

**U. S. NAVY  
RESCUE SWIMMER  
SCHOOL REFRESHER  
COURSE  
TRAINEE GUIDE**

**NAME** \_\_\_\_\_

**RATE** \_\_\_\_\_ **CLASS NO.** \_\_\_\_\_

**COURSE MISSION STATEMENT**

The Rescue Swimmer School Refresher Course (RSSR) is designed to provide refresher training to rescue swimmers who are returning to a rescue swimmer billet from a non-swimmer billet. It is also designed to make rescue swimmers aware of any changes in rescue swimmer equipment and/or procedures which have occurred since their last exposure.

**TRAINEE GUIDE**  
**FOR**  
**RESCUE SWIMMER SCHOOL REFRESHER COURSE**

**Q-050-0604**

**PREPARED FOR**  
**CHIEF OF NAVAL AIR TRAINING**  
**250 LEXINGTON BLVD SUITE 102**  
**CORPUS CHRISTI, TX 78419-5041**

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SECURITY AWARENESS NOTICE

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**\* This course does not contain any classified material \***  
**\*\*\*\*\***

**SAFETY/HAZARD AWARENESS NOTICE**

THIS NOTICE PROMULGATES SAFETY PRECAUTIONS TO THE STAFF AND STUDENTS, OF THE RESCUE SWIMMER SCHOOL REFRESHER COURSE.

## TRAINEE GUIDE

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RESPONSIBILITIES ARE ASSIGNED BY THE CHIEF OF NAVAL EDUCATION AND TRAINING, THROUGH THE CHIEF OF NAVAL TECHNICAL TRAINING.

STUDENTS MAY VOLUNTARILY REQUEST TERMINATION OF TRAINING AT ANY TIME. WHEN A STUDENT MAKES A STATEMENT SUCH AS "**I QUIT**" OR "**DOR**" (DROP ON REQUEST), HE/SHE SHALL BE IMMEDIATELY REMOVED FROM THE TRAINING ENVIRONMENT, AND REFERRED TO THE DIVISION OR TRAINING OFFICER FOR ADMINISTRATIVE ACTION. THE STUDENT SHALL THEN MAKE A WRITTEN STATEMENT, CLEARLY INDICATING THE DESIRE TO **DOR**.

ANY TIME A STUDENT OR INSTRUCTOR EXPRESSES CONCERN FOR HIS/HER PERSONAL SAFETY, HE/SHE SHALL SIGNAL FOR A TRAINING TIME OUT (**TTO**). TO CLARIFY THE SITUATION OR PROCEDURE, AND RECEIVE OR PROVIDE ADDITIONAL INSTRUCTION AS APPROPRIATE. "TRAINING TIME OUT" SIGNALS, OTHER THAN VERBAL, SHALL BE APPROPRIATE TO THE TRAINING ENVIRONMENT.

### HOW TO USE THIS TRAINEE GUIDE

This trainee guide is to be used concurrently with the instruction provided.

Each trainee guide is numbered concurrently with the lesson topics. Each topic consists of an outline sheet, containing: subject introduction, list of enabling objectives, and information pertaining to that lesson topic. Some topics also contain Diagram Sheets and Information Sheets for visual reference.

This is yours to keep. Feel free to mark it as you see fit; highlighting, underlining, and note-taking are all appropriate and encouraged. This trainee guide may not be used during testing.

#### **TERMINAL OBJECTIVES**

## TRAINEE GUIDE

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- 1.0 Upon completion of this unit of instruction, the student will demonstrate knowledge of the requirements for Rescue Swimmer School Training Program (RSSTP).
- 2.0 Upon completion of this unit of instruction, the student will demonstrate knowledge of preventing disease transmission, administer practical First Aid/CPR per current American Red Cross standards without injury to personnel or damage to equipment.
- 3.0 Upon completion of this unit of instruction, the student will select and use the appropriate rescue devices, describe the use of survivor marker/locator devices per NWP 3-50.1, use applicable publications to obtain required information relative to the rescue swimmer procedures, and operate and remove Navy and Air Force Aircrew survival equipment, harnesses and associated hardware, without injury to personnel or damage to equipment.
- 4.0 Upon completion of this unit of instruction, the student will demonstrate approach and carry procedures, release and escape procedures, and a rescue, to a survivor, in preparation for recovery per NWP 3-50.1, without injury to personnel or damage to equipment.
- 5.0 Upon completion of this unit of instruction, the trainee, while wearing swim trunks, T-shirt, mask, fins, booties, snorkel, LPU-28 shorty wet suit/wet suite top and Rescue Swimmer's harness, will develop stamina, endurance, and perfect stroke mechanics in a swimming pool without injury to personnel or damage to equipment.
- 6.0 Upon completion of this unit of instruction, the student will perform the Rescue Swimmer Refresher Physical Training/Testing requirements outlined in the Physical Training Lesson Plan, without injury to personnel or damage to equipment.

