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I.

INTRODUCTION

This manual is designed to enable a skilled sailor to teach the use of the Lifesling. The Sailing Foundation, which has developed this system, has found that a lecture format followed by on-the-water instruction is the most effective. As of February 1, 1985, the Foundation has accomplished 120 iterations in wind conditions up to 35 knots. It has proven nearly always successful, and, as time has progressed, the teaching method has improved sufficiently to deal with most of the problems that students face.

The method focuses on the most difficult man overboard situation, namely that of a two person crew with one overboard which necessitates a single-handed pickup in fresh wind and sea conditions exacerbated by cold water commonly present in northern waters. It will probably not be feasible for a beginning sailor; nor will any method. A minimum skill of single-handed boat handling is required. The method is also effective when used by more than the single-handed crew; it has been used efficiently in heavy air racing conditions and has been tested satisfactorily on power boats.

The method has been proven empirically: it is the only known method of single-handed recovery which has actually been tested with students with a large variety of boats and wind conditions.

An instructor should thoroughly familiarize himself with the history of the Lifesling development, in detail, including the case histories, and the other recommended methods commonly found in published material. Most of those methods have not been tested, few work, and some may be dangerous. Nevertheless your students will come to the lecture with preconceived ideas, perhaps derived from those sources, and you must be able to deal with their questions. Many of your students will not realize just how difficult man overboard recover really is; they will need to avoid improvisation and to follow each step in the process in the correct sequence. To communicate effectively you will need to repeat the important points, perhaps several times. You will also need to deal with typical problems which frequently arise.

After completion of the on-the-water training, you will find your students to be converts and, perhaps, missionaries.

II.

THE EQUIPMENT

The Lifesling is a horse collar device having 20 pounds floatation, measuring 70 inches end to end and containing a lifting strap with “d” rings on each end.

The trailing line connecting the Lifesling to the boat is polypropylene and will float. It is high visibility red or yellow and should be approximately three times the length of the boat. The standard line length is 150 feet.

The line is stowed in a stuff bag so that on deployment it will come out without fouling. A container bag is available to snap on to the stern pulpit.

The lifting device is block and tackle of three (or four parts). A three-part tackle should have a minimum fall of 65 feet to attain the ten-foot minimum distance from the deck and still reach the deck. To avoid confusion it is recommended that the top block be painted red.

The Lifesling and its method are the subject of a pending patent application in the United States; there is a trademark application in both the United States and United Kingdom. It may be purchased from the following manufacturers or their dealers.

Washington and Alaska

Schattauer Sails, Inc.
6010 Seaview Avenue Northwest
Seattle, WA 98107
Telephone: (206) 783-2400

United States

West Marine
500 Westridge Drive
Watsonville, CA 95076
Telephone: (831) 728-2700

United Kingdom

B & H Sails and Covers Ltd.
Cranbourne Industrial Estate
Cranbourne Road
Gosport, Hampshire, England PO12 1RW
Telephone: Gosport (0705) 589431 1582972

The Sailing Foundation is a nonprofit educational foundation dedicated to the advancement of sailing in the Pacific Northwest. It was founded in 1971 and has conducted a wide variety of educational programs.

III.

THE CLINIC: HOW TO TEACH THE METHOD

A. FORMAT.

The clinic format arrived at as the best teaching tool takes three parts: (1) lecture and slides; (2) manually rigging each boat; and (3) on-the-water drills.

1. Crew Pickups.

In some cases a single-handed pickup is not appropriate. In those cases which will be discussed in “Problem Areas,” a double-handed or crewed pickup is recommended.

Do not get bogged down. You will be faced with people who want to debate small details, discuss the rigging of individual boats, relate their own methods, etc. It is important not to get bogged down in this detail. A response indicating that all boats rig differently and each boat owner must adapt the gear to his own boat is usually good. Also remember that rigging questions are best handled during the boat rigging portion of the clinic.

With regard to questions such as “wouldn’t it be better if...” we find the best response to be short. If you have historical data available for your answer, use it. If the question is theoretical, try to deal with it as quickly as possible and get back to the point. Beware of “armchair experts” taking control and confusing your students. The important thing is to get the essential points down and get them out on the boats. Many questions have self-evident answers seen quickly during the drill process.

