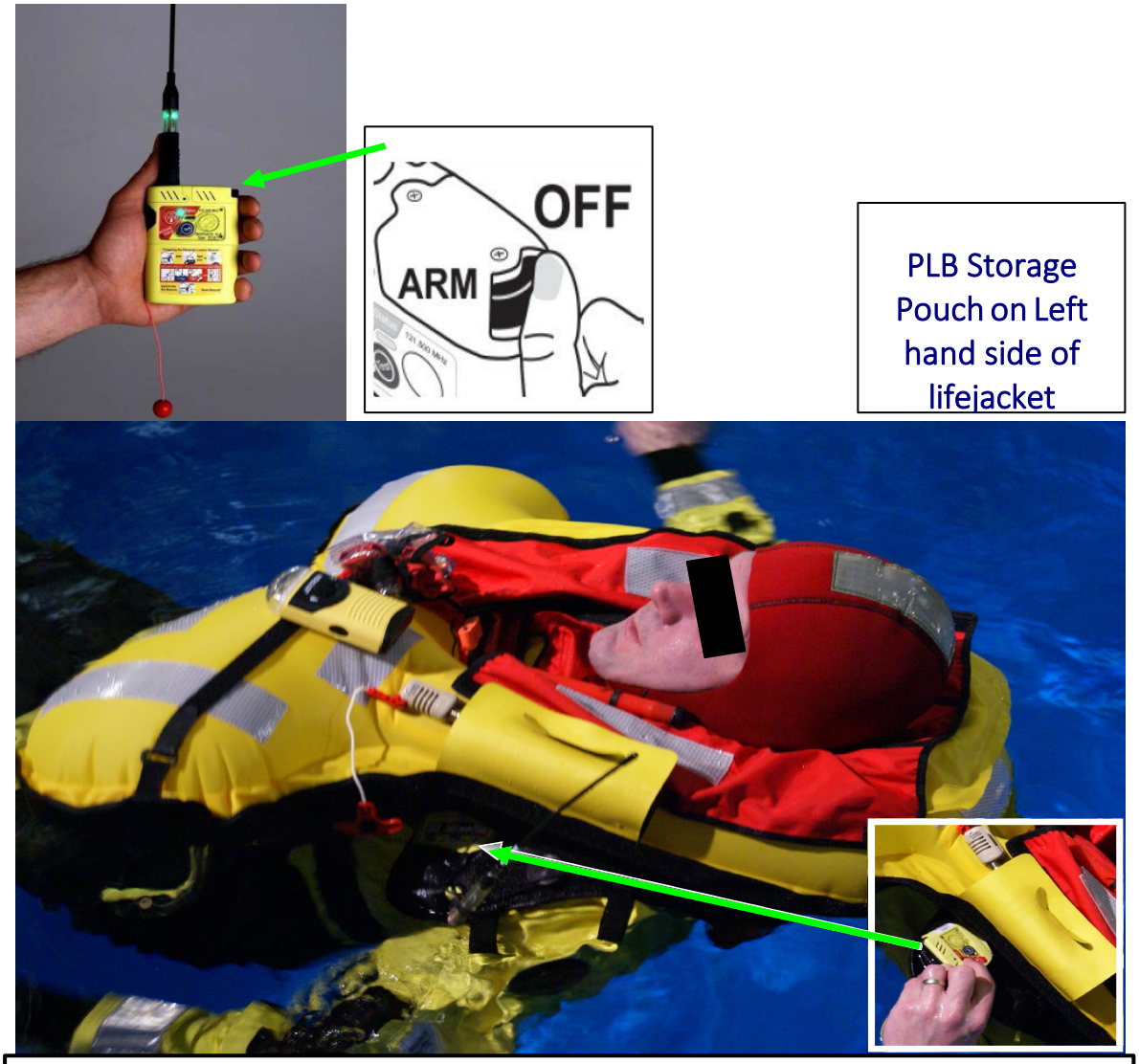
Deactivation

The HR Smith Series 500-1 beacon is off or deactivated when the sliding switch on the front of the unit is set to OFF in the central position.