OUTLINE SHEET 1.2-1

POOL SAFETY REGULATIONS

**INTRODUCTION**

This information describes the rules and regulations to be adhered to during pool evolutions.

**ENABLING OBJECTIVES:**

- 1.1 State the general pool safety regulations.

**TOPIC OUTLINE**

A. General Pool Safety Regulations

1. No person with any type of skin fungus, open sores or contagious disease is allowed in the pool without consent of the SAR Corpsman.
2. No running or skylarking.
3. Glass containers are not allowed on the pool deck or locker room at anytime.
4. Prior to entering the pool, all personnel shall take a shower.
5. Students will wear UDT swim trunks, T-Shirt (optional) and either shorty wet suit or wet suit top during pool training. Additionally, a LPU-28 will be worn during mask, fin, and snorkel training.
6. No smoking except in designated areas.
7. Whistle Blasts:
  - a. One Whistle Blast - Instructor needs attention.
  - b. Multiple Whistle Blasts - Emergency. Follow instructions of staff.
8. No jewelry (i.e., rings, chains, etc.).
9. No diving unless specifically told.
10. Ladders shall be utilized to exit the pool unless specifically told other wise.
11. Take off fins before standing or walking on the pool deck.

OUTLINE SHEET 1.2-1 (Continued)

POOL SAFETY REGULATIONS

12. Ensure all pool drain covers are installed prior to commencing any disentanglement training.
13. If parachute is to be used for night time evolutions, the apex shall be marked with a chemlight.
14. Students shall wear an activated chemlight, attached to their swim mask, whenever they are in the pool in a night time evolution. If available, student chemlights should be different, in color, from other chemlights being used for lighting other devices.
15. If different color lighting devices are being used, ensure this is briefed prior to start of night time evolutions.
16. Students shall use ear wash after all swimming events.

B. Emergency Situations

1. Anytime you are in trouble, yell for help.
2. If a person is in actual danger the instructor only will enter the water to render assistance.
3. If you see anyone in trouble inform an instructor immediately.

C. Shallow Water Blackout

1. Shallow water blackout can be caused by the effects of hyperventilation.
2. Shallow water blackout (passing out under water) can cause death.
3. Hyperventilation is strictly prohibited.

OUTLINE SHEET 2.2-1

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

**INTRODUCTION**

First Aid, in any situation, consists of emergency treatment of the sick or injured before medical help can be obtained. Measures taken should not supercede or replace proper medical and surgical attention and should consist of furnishing temporary assistance.

**ENABLING OBJECTIVES:**

- 2.1 Respond to an emergency per current American Red Cross standards.
- 2.2 Administer CPR per current American Red Cross standards.
- 2.3 Administer Standard First Aid per NAVEDTRA 12081 standards.
- 2.4 Administer Practical First Aid in a mock trauma (moulage) scenario.

**TOPIC OUTLINE**

A. Purpose of First Aid for Rescue Swimmers

- 1. Save life.
- 2. Prevent further injury.
- 3. Preserve resistance and vitality.
- 4. Basic principles which further the purposes of First Aid:
  - a. Act quickly, but effectively.
  - b. Reassure the survivor in a calm manner.
  - c. Reveal only enough of the survivor's injuries to the survivor to insure cooperation.
  - d. Don't talk to others of the survivor's injuries while the survivor is in hearing range.
  - e. If survivor is in danger of further injury, remove from danger quickly and smoothly.

OUTLINE SHEET 2.2-1 (Continued)

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

B. Basic Order of Treatment

1. If the survivor is in the water and not breathing, give two full breaths. If physically able, do not interrupt artificial ventilation until the survivor is in the rescue platform.
2. If survivor is unconscious or has ejected, always treat as a possible head, neck and/or back injury. The spine shall be stabilized prior to moving the survivor whenever circumstances permit.