2. The Lecture.

The lecture begins with any one of the several “case histories” which illustrate the need for the Lifesling method. It is also necessary to get their attention and convince them that it is a serious subject. The text of the lecture follows, but several points are important to stress.

a. Repetition.

It is necessary to make at least four repetitions of the procedure. Once in the beginning of the lecture in brief, once when using the gear as a prop, once using diagrams, and once during the slide show. Students will not be able to grasp all you tell them without repetition.

b. Clarity.

It is essential that your lecture be well organized and that all points are simply and clearly stated. Make sure your people understand, but do not allow questions until after the slide show. Questions during your lecture will only cause confusion.

c. Common Questions.

There are several questions that are commonly asked that you should be prepared for. Studying the history and research will give you some insight on how to respond. One example is the person (and there is always one) who will insist that the boarding ladder is the solution. In examining the case histories, you will find at least three documented cases of deaths involving use of a boarding ladder. There are also statistics illustrating the weakness and loss of strength occurring immediately following immersion and preventing use of the ladder.

There are many typical questions and new ones at each clinic. Familiarize yourself with the supporting data and keep it available during your first few lectures.

3. Length of Lecture.

We think that an hour and a half works best. This will allow you about 45 minutes for the lecture and about one half hour for slides with 15 minutes for questions. The forthcoming video should become part of the lecture process.

B. TEXT OF THE LECTURE.

You will each develop your own style, but be sure to cover the essential points. The following is a standard lecture, and a student slide show commentary. We have found this format to be effective and recommend that you follow it closely.

THE LECTURE

You are about to learn the only tested and proven method for a successful single-handed pickup of a man overboard. The method also works very well in picking up someone with a full crew. However, this method focuses on the most extreme case and that is a two-person crew with one over the side in fresh air conditions.

To coin an old saw, until the Sailing Foundation commenced its research program a lot of people had talked about the man overboard situation, but no one had ever done anything about it. It presents a very serious situation which I would like to illustrate by the discussion of a recent case history which illustrates the problems presented in classical style. The incident occurred off Monterey, California, in November 1983. A skipper on a typical cruising sailboat slipped over the side while he was pulling down the jib. The wind was blowing at approximately 20 knots and seas running four feet. He was wearing both a harness and a PFD. Unfortunately, his harness tether line was long and, although still connected to the boat, he was completely over the side and in the water. The crew stopped the boat and attempted to lift him aboard by grasping the shoulder portion of his harness. Unfortunately, they simply pulled the harness over his head and he was disconnected from the boat. They got a boarding ladder over the side, but he was unable to climb up the ladder. His feet were slipping off the lower rungs, and finally fell back into the water exhausted. They then threw him a line, started the engine, and started to back down toward him. Unfortunately, as often happens when maneuvering under power in these situations, the line got around the propeller and the boat was disabled. The skipper drifted away and was recovered by the Coast Guard approximately two hours later. He never recovered consciousness.

(You should now have the audience's attention that this is a serious problem and that a solution is not easy.)

There are three critical problems presented by the man overboard. The first is maintaining visibility. It only takes a wave this high (illustrate using your hands a distance of about one foot vertically) to hide a man's head in the water. Thus, if you cannot maintain visual contact, the situation will be hopeless from the outset. The second is maneuvering to pick him up, making contact with him, and maintaining that contact. Boat maneuvering is very difficult in heavy going, particularly in attempting to come alongside, and immediately stop to pick someone up. When you do make contact, we have found through testing that even a boat under bare poles will start drifting between one and three knots away from the victim. Therefore, you

must maintain contact with him at all times. The third problem is one of lifting. A heavy man with water soaked clothing may easily weigh as much 250 pounds, and it is going to take a very large effort to get him back aboard. He will not be of much assistance and, even if you have a gorilla left aboard, you are going to need some sort of mechanical advantage to recover him.

The Sailing Foundation rescue system addresses these problems in this manner. The first thing you do when someone goes over the side is stop the boat by driving the boat head to wind. This will keep you near the victim and maintain that critical visibility. The second step is to deploy a Lifesling on a trailing line which essentially makes your boat 150 feet long and by encircling you will make contact with him. You maintain that contact by pulling him in the sling to the boat. The third problem is to use the Lifesling as a lifting device together with a block and tackle and a winch to lift him back aboard. (This is the first summary of the procedure. As you will note, you have only covered the bare essentials, but it is the first repetition in a series necessary to drive all the points home.)

