

RUTH LEE WATER RESCUE MANIKIN

By Richard Hackwell



INTRODUCTION

The Ruth Lee Water rescue dummy was designed to realistically simulate an unconscious casualty in the water, providing a challenging weight to haul out, behave similarly to an unconscious casualty and be light enough, when dry, to manoeuvre. It is obviously no relation to Rescue Randy or his extremely realistic brethren, but he's not as expensive either. It was developed in the UK by Ruth Lee from collaborative development with recognised water rescue professionals including the Royal National Lifeboat Institute and the Royal Navy. It's in use with a variety of organisations including; military, Coastguard, lifeboat, lifeguard, fire services and other water rescue agencies all around the world. We've tested it in a variety of environments and scenarios both in and out of water. In the water rescue environment; Boat, PWC and in water rescue in still, moving water and various sea conditions (deep water to surf). It was also used for land based training in Rope rescue - Cliff, urban, restricted space and Search and Rescue - stretcher and casualty handling. It



was tested by SAR teams, Swiftwater rescuers, lifeguards, coastguards, Technical rope teams. [ED: We've been testing the water rescue dummy for so long he has his own place at the dinner table]

CONSTRUCTION

There are seven different models in Ruth Lee's range including bareatric, fire retardant and water rescue. All models are made in exactly the same way, with an inner body weighted with aggregate to human proportions, held inside the outer carcass. The aggregate is distributed around the body in weighted packets to represent limbs and body parts and is manufactured in such a way that coalescing of the weight is prevented, allowing the dummy to maintain its form during and after use. The WR manikins use P.V.C open mesh to create the body carcass containing the aggregate innards and non absorbent foam to provide the appropriate buoyancy. All manikins, apart from the FR models, are reinforced using high density polypropylene webbing. The Water Rescue dummy also has a 'wrist' that allows a rescuer to grasp the wrist as they may with a real casualty when in the water. A unique feature of the Water Rescue dummy is the strong plastic strips that run internally along the back from the shoulder area to the knee joint, these strips allow forward flexi-

bility in and out of the water, but do not allow the dummy to bend in half when the patient is lifted from the front - as in a real casualty. This modification also facilitates easier rescues using stretchers or specialised recovery devices. The dummies are supplied with protective overalls made of polyurethane coated polyester, they are reinforced with high-density polypropylene webbing in identified high stress areas. These help protect the dummy and increase the lifespan of the dummy. The overalls are machine washable and replacements are available as spare parts. The overalls have two pockets to the front that enable additional buoyancy or weight to be added to alter the dummy's height position in the water. All water rescue training dummies are supplied complete with Wellington boots with drain holes; the boots greatly protect the legs if the dummy is dragged along over the beach or rocks, and are replaceable



if badly damaged. The adult dummy is 1.8M tall and is 40kg dry. A lifting loop at the back of the shoulders can be used to place or lift the dummy, and for hanging it up to dry. There are two versions:

- The "Man-Overboard" model is supplied with bright orange overalls and SOLAS reflective tape on the head and is designed to be as conspicuous as possible.
- The "Search and Rescue" model is supplied with black overalls and a black mesh hood to cover the head and diminish the SOLAS tape reflectivity; the idea is to make it as inconspicuous as possible to enable the rescue teams to practice their search, as well as their recovery techniques. The SAR dummy has an optional black nylon mesh hood that can be fitted to the head of the dummy to lower it's visibility. See if you can guess which version we had?

IN ACTION
The dummy has been designed to balance weight and buoyancy and provide a realistic attitude when in water. When it enters the water the nylon mesh allows the water to rapidly penetrate the dummy. After a few minutes the legs of the dummy will drop below the surface, resting at an

angle of about 45 degrees to the surface, the head and shoulder will be above the surface. We found that often the dummy had to be dunked and held under the water to facilitate this if you required a quick set up. When retrieving the dummy the water will flood out; the rate at which the

not find this a problem in our training but can quite believe it may be a problem for those with big surf. The rear loop was useful hanging the dummy up to dry and the mesh allowed good drainage and ventilation for drying essential for a quick turn around if moving sites, other materials used on the dummy dried quickly and it's easy to keep clean. The dummy is certainly robust, we've dropped it over 40 metre cliffs, drag it around and over various terrain, folded it in two for transport, it's been washed up on sea defences with breaking waves and pinned in moving water. The overalls have developed a few holes, but no critical damage as yet. Although 40kg is a light load in relation to true rescue loads it does facilitate training in that it is easy for even one person to place when dry and can therefore be manoeuvred

into challenging locations for rescue exercises. Ease of placement means that a number of scenarios can be set up without the need for a team to place the dummy as is the problem with heavier models. If lighter weight dummies are to be used regular training should be done

water drains out is directly related to the speed of the retrieval - the faster the retrieval the more water in the dummy and therefore the heavier the dummy will be. As a guide, a fast 'snatch' retrieval may almost double the dry weight of the dummy ie: 40kg dummy will weigh about 70kg. A more realistic retrieval rate will result in a haul of 50-60 kg. In practice this provides a good dead weight when used in the water. The buoyancy of the dummy can be varied by adding either weights or foam to the Velcro closed pockets on the front of the overall. Although not tested, the manufacturer states that for diver rescue training a few kilos of weight will sink the dummy to the bottom for underwater scenarios. In rough surf it is suggested increasing the buoyancy as large breaking waves may force the dummy a metre or more below the surface. We did

in controlled conditions with real weight casualty dummies to ensure rescuers do not become complacent handling light load. As stated above this model can be fitted with additional weights. The rear loop was useful for trainer placement as it can be used to drag, lower or haul the dummy and can be used to secure the dummy in place if required. The downside of this loop is that often rescuers will grab onto it to recover or manoeuvre the casualty, this is unfortunately not a standard fitment to most people's head so results in an unrealistic rescue or pick up. A pocket to tuck the loop into once placed would alleviate this issue. The dummy has reasonable articulation and can be placed into appropriate poses, packaged in stretchers or put into recovery position. One issue we found was that often trainees failed to identify back and front in difficult conditions. The head is shaped and boots indicate the front but this is not always obvious in rescue scenarios, we often had a well packaged casualty recovered face down in error. A simple front and back may assist or different colouring. The common drawing on a smiley face only exacerbates the issue described next. There is always a problem when training with dummies that casualty care is neglected as the rescuer is disconnected from reality by a lack of realistic features. Often trainees will

not carry out simulated casualty care on dummies and will package in ways which would be detrimental to a real casualty. If the answer is to use a more realistic dummy then cost increases dramatically and perhaps training scenarios would not be as 'robust' for something costing a fair chunk of the annual training budget. Therefore we must build up and maintain a rapport throughout exercise to ensure these skills are practiced even if it means inviting him to pre-course breakfast. One massive advantage of non-featured dummies like the Ruth Lee is if you lose one. Water SAR training always carries the risk of becoming separated from your training dummy longer than planned. If found by members of the public the Ruth Lee will be more quickly identified as a training tool rather than a real casualty and won't necessitate the rescue helicopter putting in some training hours of its own! We used this dummy in a variety of training situations and found it to be a great training tool, it provides a good representation of an unconscious casualty in water and provides a good dummy for land-based training in a variety of scenarios. It was especially good for combined rescue training when casualties were taken from one environment to another using the same casualties with different disciplines. WEIGHT: 40kg & 20kg (youth) www.ruthlee.co.uk

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