**NOTE**

As a SAR swimmer, your primary objective is to get the survivor into the rescue platform before attempting any advanced first aid.

3. Advanced first aid begins once the survivor is in the rescue vehicle.
  - a. Conduct primary survey
    - (1) Establish a working airway, breathing and circulation.
    - (2) Stop severe hemorrhage
    - (3) Place cervical collar on the survivor if spinal injury is suspected
  - b. Conduct secondary survey

C. Hemorrhage Control

1. Hemorrhage Control is performed by the following five methods:
  - a. Direct pressure
  - b. Elevation
  - c. Bandage

OUTLINE SHEET 2.2-1 (Continued)

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

PAGE 3 of 8

- d. Pressure Points
- e. Tourniquet

**WARNING**

When practicing on a simulated survivor, do not tighten tourniquet.

2. Applying a tourniquet

- a. When you use a tourniquet you risk sacrifice of a limb in order to save a life.
- b. Tourniquets are only placed on the extremities (arms and legs). They are normally placed 1 to 1.5 inches above the wound.
- c. Write down time and location of tourniquet, place on front of survivor's shirt.
- d. Write a capital "T" on the survivor's forehead.
- e. Leave tourniquet visible.
- f. Never use string or wire or thin material. Use a ready made or improvised material at least one inch wide.
- g. Tighten only enough to stop the bleeding.
- h. Never loosen unless advised by a physician.

D. Secondary Survey

- 1. During the secondary survey, examine the survivor from head to toe and treat for further injuries that are found.
  - a. Remove only enough of the survivor's clothing to ensure a thorough survey, yet not chill the victim.

OUTLINE SHEET 2.2-1 (Continued)

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

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- b. Rip or cut clothes along a seam to expose injury.
2. The treatment of secondary injuries and illness is a combination of first aid and common sense.
- a. The basic order of treatment can vary depending on the situation and injuries.
  - b. If the survivor is having trouble breathing, place the survivor in a comfortable position (semi-seated) which allows treatment and does not worsen his injuries. If this position will make the injuries worse, and the survivor can breathe okay until treated, treat injuries first.

**NOTE**

Place in semi-seated position only if neck and back injuries are not expected.

3. Facial/Scalp Wounds
- a. Ensure that the tongue, injured soft tissue, or other material, does not block the airway causing a breathing obstruction.
  - b. Position the survivor so that blood will drain out of the mouth and nose.
  - c. Remember that facial wounds, as well as scalp wounds, bleed freely. Do not let that scare you and keep you from properly treating the survivor.
4. Open (Compound) Fracture
- a. An open fracture is a broken bone with an open wound.
  - b. Treat the wound first. Most bleeding can be stopped by applying direct pressure on the wound or by applying digital pressure at the appropriate pressure point.
  - c. Dress the wound.
  - d. Do not attempt to set a broken bone.

OUTLINE SHEET 2.2-1 (Continued)

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

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5. Once the survivor is aboard the rescue platform, the medical equipment available to the rescue swimmer is the Level "A" medical kit. Nomenclature and quantity is described in the NWP 3.50-1 manual.
6. Keep rescue vehicle commander informed of survivors condition to include the following pertinent information:
  - a. Age
  - b. Sex
  - c. Blood type/Allergies/Medications (if known)
  - d. State all injuries

E. Treating Shock

1. Most survivors will be in shock.

**WARNING**

In a rescue situation from a water environment, the survivor may be placed in a litter and hoisted horizontally to prevent the effects of hydrostatic squeeze.

2. Hydrostatic Squeeze
  - a. Caused by the relief of outside water pressure against the body.
  - b. Removal from the water has similar effect as shock or near shock, and causes a pooling of blood in the extremities increasing shock.
3. Position survivor for transport in the rescue vehicle in one of the following five positions.
  - a. Traditional Shock Position -

OUTLINE SHEET 2.2-1 (Continued)

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

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Feet are elevated above the level of the heart. Use this position unless the survivor's injuries indicate the use of another position.

b. Flat on Their Back Position -

Use when serious head injuries or spinal injury is suspected. Position the survivor on their back, keeping the body as straight as possible. Maintain in-line stabilization for the head and neck.

c. Semi-Sitting Position -

Used for survivor with difficulty breathing, or with superficial head, neck, or chest injuries. Not to be used if you suspect head, neck or spinal injuries.

d. Knee's Flexed Position -

Used for survivor with abdominal injuries. Lie survivor on their back and raise their knees to approximately 45 degrees. This will ease tension on the abdominal muscles.

e. Side Position -

Used for survivor with nausea and vomiting, bleeding from mouth, large amounts of oral secretions or an open (sucking) chest wound, survivor is placed on the injured side.