The equipment that you use consists of the Lifesling, the trailing line and stuff bag, and the block and tackle. First the Lifesling. (Pick up the Lifesling and hold it up to the audience.) This device is very similar to a standard horse collar used by the Coast Guard and the military to pick people out of the water from helicopters or large vessels. However, it has been revised to include 20 pounds of floatation which is equivalent to a type IV buoyancy device. It has a lifting strap and two “d” rings. It is connected to the boat by means of a trailing polypropylene line. The line is designed to have high visibility and to float. The standard length is 150 feet and this is the length that you will probably be using today although sometimes it varies depending upon the length of the boat. One end of this trailing line is affixed to the Lifesling with a bowline, and the other end of the trailing line is made fast to your boat permanently at some secure point. The trailing line is inserted in the stuff bag so that it will not foul when paying out. You will note that both ends of the trailing line are made fast by means of bowlines and the knots are taped or otherwise secured to keep them from coming undone. The length of the bowline on the Lifesling is important because you want to have the knot on that bowline at the level of your boat rail and the victim is alongside and ready to be pulled out. This is so because you will be affixing your block and tackle to the inside of that bowline so the size of it will have to be varied with your freeboard. Once you have deployed the Lifesling to the victim, he can use it as a floatation device and, by the time you have him alongside, he will want to get into it like this (put the Lifesling over your head and show how it fits under your arms) so

that he is ready to be lifted out. (Then hold up the bowline to show where the lifting attachment is to be connected.)

Once you have your victim alongside, then you get out the third piece of gear which is this block and tackle. (Now hold up the block and tackle to audience.) With our modern day racing sailboats we have become unaccustomed to using what was once a very standard piece of gear on every sailboat or sailing vessel. This is a three-part tackle with a snap hackle on each end, and this pulling part here is what we call the tackle fall. (Show them the tackle fall.) It will be important in this procedure to have the right end of the tackle up; therefore this once is colored red. Everyone should know which end is up. When the tackle is used, the lower end is first hooked into the bowline on the sling; then you will take off the main halyard from the headboard of your main sail and haul this tackle up in the air ten feet or more from the main deck, and then you will make your main halyard fast. Now you have mechanical advantage to lift someone aboard and you will probably need a winch back-up on the tackle fall. Now we are ready to go through the details of the procedure. (Approach a large blackboard or writing surface so that you can diagram the procedure.)

Man overboard. (Draw and x in the center of the blackboard.) First thing you do is go head to wind. (Draw wind direction in a vertical direction down.) To maintain visibility and steer near this victim, you have to stop the boat as soon as possible. It does not make any difference whether you are reaching, running, or beating; you simply must stop the boat. A lot of the standard methodology talk about taking bearings, reciprocal courses, and all that sort of thing, but our method requires you to first stop the boat. This is absolutely essential. Even if you take a broach. Even though a broach is unpleasant, it is far more important to stay close to this person. You stop the boat by driving right dead into the wind and letting your sails luff. Now and only now you leave the wheel or tiller and you go aft, pull the Lifesling out of the bag, and deploy it. The trailing line will now run out of the stuff bag automatically. You return to the helm. Now what we recommend is that you start circling the victim in the water. (Draw this.) It is going to be a lot easier if you let the bow of the boat fall off from the eye of the wind so that the jib is aback. (Draw this.) This is not absolutely essential, but it will make your maneuvering much easier and will allow you to circle the victim in the water without touching your jib sheet. If you are going to have difficulty in gybing because your main is too far out, the time to get your main in is when you have gone head to wind. Now start your circling. (Draw this.) As you do so the trailing line and sling will follow your stern in a circular fashion and either the line or

the sling will come in contact with the victim somewhere between the first and third pass. You will find that this portion of the drill is remarkably easy. Keep your eye on that sling and do not sail over it or you are going to sail over the trailing line. Keep your eye also on the victim and make sure you do not run the victim down. If you have any difficulty in falling down wind too fast with your jib aback, you had better release the jib.