To check this, the switch can be slid up further to initiate BITE, whereupon two simultaneous audible and light bursts will be emitted, followed by a steady red LED. Releasing the switch will allow it to slide back to its relaxed position. The beacon is now off but ready to transmit again.

Source: OEUK

Figure 23: RHOTHETA RT-B77 HELB - Helicopter Passenger Personal Locator Beacon
(May also be used for Overside Work)



Summary

The RHOTHETA RT-B77 *HELB* beacon transmits homing signals on 121.5MHz (Civil) distress frequency.

Deactivation

The RHOTHETA RT-B77 *HELB* beacon is off or deactivated when the rotary switch on the top right-hand corner of the unit is set to the OFF position. It may be easier to do this once the beacon is removed from its pouch. When successfully deactivated, all visual and audible activities stop.

Source: OEUK

Figure 24: Sea Marshall® AU9-HT Helicopter Passenger Personal Locator Beacon (May also be used for Overside Work)

Summary

The SML TECHNOLOGIES - Wristwatch PLB transmits homing signals o (Civil) distress frequency.

Deactivation

To stop transmitting, manually press and hold both ARMING and CONFI 5 seconds. The WWPLB will acknowledge with a double beep and an LE

Disarm

Step 1. Press the CONFIRM button 6 times. A single beep and LED flash step one.
Step 2. Press the ARMING button once. The WWPLB will acknowledge beep and an LED flash.

Source: OEUK

Figure 195: 500 Series Survival Suit

Source: OEUK

Figure 206: 1000 Series Survival Suit

* Denotes Grab Handle

Source: OEUK

Figure 217: LAPP Jacket

* Denotes Grab Handle

Source: OEUK

FINDINGS FROM SEAMARSHALL (AU9) PLBs AND DIRECTION FINDER TRIALS

1.0 INTRODUCTION

At the end of July 2010, a series of trials were undertaken using the Sea Marshall AU9 Personal Locator Beacon (PLB) and Direction Finder (DF) Sets from the Vroon Offshore Services vessel "VOS DON". The following conclusions have been drawn from the exercises conducted in Aberdeen Bay during the hours of daylight, with good visibility, and a 2-metre swell.

Items **emboldened in red** should be considered when installing DF equipment and using AU9 PLBs.

