

New guide aids rescue

By David Walker

The majority of open water drownings occur as a result of members of the public simply falling into the water. Shock, deep water, currents and steep embankments may all add up to stop the victim helping themselves, therefore intervention from either a member of the public or a trained rescuer is essential if that victim is to survive.

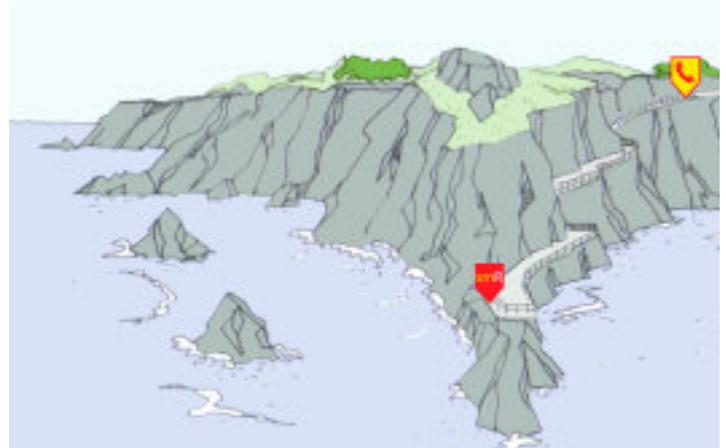
The site manager has a range of options available to manage the risks afforded to the public. The potential solutions are obviously constrained by cost and manpower issues, but equally so by aesthetics, environmental and heritage aspects. Understanding these limitations and being clear about exactly how effective any mix of interventions will be is crucial to balancing the public right and desire to have access to sites with the need to meet the duties imposed upon the landowner.

When considering open

water areas quite often this rationale is not understood or given due thought. The use, location and maintenance of public rescue equipment is one of the RoSPA leisure team's most common questions, and in our opinion of the least well understood area by designers, managers and the public visiting sites.

A common proposed solution to managing the risk at coastal or open water is to place public rescue equipment (PRE) at 50 metre intervals along the body of water. This is often done without any great consideration as to its subsequent usefulness, or how it will be maintained or managed. So working with the RNLI, RLSS, MCA, and NBSC members, a new guide to coastal public rescue equipment was launched in June to go part way address this issue.

The guide, the first of its kind in the UK, will help those responsible for coastal sites in identifying problems and provide some clarity and standard advice



Example of how to position PRE on a sea cliff

on the solutions, and the implications. Historically, there have been no specific standards and little specific advice for the coastal manager to determine and plan their requirements. As a result much of the public rescue equipment found on beaches has probably not been fit for purpose.

The guidance offers clear advice for PRE requirements, risk assessment, location and activity factors are considered along with how PRE best fits into the panoply of risk control measures available. The advice is based upon an 18-month project, researching and testing equipment, standard and existing advice.

More than 100 worldwide items were considered, we omitted equipment which required the rescuer to have special training, or which required the rescuer to enter the water, or in the more exotic cases cannon-like, gas propelled equipment!

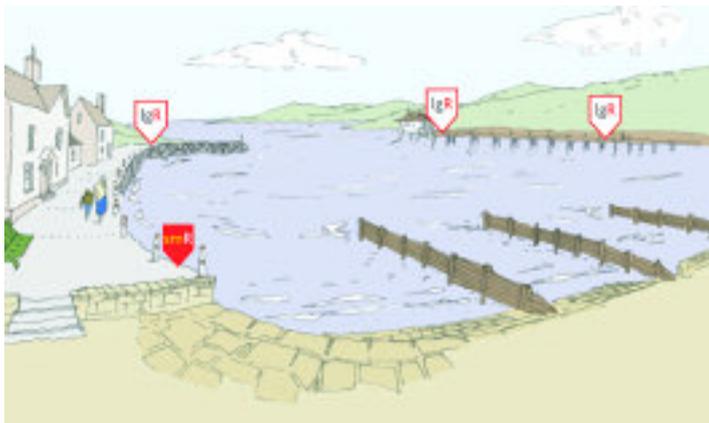
The types of equipment included in the final public trials were: Throw bags, frisbee buoys,

life rings, and throw-able lifejackets. The equipment came from a wide range of manufacturers across the UK and worldwide.