Now you have made contact between the trailing line and the victim. (Draw this.) Drive your boat head to wind. (Indicating.) You are really stuffing your boat head to wind again to stop it and this is very important. The only danger in this part of the procedure is the possibility of towing your victim, and that occurs if you take off at speed after he has the sling. It will not occur right away because that sling is inside the circle and will move a lot slower than the boat. You must be careful to drive the boat head to wind as soon as your victim has hold of it. If you start taking off at speed, he is not going to be able to hang on it because you are going to drive his head under water. Okay. We have driven the boat head to wind and stopped the boat, the next important thing to do is get your sails down. You do this before you pull him alongside because again it is important to stabilize the boat. You drop your jib first. If you have hanks on the jib, you may need to tie down the head of the sail because hanked sails sometimes will climb back up and you do not want your boat to take off. Remember it is very important to slow down and stop your boat after you have made contact. After the jib is down you drop the main. Neatness here is not a consideration. Now you have both sails down and the boat is essentially immobilized. It may be drifting between one and three knots so you want to get him alongside. You do this hand over hand or with a winch and pull him in alongside. We recommend you pull him alongside on the windward side of the boat because even though that is slightly less comfortable for him than the leeward side you will have less clutter there. In other words, you will not have your main sail flogging over the side and the boom will be out of the way. You pull your victim firmly up to the boat. You take a very good strain and make him fast. You can use a winch for this purpose.

This is a very important part of the procedure. (Go to another section of the blackboard and draw the victim being hauled up out of the water and made fast to the boat. Draw a profile of the boat so that you can show on this diagram how the block and tackle is going to be rigged.) Now you have actually saved your victim because he is going to last a long time before hypothermia has any effect whatsoever. The real danger in these overboard situations is sudden drowning. He is not going to drown now because you have got him tied off

to the boat, and much of his body is out of the water so you have an absolute minimum of an hour before you have to concern yourself with loss of body heat. Now I am not recommending that you go below and make yourself a sandwich or open a beer, but the crisis is over and you are simply left with the mechanical procedure of getting your victim over the rail. However, this may not be simple for those of you that have not worked with block and tackle recently.

The first thing you want to do is avoid two blocking your tackle before you get your victim on board. Two blocking means you have pulled both bottom and top block together and therefore you have nothing left to pull with so you go through the procedure like this. The victim is tied off as we have discussed before and he is tied off on the windward rail. Get out your block and tackle and you hook it into the bowline just below the knot, being sure to hook it up outside of the lifelines. (Indicating.) The next thing you do is detach your main halyard from the head of the main sail and you hook your main halyard from the head of the main sail and you hook the top end of the block—remember red is up—to the shackle on your main halyard. Now you pull this top block a minimum of ten feet off the deck. (Indicating on blackboard tackle height.) The ten feet is essential because you have to get his body over your lifelines. (Indicating.) So with the top block now well up in the air you make the main halyard fast. Some people have the strength to just manually pull someone aboard with a three part block and tackle. However, that does not go for most people and we have found that winches alone are just simply not adequate to haul your victim aboard either. So what we recommend is that you use your tackle in combination with the winch. The best way to do this is take your tackle fall (indicating) to a jib car fair lead and then to the normal cockpit winch used for that fair lead. (Indicating.) This is important because if you use a wrong lead you may get an override where your victim is half out of the water and you are going to have to release him at some point and start over again. An override is avoided when you have your winch axis a minimum of ten degrees angled from the horizontal of the lead to the fair lead. (Draw diagram.) If you use the normal car to the usual cockpit winch, you are going to avoid this problem. Now it is just a matter of cranking aboard with the use of the tackle.

THE SLIDE SHOW

<u>Slide Number</u>	<u>Narrative/Description</u>
1	“Small Craft” warnings and a man overboard—a dangerous and often fatal combination.
2	He’s in the water—how are you going to retrieve him?
3	A further common complication—pop is overboard; mom is alone on the boat.
4	Have you ever tried lifting someone aboard, even from a small boat?
5	It’s frequently an impossible task—200+ pound of water-soaked man...
6	Starting about four years ago, the Sailing Foundation began studying this problem using a dummy in Puget Sound and a crude lifting sling.
7	We progressed to live volunteer victims and found that convincing the person to let go of his horsehoe floatation and get into a lifting sling was difficult, if not impossible.
8	We started experimenting with a flexible Coast Guard helicopter horsecollar attached to the boat with a long floating trailing line. From this came the Lifesling after much testing to determine proper floatation, size, handling, characteristics, etc.
9	Here is a production model Lifesling showing the stuffbag, floating line, and bridle made up. The bowline should be tied at the vessel’s rail height with the Lifesling in the water to give the proper lifting-point for that particular boat.