2.0 FINDINGS AND LIMITATIONS OF DF SETS AND PLBs

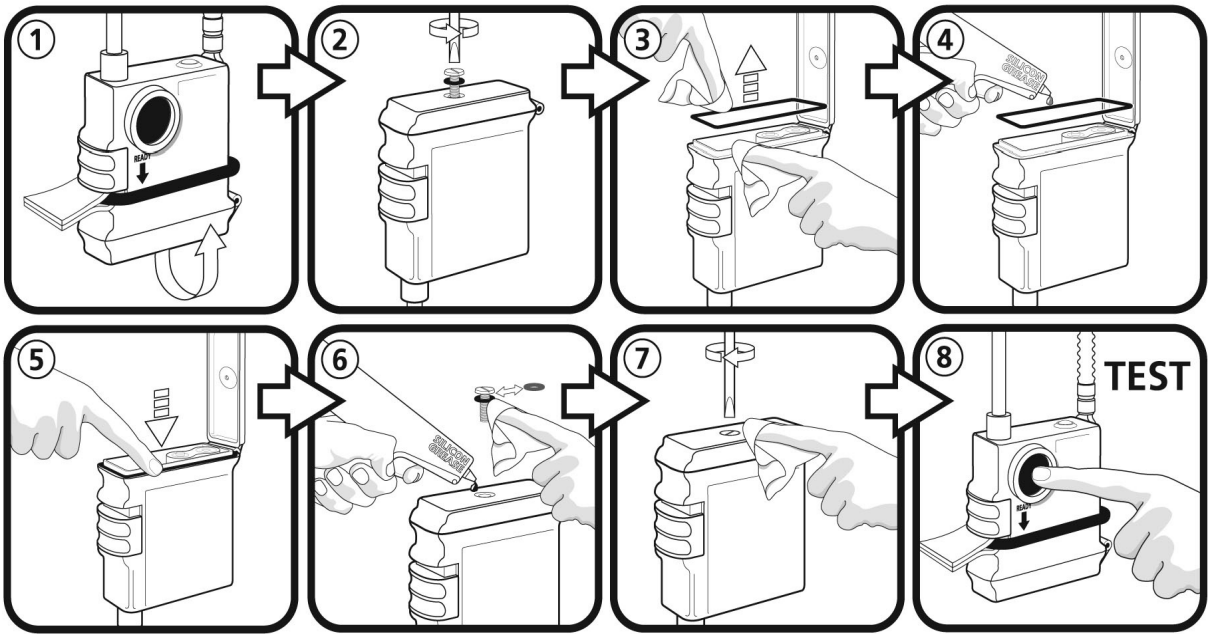
2.1 DIRECTION FINDER SETS

- To work effectively, the Direction Finder (DF) antenna needs a "clear line of sight" to the PLB, thus, DF Antenna should be positioned at the maximum height possible, and with the minimum number of "blind" spots.
- DF sets always lock on to the nearest PLB, and as the craft approaches the PLB, the Received Signal Strength Indicator (RSSI) increases until the craft is within 50 – 150 feet of the PLB (depending upon antenna height), when the RSSI will start to flash intermittently, at which point the casualty was clearly visible.
- The RSSI will continue to flash intermittently, even if the craft moves away from the PLB, until another closer signal is identified, or until the PLB is deactivated.
- The DF set stays locked onto the strongest signal (the nearest PLB), but if that signal is lost then the DF set will lock on to the next closest signal; in the event the original signal is restored, then the DF set will lock on to the original source.
- The DF Equipment on both ERRV and FRC/DC behaves identically, locking on to the same target, when both craft are near each other, provided "line of sight" is not interrupted.
- The audible Man Overboard (MOB) Alarm on the DF set sounds when a signal is received from a PLB, and at the same time a visual warning indicator illuminates. While the alarm is loud enough to be heard in the wheelhouse of the ERRV, it is inaudible aboard the FRC and DC, however, the visual warning indicator is sufficiently bright to attract the coxswain's attention.
- VHF transmission equipment may interfere with the DF equipment if they are positioned in close-by.

2.2 SEAMARSHALL (AU9) PERSONAL LOCATOR BEACON

- In moderate sea states, PLB's at sea level can be detected from circa 4 nautical miles using DF equipment on the Emergency Response and Rescue Vessel (ERRV); the detection range from a Fast Rescue Craft (FRC) and Daughter Craft (DC) is less, owing to the lower antenna height, and the curvature of the earth.
- If the PLB antenna becomes submerged, detection of the casualty using DF equipment is severely curtailed, if not impossible, at any distance greater than close visual contact with the casualty.
- Great care must be taken when changing the PLB batteries to ensure that the watertight integrity of the unit is maintained, otherwise, if it is subsequently submerged in water, failure of the PLB will result. After prolonged use, the PLB's battery may need replacing. Upon reassembling the SeaMarshall AU9 unit, silicon grease must be applied to the seal along the base of the cap to ensure a watertight seal. See below for detailed instructions.

2.3 CHECKING THE WATERPROOFING SEALS AND RE-SEALING THE AU9



Instructions:

1. Turn the unit upside down.
2. Unscrew the base and replace battery.
3. Clean and remove the rubber seal with a dry cloth.
4. Apply silicon grease to the whole rubber seal.
5. Press the rubber seal firmly back into place.
6. Clean the threads of the base screw and washer, apply silicon grease to the threads of the base plate.
7. Clean any excess grease from the unit.
8. Test the unit by pressing the black button; the LEDs in the antenna should flash and the unit should start to beep.

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