We then devised a method with Cardiff University for testing the effectiveness of PRE in three broad areas; the ease of understanding how to use the kit, the accuracy of the kit in reaching the victim, the ease of re-use or re-throw if the first attempt failed.

Additional research into emergency communications, most suitable PRE locations, maintenance solutions, auditing tools and frequency of checks, PRE signage, user-instruction information and ways to reduce vandalism and theft was also undertaken.

More than 500 public trails, and 100 trained rescuer trials took place to identify the most effective PRE equipment. This was done on a variety of beach and harbour locations, in addition to the closed conditions of a survival tank. The public were given instructions to the effect that they were to use the



How PRE could be positioned in a harbour

Throw bag user instructions



New simple instructions for throw bags and life rings

Life ring user instructions



Water special

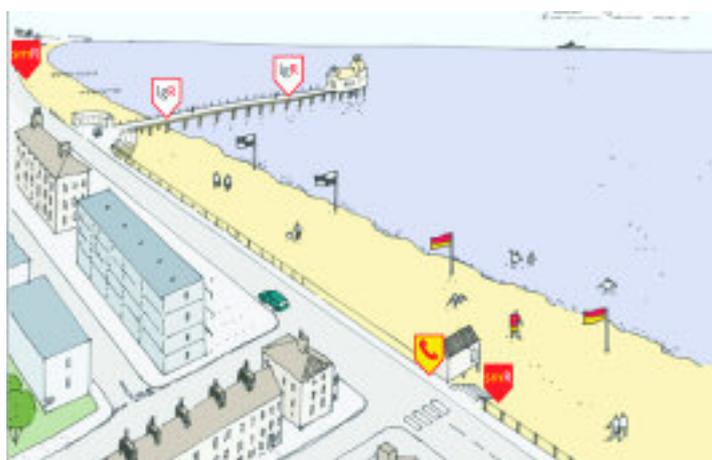


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PRE to rescue the dummy victim (lifeguard) in the water, the only further guidance they received came from instructions on the PRE.

Several aspects did come to light throughout the process; the traditional life ring was well recognised by the members of the public, and used 'well' in most situation, offset by the fact

that the life ring, by design will not perform well over a horizontal distance. The majority of the findings were in line with our expectations, however, the fact that nobody had previously undertaken any substantial form of study on the effectiveness of public use of PRE was in itself surprising.



Example of PRE positioning on the sea front



Above left is an example of poor positioning of PRE signage, and above is good positioning

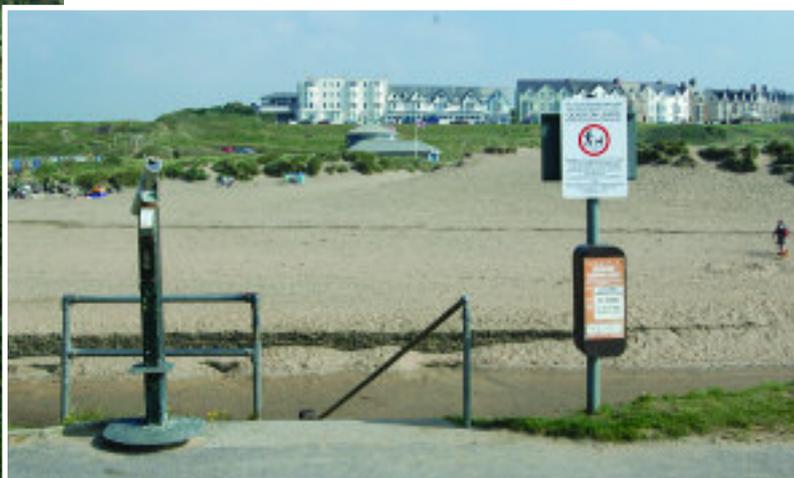
- In particular, we found that;
- The majority of the equipment instructions were considered hard to understand, and could take up to a minute to read before the kit could be used correctly
- Almost nobody (either professional or public) could use a piece of throwing equipment to accurately reach a victim beyond 12-15 metres
- On several occasions the public threw both the line and buoyancy part of the kit, meaning that the victim could not be recovered to shore
- As expected, the traditional life ring performed poorly when used over a horizontal distance. However, they were among the most accurate when dropped, and provided a great deal of support and buoyancy for victims
- Some of the smaller, easier to throw pieces of equipment were more susceptible to wind / poor throwing techniques, while the heavier equipment was almost unusable for some of the public
- In certain types of shallow sloping beaches PRE was not considered to be a suitable risk mitigation measure
- Line lengths beyond 25 metres (plus the drop height) became counter productive in the throw tests. The design

and diameter of rope required to house line beyond this length meant that the line gauge became too small to effectively recover a person, or became so tangled that an effective re-throw became impossible.