F. Underwater Injuries

1. May occur anytime a survivor breathes compressed gases underwater.
  - a. Helicopter Emergency Egress Device Systems (HEEDS).
  - b. Seat Pan Oxygen.
  - c. Self-Contained Underwater Breathing Apparatus (SCUBA).
2. Two life threatening conditions may occur.
  - a. Air embolus.

OUTLINE SHEET 2.2-1 (Continued)

PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

- b. Decompression sickness (the BENDS).
3. Signs and Symptoms
- a. Air Embolus
    - (1) Dizziness
    - (2) Blurred vision
    - (3) Chest pain
    - (4) Disorientation
    - (5) Personality change
    - (6) Paralysis or weakness
    - (7) Bloody froth from mouth or nose
    - (8) Convulsions
  - b. Decompression Sickness (BENDS)
    - (1) Unusual fatigue or weakness
    - (2) Skin itch
    - (3) Pain in the arms, legs, or torso
    - (4) Dizziness
    - (5) Coughing
    - (6) Shortness of breath
    - (7) Numbness, tingling or paralysis

## OUTLINE SHEET 2.2-1 (Continued)

## PRACTICAL FIRST AID TRAINING/MOCK TRAUMA

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4. Treatment
  - a. Both air embolus and decompression sickness require urgent recompression.
  - b. Administer CPR if required.
  - c. Keep airway open. Survivor may vomit.
  - d. Keep survivor lying down (left side down) and quiet. Embolism bubble will rise away from heart in this position.
  
5. Transportation
  - a. Unpressurized aircraft fly at lowest safe altitude and limit altitude changes.
  - b. Ensure rescue vehicle commander contacts hyperbaric chamber before arrival of survivor.
  - c. Keep rescue vehicle commander informed of survivors condition.

JOB SHEET 2.2-1

PRACTICAL FIRST AID/MOCKTRAUMA

Student Name: \_\_\_\_\_

PRACTICE / FINAL

Total Time: \_\_\_\_\_

**A. CRITICAL AREAS**

- 1. Primary Survey: \_\_\_\_\_
  - a. A.B.C.'s \_\_\_\_\_
  - b. Life Threatening Injuries \_\_\_\_\_
- 2. Spinal Management: Cervical Collar \_\_\_\_\_
- 3. Shock Position: Correct Position \_\_\_\_\_

**B. SECONDARY AREAS** Maximum score of **20** (Circle One , 0-2: 0-Poor 1-Average 2-Above Average)

- 1. Knowledge of Level "A" Medical Kit:
  - a. Location of gear : ( 2, 1, 0 )
  - b. Gear properly utilized: ( 2, 1, 0 )

- 2. Survey:
 

	<u>Primary</u>	<u>Secondary</u>
a. Performed correctly: ( 2, 1, 0 )	__Head__Arms	__Head__Nose
b. Thorough: (2, 1, 0)	__Neck__Pelvis	__Eyes__Abd
	__Chest__Groin	__Ears__Neuro
	__Back__Legs	

- 3. Dressings:
  - a. Proper Dressing: ( 2, 1, 0 )
  - b. Correctly Applied: ( 2, 1, 0 )

- 4. Splinting:
  - a. Correct Splint: ( 2, 1, 0 )
  - b. Properly Applied: (2, 1, 0)

- 5. Patient Report:
  - a. Correct Order: ( 2, 1, 0 )
  - b. Proper Information: ( 2, 1, 0 )

Total: \_\_\_\_\_ (Min Passing Score: 16)

\_\_\_\_Age\_\_Ethnic Group\_\_Gender\_\_Approx Weight\_\_Allergies  
\_\_\_\_Medication\_\_Blood Type\_\_Injuries\_\_Shock Position



OUTLINE SHEET 3.1-1

RESCUE DEVICES

**INTRODUCTION**

During a rescue situation, there are many different types of rescue devices available to the rescue swimmer. Thorough knowledge of the devices in which he/she can choose will aid in the saving of the survivor as well as helping the swimmer in the rescue. This information sheet contains information to assist the rescue swimmer in choosing and utilizing the appropriate rescue device.