Slide Number**Narrative/Description**

10	Here is the Lifesling in a bracket for rapid deployment, trailing line secured to boat.
11	Here it is in our new deployment bag containing Lifesling and line ready for use—just open the bag and throw the Lifesling.
12	The Lifesling is now standard equipment on the fleet of ocean racing and cruising boats at the United States Naval Academy.
13	The pick-up maneuver. Stop the boat. Deploy the Lifesling. Sail the boat in circles around the man overboard—a typical “water ski” pick-up.
14	The Lifesling tows at the end of the trailing line, and...
15	It is acquired by the man overboard who puts it under his arms while the person on board stops the boat and drops the sails.
16	The man overboard is then pulled to the boat, a tackle is rigged, and he is hoisted aboard using the mechanical advantage of the tackle and a winch in most instances.
17	Let’s look at an actual two-person rescue sequence—“Man Overboard.”
18	The boat is put head to wind, the Lifesling is deployed.
19	The boat is sailed in circles until the man overboard acquires the Lifesling.
20	The boat is then immediately stopped by heading up and dropped the sails.

Slide Number**Narrative/Description**

21	The man overboard is pulled to the boat using a cockpit winch, if convenient.
22	They are then pulled up <u>as high as possible</u> —this is important—and they are tied off.
23	After being pulled up and tied off, the person is safe and a tackle can then be rigged by the helmsman.
24	Here is the top block—we recommend this be marked with red—of a three-part tackle being attached to the main halyard.
25	How the bottom block of the tackle is being shackled to any convenient spot and the main halyard is manned and—
26	The top block is hoisted by the main halyard— <u>at least 10 feet off the deck</u> .
27	The bottom block of the tackle is then shackled to the bowline in the Lifesling bridle <u>outside of the lifelines</u> , and the tail of the tackle is led through a fair lead to a winch...
28	The Lifesling trailing line is coast off...
29	Enabling the man overboard to be hauled aboard, over the lifelines.
30	In cases where a three-part tackle and a winch are not available, it is possible to haul a person aboard using a four-part tackle alone.

Slide Number**Narrative/Description**

31	The circling maneuvers can be accomplished without touching the jobsheets of a close-hauled boat in most cases.
32	The backed jib actually assists in bringing the boat's head around.
33	Here is a pick-up as seen from off the boat. The man overboard has been acquired and the sails are being dropped.
34	The helmsman is now pulling the person to the boat, and ...
35	He is being hauled up and tied off.
36	The helmsman rigs the tackle—then hoists it and attaches it to the Lifesling bridle.
37	The helmsman then winches in the tail of the tackle, and...
38	The man overboard comes aboard!
39	On a large boat with powerful winches a person may be hoisted aboard without a tackle using a jib or a spinnaker halyard.
40	We have performed some preliminary trials using the Lifesling from a powerboat.
41	A four-part tackle with an attachment point at least seven feet above the rail proved workable and...
42	Pulling the person in over the stern, particularly if a transom door is available, proved to be the fastest method in those preliminary tests.

Slide Number**Narrative/Description**

43	Now for some problems and no-no's. Be sure to drop sails <u>all the way</u> .
44	Once the man overboard acquires the Lifesling, stop the boat once and for all. Towing the person from a fast-moving boat must be avoided.
45	Pull the person up as high as possible when you get them to the boat. If you tie them off too loosely, they can drift under the counter.
46	A “black” moment. The tackle is upside down and fouled. The person will have to be lowered and the tackle re-rigged.
47	Deploying a horsehoe and pole can complicate a Lifesling rescue...
48	The results can be man overboard “all wrapped up in his work.”
49	Lifesling test pickups have now been made over 100 times—many in the cold waters of Puget Sound in the winter; some in more than 30 knots of wind.
50	There's a man overboard back there! It's blowing hard and the Lifesling has been deployed...
51	The man overboard and the rescuer can both have confidence that...
52	With practice and preparation, the person overboard can come aboard with a smile!

C. RIGGING THE BOATS.

The step-by-step process of rigging the boat has been taught in the lecture. It is essential that all the boat handlers rig their boats at the dock prior to drills to thoroughly understand the process and work out their questions. This part of the process contains the most room for deck seamanship error so adequate attention must be directed to it. The process itself appears in the lecture section and in attachments, but several points should be stressed.