- Not all the line used on public rescue equipment floats
- Placement and the rationale for using PRE at coastal locations was in many cases haphazard
- Vandalism and the ability check and maintain PRE greatly undermines its effectiveness.

Some of the throw line models, were either too complex to understand – to enable quick use or the rope did not deploy efficiently, snagging and stopping the flight of the bag/buoyancy part. Correctly positioning equipment at coastal locations is a difficult task, some of the locations we visited would require the rescuer to run up to half a mile in total, carrying quite a heavy life ring, which if the rescuer did make it make in time – would quite often perform very poorly.

On several occasions the public threw the whole of the equipment to the victim, thereby losing any chance of immediate recovery to the side, and to much amusement, on one occasion a member of the public took the equipment and jumped clean into the water to rescue the dummy victim...





PRE being tested by professionals (top and middle) and the public (above)



Equipment trials – positives and negative findings

	Positives	Negatives
 <p>Life rings</p>	<p>Easily identified by public Offers good level of support for victim when in water Accurate when dropped Hard wearing Model with 'handle' moulded in typically performed better</p>	<p>Poor performance over horizontal throws Can be heavy Hard surface could further injure victim Not all models came with line attached, as part of unit</p>
 <p>Throw bags</p>	<p>Good first time performance in horizontal throws More accurate (in tank test) over horizontal distances Can be retrofitted into traditional PRE housing Most are easily repacked / recoiled for second throw Not likely to further injure victim if hit by PRE.</p>	<p>Hard to easily check if rope is still fit for use Particularly susceptible to vandalism Poor instructions on test models Often thrown a whole unit Models with most rope memory kinked and snagged. Some line can be very expensive Little buoyancy support in water</p>
<p>Throw buoys</p>	<p>Often shaped well to aid throwing distance / accuracy Hard wearing</p>	<p>Line snagged in many models No buoyancy support in water Often affected by wind / poor throw techniques.</p>
<p>Frisbee buoys</p>	<p>Easy to understand throwing concept</p>	<p>Quite often snagged Coiled often for right handed throws Often affected by wind / poor throw techniques</p>
<p>'Throwable' lifejackets</p>	<p>Very good throw performance Supported victim in water well Soft surface not likely to injure victim if hit by PRE</p>	<p>Often misused by rescuer Lots of lines and attachments to become tangled in Not designed to be thrown to victim when in water</p>

Key conclusions from the latest research

- PRE that requires the rescuer to enter the water to reach a casualty should not be used
 - PRE should have inherent buoyancy to support an adult casualty in the water
 - PRE should be retrievable once deployed and then reusable
 - The traditional large life ring is less effective when a rescuer is required to throw rather than lower to a casualty
 - Line should float and have a breaking strain of no less than 0.5 tonne. The line should be no longer than 25 metres, plus any additional drop to the water
 - PRE should be of a weight that is not overly affected by wind conditions and should not present a danger to the casualty
 - Minimum instructions should be presented in order to reduce confusion and deployment time
 - PRE is not a suitable control measure for some types of beaches
- These findings and guidance back up RoSPA's long held belief that although important, PRE is the last resort and mean that the victim is already in danger of drowning or sustaining serious injury. So it should always be considered the last stage of an operator's water safety strategy. This guide will help clarify some of the confusion about selection and positioning of PRE.
- The research-working group consisted of the Rospa leisure safety department, RNLI beach safety team, RLSS, MCA, SLSA GB, Universities Cardiff and Portsmouth, Carrick District Council, ENCAMS, Dorset FRS, and assistance from members and the chair of the National Beach Safety Council. More information about the finding and for a copy of the guide can be accessed from the RoSPA leisure safety pages.
- www.rospace.com/waterandleisuresafety/index.htm