MODERN LIFE SAVING, SURVIVAL SWIMMING and WATER SAFETY

lecture demonstration by R. G. Underwood

MODERN LIFE SAVING - to save the life of another as well as
to preserve your own!

In recent years many changes have taken place in all parts of the world. In this country, research work has been carried out by several people, the various new ideas from abroad have been tested, but only those suited to conditions which prevail here have been accepted. Much of this work has been carried out by staff and students of this College. The R.L.S.S. published a NEW Handbook of Instruction in July 1963, and this contains many new ideas, as well as new tests for the well-known awards which come into force by July 1964. The basis for the Bronze Medallion tests is that a holder of this award should be able to deal with the normal type of emergency which occurs in this country. Special attention is drawn to Pp 1-23 of the new RLSS Book, namely the causes and prevention of drowning accidents, rules for water safety etc. Over 1000 deaths per annum are due to drowning accidents; two-thirds of children leaving school cannot swim; too many lives are lost after an effective rescue because people cannot carry out artificial respiration correctly and treat primary shock! There is a strong plea from the Royal College of Surgeons (Report on Accidents 1963) for more learner pools and the training of children from the age of nine in artificial respiration, as part of the educational curriculum.

When teaching life saving, some use may be made of practices on land and also in shallow water before using deep water. However, there is no land drill, and the various methods are known by names, not numbers. There is no association of any one method of rescue with one method of release. For the Bronze Medallion award, the candidate is required to know only one method of release from clutches - wrist, neck, body and a clutch from behind. For higher awards all methods approved and listed by the RLSS in the Handbook must be known, since examiners may ask for any to be shown. The following list contains methods which are not contained in the RLSS Handbook and these are so indicated. The RLSS do not disapprove of these methods, but they are for very competent life-savers only and require much practice, a high degree of physical fitness and the ability to make quick decisions.

REMEMBER - REACH - THROW - WADE - ROW - SWIM & TOW.
SPEED IS VITAL TO SAVE LIFE!

A. Non-Swimming Assists :-

1. Reaching and wading methods, plus use of extensions - poles, clothing etc.
2. Throwing life-belts and life-lines.
3. Using a boat of any kind and land the victim over the stern.
4. Use of canoes and surf boards - specialised training by the Surf Life Saving Association and British Canoe Union Life Guards.

B. RESCUES (also known as tows or carries)

One-Handed - gives a free hand to aid propulsion and hence speed of rescue. Strong swimmers can use a straight arm since their swimming speed will keep the subject's head above water and the leg kick is not impeded. Violent subjects can cause a good swimmer to use a closer contact by bending the arm, as also may weaker rescuers, provided the subject is quiet.

Two-Handed - safer when the subject is very violent; for a weak swimmer and even for a strong swimmer when conditions of water, wind and tide are adverse. It is essential to keep in close contact with the subject and so avoid "shunting" him to and fro as the rescuer kicks.

One-Handed

- a. Chin, Hair or Clothing Carry - straight or bent arm.
- b. Unigrip plus restraints.
- c. Hip Carry - small subjects - side stroke swimming.
- d. Cross-Chest - restraint by grasping your own wrist with free hand (NOT RLSS).
- e. One-Arm Tow - straight or bent arm (NOT RLSS)
- f. Novice assist - subject on back kicking, rescuer swims alongside holding his upper arm (NOT RLSS)
- g. Sub-Aqua - One and Two-Man Tows, supporting the head and upper arm, using flippers (NOT RLSS)

Two-Handed

- a. Head - bent arm hold (straight arms NOT RLSS)
- b. Arm Carry - hold just above elbows.
- c. Chest Carry - hold subject's arms well up near horizontal
- d. Double Shoulder Hook - hold under armpits.
- e. Tired-Swimmer Carry - Breast stroke pupp.

- C. DEFENCE METHODS - NOT RLSS - useful to know in order to prevent a victim from grasping you at all, and yet be able to bring him under control. If he is very violent a strong swimmer may try a closer contact and effect a release, otherwise the RLSS advocate talking him into submission and threatening to leave him. Yet in a strong tide this may sweep you away from safety and hence knowledge of a Defence method might be useful. However there is a real risk of being clutched if the action is not carried out swiftly and correctly.

- a. Straight arm block.
- b. Two-hands & leg block.
- c. Duck-away from the front.
- d. Rear-Pivot & Breakaway.
- e. Front Parry, when rescuer and victim are swept together by a wave or eddy.

D. RELEASES. It should be remembered that only 25% of victims give any trouble at all and of these very few are violent. Yet it is vital to practise all the methods of release just in case!