1. Rigging.

Each instructor shall take the gear to each boat for rigging. All clinic boats should be in one spot to save time.

2. Block and Tackle.

Many people are not familiar with use of a block and tackle. The top block should be marked clearly (red) so there is no question which is top.

3. Height Above Deck.

Make sure students physically hoist the tackle to at least ten feet off the deck so that they can see what height is required. A person standing on the deck will help to illustrate the height requirement.

4. Tail of the Block and Tackle.

Depending upon the length of line in the block and tackle you may have to be careful of hoisting the top of the block and tackle too high and losing the tail of the line. A stopper knot is not a good idea as it will not pass through a fair lead to a winch. For clinic purposes make sure that block and tackles contain at least 85 feet of line and you should be fine for most boats.

5. Fair Leads.

The tail of the block and tackle must have deck fair lead to a winch. Generally a job car serves the purpose, but each boat has its own requirement. A normal lead to the winch will avoid the override. Make sure your students understand the set up and can duplicate it in an emergency.

6. Twist in the Tackle Line.

It is well to illustrate the problems that will be caused by twists in the tackle line and make sure students understand the block and tackle well enough to sort it out.

7. Tying Victim Off.

Illustrate the need to get the victim high up on the side of the boat and designate the appropriate place and method of securing him.

8. Sling Attachment to Boat.

Stress the need to tape or seize the bowline at the deck attachment. The polypropylene line may undo itself quickly without this being done. For drill purposes just tape it.

9. Block and Tackle Outside the Lifesling.

Make sure your students practice, several times, hooking the block and tackle to the bowline in the sling outside the lifelines. It is a common mistake to go inside the lifelines.

10. Length of Rigging Portion.

We have found that one set of gear can be used to rig four or five boats in succession in about an hour and a half.

11. Keep It Simple.

Try and utilize existing leads and gear that is always on deck. Remember that during an emergency the rigging for pickup should be automatic, uncomplicated, and quick.

D. ON-THE-WATER DRILLS.

Common problems are found in the section "Problem Areas." This is intended as a guide to format.

1. Instructor.

Each boat should have an on-the-boat instructor. The instructor should be a competent sailor familiar with the method and comfortable with the boat. The instructor is there as a coach and to prevent serious problems.

2. Groups.

Each group of five boats should have a mother boat to monitor progress. The mother boat should be close in the vicinity of drills.

3.

Sail Section.

The head sail selected should be appropriate for the wind range. To be a little underpowered is all right, but there may be problems if a boat is very much underpowered or very much overpowered.

4. Number of Pickups.

Each boat should do several pickups with different people on the helm. We suggest 12 to 15 boats in three groups with each boat accomplishing three pickups.

5. Observation.

If boats are transferring one set of gear and doing drills in succession, the other boats should watch the boat doing the drill. They will learn much and possibly avoid mistakes.

6. Transferring Gear.

A Whaler is the best method of transferring gear from boat to boat. If your three groups are spread out you may need two or three Whalers. The boats can also transfer the gear themselves. Make sure they are very clear on boat order for the drills.

7. Length of Time.

Fifteen boats in three groups can accomplish three drills each in five hours (1200-1700). There must not be much of a lag between pickups or in transferring gear.

8. Weather and Sea Conditions.

This calls for judgment. Light air can be frustrating but power can be used in the circling only. The engine must be off before the victim is pulled in.

Heavy air maneuvers are surprisingly quick and easy. The competence of your students is the controlling factor.

E. COMMON QUESTIONS.

This section is devoted to a summary of some common problem areas you may be faced with. Many of the solutions are found in the research or in familiarity with the method. The more time you spend practicing and researching, the better able you will be to respond.

1. Boarding Ladder?

(Used as an example in lecture section.) The main points here are the difficulty of getting to the first rung and the probable weakness of the victim particularly in a rough sea. See case histories 13, 22, and Development Report, p. 10, infra.