**ENABLING OBJECTIVES:**

- 3.1 Demonstrate the proper methods of communication between the Rescue Swimmer and the Rescue Platform per NWP 3-50.1:
  - a. Hand signals
  - b. Radio communication
  
- 3.2 Demonstrate the functional operation of the following Rescue Devices per NWP 3-50.1:
  - a. Double Rescue Hook
  - b. Modified Rescue Strop
  - c. Rescue Net
  - d. Rescue Litter/SAR MEDEVAC Litter, Trail Line and Gloves
  - e. Rescue Seat
  - f. Hoisting Vest
  
- 3.3 Place simulated victim into the following Rescue Devices in a water environment per NWP 3-50.1:
  - a. Double Rescue Hook
  - b. Modified Rescue Strop
  - c. Rescue Net
  - d. Rescue Seat
  - e. Rescue Litter/SAR MEDEVAC Litter

**TOPIC OUTLINE**

- A. Communication Procedures
  - 1. Efficient communications keeps pilot, hoist operator and swimmer aware of developing rescue situation and allows aircraft to provide needed support to

INFORMATION SHEET 3.1-1 (Continued)

RESCUE DEVICES

swimmer (i.e., deployment of rescue devices).

2. Hand signals are used whenever radio communications are not possible.
  - a. Primary means of communication between Rescue Swimmer and the aircraft in a maritime environment.
  - b. All crewmembers must be familiar with the meaning of standard hand signals. (Diagram Sheet 3.1-1)
3. Radio Communications offer optimal communications.

B. Double Rescue Hook

1. The Double Rescue Hook is the primary rescue device. All other rescue devices can only be utilized with the Double Rescue Hook. In accordance with NAVAIR 13-1-6.5, the large hook, rated at 3,000 lbs., shall be the only hook used to hoist personnel; the small hook, rated at 1,000 lbs., is to be used only for lightweight items such as mail. The equipment ring, rated at 1500 lbs., can be used to hoist light equipment and mail.
2. Night-time Illumination (Diagram Sheet 3.1-2)
  - a. Attach chemlight strap to equipment ring of the Double Rescue Hook and attach two chemlights to the strap.
3. Procedures for Helo-Deployed Rescue Hook

**WARNING**

Never touch any rescue device before it is grounded on deck or by water entry, doing so may cause electrical shock. Helicopter rotors can build up a significant static electrical charge.

CHANGE 1

INFORMATION SHEET 3.1-1 (Continued)

**WARNING**

When connecting to a survivor who has an SV-2 vest, ensure that the chest strap on the survivor is loosened slightly to avoid injury to the survivor.

RESCUE DEVICES

- a. If swimmer and survivor are to be hooked directly to the Double Rescue Hook and hoisted simultaneously
  - (1) Signal for pickup.
  - (2) Allow hook to ground.
  - (3) Hook up survivor.
  - (4) Hook up swimmer.
  - (5) Perform safety check.
  - (6) Signal for "up-hoist".
  
- b. If survivor is to be attached to the gated "D"-ring of the swimmer's harness, and both swimmer and survivor are hoisted by the swimmer's "V"-ring
  - (1) Attach survivor's gated "D"/"V"-ring to swimmer's gated "D"-ring.
  - (2) Signal for pickup.
  - (3) Allow hook to ground.
  - (4) Hook up swimmer's "V"-ring to large hook of Double Rescue Hook.
  - (5) Perform safety check.
  - (6) Signal for "up-hoist".

INFORMATION SHEET 3.1-1 (Continued)

**WARNING**

Do not place fingers in or around the bumper compressing spring of the Double Rescue Hook, due to the possibility of a crushing injury to fingers or hands during hoisting operations.

RESCUE DEVICES

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C. Modified Rescue Strop

1. Optional rescue device used with Double Rescue Hook. The Modified Rescue Strop is a buoyant device with a red waterproof cordura cover over foam which is designed to accommodate one survivor. A webbing strap runs through the cover and has a "V"-ring at both ends for attaching to the Double Rescue Hook. Two arm retainer straps are attached to the Modified Rescue Strop to hold survivor in the strop.
2. Night-time Illumination (Diagram Sheet 3.1-2)
  - a. Two chemlights are attached to the strap. Strap is attached to the Rescue Strop lower "V"-ring by the crewman.
3. Procedures for use
  - a. Signal for pick-up.
  - b. Allow rescue device to touch water.
  - c. Approach hoist with survivor in an appropriate carry.