Essentials for the rescuer are breath control under-water, agility, aggressiveness and emotional control under stress. A quick and powerful reaction, correct grasps for effective leverage are vital. Never 'telegraph' your intentions in advance or the subject will redouble his frantic efforts to cling to you.

- a. Wrist Grip - both wrists
 - i. Break against thumbs.
 - ii. Lift arms and place your legs on his shoulders.
- b. Double grip on one arm
 - i. Force subject down with free hand, push away with leg against his shoulder.
 - ii. Pull subject towards you and fling free arm round his neck (NOT RLSS).
- c. Grip round body and arms
 - i. L hand pulls down shoulder, other hand under chin, knee to abdomen.
 - ii. Hands on sides of chest wall - lift your arms up and thus force subject's arms up.
- d. Grip round the Neck or Front Stranglehold.
 - i. 1 Hand in small of back, other hand over nose and mouth - force backwards.
 - ii. 1 Hand under elbow, other behind shoulder - push up elbow, pull down shoulder.
 - iii. 1 Hand under each elbow and force them upwards.
 - iv. If subject's face is over one shoulder, place one hand against his face with thumb under chin, press head back and other hand forces elbow up.
 - v. If in a loose grasp, twist quickly inside the encircling arms, place one hand on his forehead, and use other hand to lift subject under his seat - roll him off you sideways (NOT RLSS).
- e. Grip round Neck by both Hands
Grasp subject's elbows and force them inwards and upwards.
- f. Back Stranglehold - KEEP YOUR CHIN DOWN TO AVOID BEING THROTTLED!
 - i. 1 Hand on elbow, 1 on locked arms - force elbow up and duck out.
 - ii. Force thumbs back, keep hold of them until you duck out.
 - iii. Submerge grasping subject with both hands behind his head - somersault him.

- g. Rear Waist Hold
 - i. Force thumbs back, keep hold of them, duck out.
 - ii. Submerge, grasp subject behind his head, somersault him over your head.
 - h. Separating two victims locked together. Push down on shoulders of weaker one, place hands under his chin, bringing your leg over against shoulder of other victim and push him away. Use a seconder rescuer to take over the victim left.
 - i. Front hold and Body Scissors (NOT RLSS). Can occur when doing Tired Swimmer Breast stroke push, or when in a group in the water. Subjects panic! SWIM HARD to submerge subject if possible, and also force his head back with one hand. In practice do this gently or you may injure his spine.
- N.B. a. In a Front Hold - turn your face to one side to prevent being suffocated through your mouth and nose being pressed against his chest.
- b. There is no certain release from a Rear Stranglehold and Body Scissors!
- c. Unorthodox methods have no place at all for children and youth.
- E. LANDINGS - followed by a careful let down onto back for immediate artificial respiration, although this can be commenced whilst carrying him in shallow water.
- a. Stirrup lift - tell subject to bend one knee and then lift him by clasped hands.
 - b. Dragging - under armpits - up a shelving beach in shallow water.
 - c. Fireman's Lift.
 - d. Saddle-back Carry.
 - e. Over a bank from deep water - Crossed and Straight arm lifts.
- F. OTHER SKILLS - also taught as part of Survival & Water Safety training.
- a. Treading water - to support a victim until help arrives.
 - b. Surface Diving - to search for and raise a body - go down head or feet first. Use a hard bottom to kick up to surface; if soft or weedy, pull victim clear with hands and then kick up to surface.
 - c. Entering water from a height - step off; straddle jump and tuck jump using forward thrust. Use hands and leg to reduce time under water and so keep victim in sight. A good diver can use a shallow dive up to 10 ft.
 - f. Undressing and making a float of inflated clothing to support victim (NOT RLSS).

G. ARTIFICIAL RESPIRATION - in order of usage.

- i. Expired Air - mouth to nose or mouth - head held right back for good airway.
 - ii. Silvester-Brosch - pad under shoulders of patient on his back will keep his head well back and provide a good airway. Pressure can be varied for size and age.
 - iii. Holger Nielson - patient on his front. Used when injuries present and when Expired Air cannot be used for any reason. Pressure varied for age and size.
- N.B. Treatment known as external cardiac massage can be used with methods i. & ii. to restore heart action, but not with method iii.

References, other than RLSS Handbook of Instruction, July 1963
 4s. 6d. plus postage. Silvia C.E. Life Saving and Water Safety - American YMCA - £2. 10s. approx. American Red Cross - Life Saving & Water Safety. Canadian & Australian RLSS Books. Surf Life Saving Handbook; British Sub-Aqua Diving Manual.