2. Use of Another Halyard?

People commonly suggest use of a spinnaker Halyard instead of main halyard. If a spinnaker halyard is used the victim must be taken much further forward to be raised from the water, or the halyard must be brought back aft of the mast outboard of the shrouds. On some boats a halyard may jump the sheave if taken past mid-ship aft. The use of a spinnaker halyard entails more time spent getting rigged to the block and tackle. The spinnaker halyard may also hang up on the spreaders if it is brought aft. Use of the main halyard seems best, but each boat is different. Use the halyard in a position that will not jump the sheave.

3. Won't Main Halyard Jump Sheave?

It is possible, but in 120 drills it has not happened. We recommend staying with use of the main halyard unless proven unacceptable for a particular boat.

4. Aren't My Winches Big Enough to Eliminate the Tackle?

Possibly, but only on a size 26 or above and dependent upon the strength of the rescuer. There is also the question of the length of the tail of the halyard. We recommend they learn the method with the block and tackle and attempt the modification with their own boat with the weakest person on the winch lifting the heaviest. Remember water soaked clothing may add 50 pounds.

5. Why Not Heave-to Instead of Dropping Sails?

There may still be too much boat drift for the safety of the victim. Also it is doubtful that the heave-to can be properly accomplished to stop the boat totally. A means of tying off the helm is generally not immediately available. It is safer to drop the sails.

6. Doesn't Dropping the Slotted Main Cause Problems?

It may be messy, but it should not be a problem. In an emergency the neatness of the deck is not important. It cannot leave the boat, nor will it get you underway. (We have performed successful tests with slotted mains.)

7. Do You Use Pole and Horseshoe?

Our tests and those of the Naval Academy (125 tests) indicate the pole and horseshoe get deployed too far from the victim for the horseshoe to be usable. Further, the horseshoe if attached to the pole may foul the Lifesling. However, use of pole only, without horseshoe, instantly releasable, may help get back to the area. It is recommended, but is not taught as part of the method.

8. What Do I Do With the Spinnaker Up?

The procedure is the same. With training the crew can drop the spinnaker down on deck as the boat is stuffed to windward. The most important thing is to stop the boat and stay close to the victim. A broach is unpleasant, but it does stop the boat. This question is part of the ongoing research. It should be practiced with full crews although it may be tough on gear.

9. What Do I Do With a Tiller?

It is necessary to have some means to quickly tie off the tiller so that the boat will remain head to wind when you lower sails. Otherwise the boat will take off with full sails (and towing the victim).

10. Can I Use My Tackle Without a Winch Back Up?

Generally not. It may be possible, but it is best to try with the weakest person lifting the biggest.

11. Can I Just Lift the Victim With the Main Sheet or Vang from the Boom?

The victim will not clear the lifelines.

12. What Side of the Boat Do I Bring the Victim To?

Generally the windward side. The main sail and the boom will not be in the way (on the deck.)

13. What About an Unconscious Victim?

If it is a single-handed rescue, your chances are very slim to get the victim wrapped in the sling and to get the sling around them. A boat hook may be utilized. If more than one rescuer is available, you are able to put a line on a crew

member, drop him near the victim, and he can assist the victim into the sling and both can be lifted in. Obviously, this is a serious situation that requires clear thought and risk to the rescuer.

14. Crewed Pickups.

On some boats, a single-handed pickup might not be realistic, i.e., some large boats, or complicated boats.

Even though this method was developed for single-handed pickup, crewed pickups are fine for the clinic. It may be a question of confidence and having a hand will enable a person to learn the method. Whatever the situation, remember our job is to teach the method in the form best used by a particular boat.

E. COMMON PROBLEMS.

This method has to be learned, and there will be problems encountered. Following are some common ones to guard against.

1. Towing.

Probably the most dangerous part of the whole procedure is the potential of towing a victim. Our tests show that at 4.0 knots the water is coming over the victim's head and at 4.5 knots you will drown them quickly. The boat must be stopped immediately upon the victim's contact with the sling and remain head to wind while sails are dropped. Constant observation of the victim must be maintained. For drill purposes we recommend the victims start with their arm in the sling and get into the sling when the boat is stopped and the sails dropped.

2. Running Over Trailing Line.

This is probably due to unfamiliarity with towing the sling and possibly unfamiliarity with the turning radius of the boat. It is more of a problem in light air. With practice it will probably not happen.

If it happens as you turn and the backed jib blows the bow down, quickly release the jib sheet and let the jib blow to the other side. This will allow you to steer clear of the line.