SURVIVAL SWIMMING & WATER SAFETY - to save your own life, assuming you are not required, or are not competent enough to save others in a water emergency, other than to apply artificial respiration.

1. Enjoyable, recreative, stimulating and a worthwhile aspect of swimming.
 2. People of varying ability and almost any age can take part.
 3. It should be presented as a challenge that is as realistic as possible. This will call for a reasonable use of imagination when using a swimming bath.
 4. Emphasis should be placed on performance and endurance, which are assessed in an objective manner by a series of tests, based on distance, time, repetitions etc.
 5. A.S.A. Survival Swimming Awards may be gained, as also the R.L.S.S. Water Safety Awards, and these form a basis for vital standards of water safety for all aquatic activities e.g. sailing, canoeing, sub-aqua etc.
 6. The basic skills involved are:-
- A. ENTERING WATER - from varying heights into varying depths.
 - i. From heights over 12 ft. - JUMP by stepping off with one foot, keeping the body straight, assuming there is a good depth of water. This technique avoids any tendency to fall forwards or backwards in flight, with consequent injury on hitting the water. Hold the nose if water tends to rush up it on entry.

ii. From heights up to 12 ft. :-

- a. Straddle jump - from a running take-off or by a one foot lunge from a ledge into at least 7ft. of water, or less if the height is lower. Lean well out with the legs spread forward and backward - NOT ASTRIDE. Lean slightly forward, and as the water comes up to waist level, close the legs forcibly and use legs and arms to drive the body to the surface.
- b. Tuck or Bomb jump - the safest into shallow water - thrust well out, tuck up, lean slightly back for shallow water, and forward for deep water. Hit the surface with the seat, keep the heels well up and use the hands only in shallow water to drive the body to the surface.
- c. Running Shallow Dive - only for those with diving experience.

B. EMERGENCY FAST SWIM - this should follow an entry when there is immediate danger from which you wish to get away rapidly e.g. explosion, fire etc. In clothes, use any stroke which gives you most speed, keeping your head up to see where you are going and to avoid any floating debris or other danger ahead of you. THE MINIMUM TIME UNDER WATER ON ENTRY AND MAXIMUM SWIMMING SPEED WILL GET YOU OUT OF A DANGER AREA. For Life Saving similar entries will allow you to watch your subject and reach him speedily.

C. TREADING WATER - whilst waiting for assistance to arrive; to take a breather whilst you take stock of the situation and to support a subject who is injured etc. Use either breast or crawl type leg action with hand sculling action; keep the head back; float in a near horizontal position if you are buoyant enough. Avoid swimming about as this wastes energy and moves you from a known position if help is on the way. Practise treading water under handicaps i.e. injured limbs:- One hand and two legs; legs only, hands clasped behind the back; arms only, feet crossed; one arm and one leg only - holding the other leg with the other hand on the same side of the body, and also on the opposite sides of the body.

D. UNDRESSING IN THE WATER - there is no set order to do this, nor need you remain above the surface to do so. Remove heavy clothing first, retain trousers, slacks, shirts and blouses with long sleeves, skirt, nightdress or pyjamas, since all these items of clothing, if made of cotton, nylon or other close-weave material, will retain air when wet and can be inflated as a floating aid. BEWARE of removing any such clothing over the head as this can cause suffocation - rip shirts etc., down the front unless they unbutton like a jacket, or stretch a garment to remove it over the thigh and legs.

- E. INFLATION OF CLOTHING. Tie a simple knot in the ends of trousers legs, sleeves or the top or bottom of a nightdress or dress. Alternatively you can tie the ends of legs and sleeves together to form a life-belt or collar. Air can be forced into the garment by:-
- Flinging it through the air, keeping the open end wide with the hands, from behind or side of the head, and so trapping air as you force it down on to the surface.
 - Splashing air bubbles into the open end with one hand cupped and plunging it down on to the surface and upwards into the open end of the garment.
 - Submerging and blowing air upwards into the open end of the garment.
 - Blowing air through the cells of the material by holding a small area tightly stretched against your mouth.

The last two methods are better used for re-inflating the garment when some of the initial air has escaped through the cells. PROVIDED THAT YOU KEEP THE OPEN END BENEATH THE WATER THEN AIR WILL STAY IN IT FOR UP TO 30 Minutes depending on the material. Avoid pulling the garment down too much into the water, since water pressure will then force air out which will be seen by the stream of bubbles from the material cells.