If the line is run over, you may be able to sail it clear. If not, you may have to utilize the boat hook or get the sling aboard and undo the bitter end and pull it through.

3. Running Over the Victim.

Again, taking the jib across when in danger of running down the victim will allow you to steer clear of him. Do not steer too close when upwind of the victim.

4. Tiller Falling Off.

There needs to be a means of leashing the tiller amidship or keeping one person on the helm to prevent the tiller falling off and the sails filling causing the victim to be towed.

5. Tackle Upside Down.

Mark the top of the tackle clearly and make sure they understand the tackle during the rigging portion of the clinic.

6. Override on the Winches.

Another check list item for rigging portion of lecture. They should know correct fair lead before on-the-water drill.

7. Tackle Not High Enough.

If adequately explained during rigging it probably will not happen.

8. Tackle Rigged Inside Lifelines.

This is common. During rigging the boat, have them practice hooking up the tackle correctly several times.

9. Twists in Tackle.

Too many twists may create such friction that you cannot lift the victim. If you start to develop a lot of twists, clear your tackle and start over. If you proceed you may end up with a knotted snarl you cannot move either up or down. A properly coiled and stiff line will help avoid this.

F. RESPONSIBILITIES OF INSTRUCTORS.

Be alert to problems and be ready with solutions.

Try not to give too much advice during pickup.

Keep out of vessel traffic lanes.

Watch for traffic.

Watch victim constantly. His life is your responsibility.

Increase your understanding of the method.

Have all boat handlers practice sailing the boat first and turning circles.

Practice circles with the sling towing.

Give clear explanations.

Monitor VHF and communications with other boats.

G. RESPONSIBILITIES OF MOTHER BOATS.

Monitor all boats in group.

Remain in close proximity to boats doing drills.

Watch out for towing.

Keep eye out for traffic.

Monitor VHF and communications with other boats.

Assist in gear transfer if necessary.

Collect all gear at drill conclusion.

IV.

HOW TO ORGANIZE A CLINIC

To achieve a successful clinic thorough organization is essential. The format that follows seems to reach the maximum number of people given the current available instructors and resources.

A. BASIC ELEMENTS.

Place for lecture, including provision for slides and diagrams.

Moorage for boats, all close together.

One instructor per boat.

One victim per boat (attired in wet suit and PFD.)

One mother boat per each four or five clinic boats.

One Whaler per each four or five boats is nice, although not essential.

B. COMPOSITION.

The best thing is to combine the boat owners with other participants. This allows you to teach the method to five times as many people at once. On boats 25 feet and under, put two participants aboard. On boats 25 feet to 40 feet, three or four participants is good. On boats 40 feet and above, four or five participants is about right. Try to put people aboard a boat most like what they normally sail.

C. ADVERTISING.

You may not need to advertise to have an adequate class, but be sure you indicate clearly that prior sign up is required.

D. INSTRUCTORS.

Your on-the-boat instructors should have plenty of time spent doing the method. They should be matched to boats they are familiar and comfortable with.

E. VICTIMS.

When people call in to sign up suggest that they could be a victim. Fill up your victim slots early and have at least back ups. The best thing would be a liaison with diving club.

F. TIME FRAME.

It takes about a month to get advertising in, arrange moorage, and get everyone signed up so allow one month for arranging the clinic.

G. SIGN UP SHEETS.

I have enclosed a suggested sign up sheet that works quite well. Use pencil when signing people up. Get their full information as you will want to send them a roster before the clinic. Also send a stamped envelope for checks. It takes too long to collect at the door. Send the roster about a week before the clinic.

H. COSTS.

If you charge \$7.50 to \$10 you should make enough to cover your moorage, wet suit rental, postage, and printing. If you make a bit extra, you can use it to buy more gear for more clinics.

I. FORMAT.

As discussed, the best seems to be

0900 – 1030 Lecture/Slides

1030 – 1200 Rigging the Boats

1200 – 1700 On-The-Water Drills

J. DAY OF THE CLINIC.

Arrive at 0845. Name tags with their name and assigned boat. They should already know where they are assigned.

Give them any final changes and information regarding VHF, expected traffic, cautions, etc. Remember to tell them where to return the gear following the clinic.

Make sure you are very clear with all instructions, which group goes where, order of succession of boat drills, description of mother boat, etc. If you are not very clear, they will scatter all over.