- F. USE OF INFLATED CLOTHING - to keep you afloat and save energy, or to swim with less energy output. Use it to support heavy legs by gripping it between the knees, or sliding it over the thighs as a life-belt, or round the neck as a collar. It may be held in the hands or used like water-wings under the armpits. Women can inflate a skirt kept on, by flapping the bottom end over the surface of the water and so trapping an air bubble for support. A shirt with sleeves knotted can be buttoned round the neck with the front of it against the chest and the back uppermost to the surface. Then flap the lower end over the surface to trap air inside and tuck the ends into the top of pants or trousers etc.
- When you have used clothing for a 'rest', deflate it and tie it round your waist using the legs or sleeves, for use again later if necessary. NEVER DISCARD IT!

- G. DISTANCE SWIMMING. Conserve energy in every way possible, by using strokes which do not tire you unduly e.g. breast, side, back, but you may use crawl or trudgen if you are a powerful swimmer. Remember that arm recovery over the water means extra weight which tends to sink you, unless you are a very strong swimmer.

- H. SURFACE DIVING. Used to avoid obstacles, small oil patches etc.
- a. The normal head-first dive, lifting the legs together above the water so that their weight in air carries you under.
 - b. Feet first by shooting the hands vertically upwards, kicking with the legs and so lifting the upper part of the body above water, causing its weight to submerge you. When you have dropped to the required depth - swim forward head first.
 - c. Feet first by treading water first with hands by the sides, palms turned outwards. Kick upwards and as you sink, move the hands upwards to assist the body to sink. Use plastic air-filled hoops, or wooden hoops, attached to weights by ropes, so that the top edge of the hoop is about 3ft. below the water surface. Swim through these head first, following a surface dive, and also you can use two ropes about 4 yards apart.
- I. UNDER-WATER SWIMMING. Use this with caution and only for short distances, except in dire need to go further. Never hyper-ventilate the lungs first by taking several deep breaths before submerging since this can produce a 'black-out' effect, due to the removal of Carbon Dioxide in the blood stream. Let air escape slowly as you swim. Limit all tests to a maximum of 7 yards. Use the full sweep round of the arms as in breast stroke, with leg action. Some people find that dogpaddle arm action with crawl or breast leg action is more effective.
- J. DEALING WITH OIL. Small patches you can dive under, but larger patches may cause you to rise for a breath. To do this come up vertically, with the hands above the head so as to splash the water surface first. This will break up the oil and allow you to snatch a breath, by rising with the head well back. Descend again quickly. Remember that thick oil may choke you, and burning oil will cause severe burns to any exposed parts of the body. The technique described needs much practice to perfect it, and its usage depends on the area of oil, its thickness and whether it is on fire or not.
- K. SWIMMING WITH A HANDICAP - useful to practise in case you should be a victim of some kind which affects the use of one or both arms and legs.

L. CLIMBING OUT FROM DEEP WATER. Hold on to the top of the bank with your hands; raise and lower the body once or twice, then kick with the legs as you pull yourself up with your hands. "Press-ups" will strengthen your arms if they are weak! Also you may practise climbing out of the water by means of a rope or rope ladder suspended from a diving board or roof support. Climb up the edge of the rope ladde to reduce the sway.

TESTS. Apart from the ASA and RLSS awards mentioned, you can devise other tests based on a points system, whereby maximum points are awarded for completing the tests correctly, or points are deducted for failure to do any part of a test; being under water too long after an entry etc. The results of points awarded can be graphed and stribution reached to provide a grading scale e.g. A+ to E. Time limits are used to suggest adverse conditions due to rough water, tides and currents, which would use up energy at a faster rate, than swimming steadily in the calm water of a swimming bath.

REFERENCES "SURVIVAL SWIMMING" - A.S.A. early 1964 -
Educn Productns Ltd 3s. 6d.
"Swimming Instruction" - A.S.A. 8s. 6d. - contains
a small section on it.
"Handbook of Instruction" - R.L.S.S. 1963 - 4s.6d. -
for artificial respiration methods, surface
diving etc. - but not inflation of clothing.
"Life Saving & Water Safety" - Chas. E. Silvia -
American YMCA Book - can be obtained from the
P.E.A. Bookshop, 10 Nottingham Place, London,
W.1. or T. Sketchley, 93 Ashby Road,
Loughborough (Bookseller). This is a most
valuable book, as also the one by the American
Red Cross. Cost of each is about £2.

N.B. Other Aids to Flotation - bucket, pillow case, used to trap air and then held in the hands, also wellington boots. A spare car wheel with tyre, can be used to keep 6 people afloat. If you are in a car sinking in water - open the windows to equalise the pressure so that a door can be opened to escape.