**NOTE**

Arm retainer straps shall be outboard when placing the Modified Rescue Strop on the survivor.

- d. Working behind survivor, pass Modified Rescue Strop free end under survivor's one arm, around the back, under other arm, making sure the arm retainer straps are placed outboard. Connect Modified Rescue Strop free end lifting "V"-ring to the large hook on Double Rescue Hook.

INFORMATION SHEET 3.1-1 (Continued)

**NOTE**

Assure strop is positioned tightly under survivor's armpits and positioned on upper half of survivor's back.

RESCUE DEVICES

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**WARNING**

Arm retainer straps shall always be used when hoisting with the rescue strop. This prevents the survivor's arms from raising and the survivor from slipping out of the rescue strop.

- e. Connect the arm retainer strap, by passing the arm retainer straps over the survivor's arms, route under the Modified Rescue Strop, and across the survivor's chest.

**WARNING**

Arm retainer straps shall be routed under the Modified Rescue strop after they are passed over the survivor's arm.

- f. Connect the snap hook arm retainer strap to the "V"-ring arm retainer strap. Pull webbing on the "V"-ring arm retainer strap until the arm retainer straps are secured tightly around the survivor's arms.

**WARNING**

The possibility exists for an unconscious survivor or physically incapacitated survivor to slip through the Rescue Strop if their arms are not secured at the side with the arm retainer straps.

- g. If swimmer is to be hoisted, attach swimmer's "V"-ring to large hook of the Double Rescue Hook.
- h. Perform safety check.
- i. Signal for "up-hoist".
- j. The Rescue Swimmer may use his feet to stabilize entry of a conscious survivor into the aircraft, but shall not release the survivor's arms until:

INFORMATION SHEET 3.1-1 (Continued)

- (1) The survivor is securely on the aircraft deck.

RESCUE DEVICES

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- (2) The hoist operator signals that he has the survivor in positive control within the aircraft.

D. Rescue Net

- 1. Conically-Shaped Bird Cage

**WARNING**

In order to utilize the net, the front support rods must be locked in place to prevent the net from collapsing on the survivors. Collapsing of net could result in the survivor(s) drowning.

- 2. Primarily used for multiple rescue.
- 3. Never send unconscious victim up alone in Rescue Net.
- 4. Flotation for two persons.
- 5. A "V"-strap is provided for securing the net in the rescue vehicle door.
- 6. Night-time Illumination (Diagram Sheet 3.1-3)
  - a. Two chemlights are attached to the strap. Chemlight straps are attached to the nylon rope just above the middle frame flotation on both sides of the net opening.
- 7. Procedures
  - a. Signal for net.
  - b. Allow device to ground.

INFORMATION SHEET 3.1-1 (Continued)

RESCUE DEVICES

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- c. Place Rescue Net opening directly in front of the Rescue Swimmer without disconnecting it from the rescue hook.
- d. Place survivor in a collar/equipment tow and swim into Rescue Net backwards, positioning the survivor on either side of the net facing out.
- e. Ensure that survivor's body is entirely in the net. Instruct survivor not to exit the net until directed by crewman in helicopter.

**WARNING**

Survivor shall not attempt to get out of the Rescue Net until directed by the crewman.

- f. Place one arm across the net.
- g. Signal for up-hoist.
- h. When net reaches the helicopter, the crewman shall hook up the safety strap from the rescue net to the decking of the helicopter. The crewman shall assist the survivor inside the helicopter.

E. Rescue Litter/SAR MEDEVAC Litter (Diagram Sheet 3.1-4)

1. Litter Characteristics

- a. Both are for use with suspected back injury victims and unconscious survivors.

**WARNING**

An aircrewman who has ejected and/or is unconscious may potentially have a spinal injury, assess the situation and treat accordingly. Loss of ABC's or other life threatening injuries will take precedence over a spinal injury.

- b. Both are designed to be used over land or in water with flotation assemblies.
- c. Rescue Litter requires a flotation kit for over water use. When flotation is installed litter floats with patients head slightly reclined from the vertical.

RESCUE DEVICES

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INFORMATION SHEET 3.1-1 (Continued)

**WARNING**

If survivor is wearing the bright orange Quick Donning Anti-Exposure Suit it may counteract the self-righting feature of the Rescue Litter and the SAR MEDEVAC Litter.

- c. Both have a two piece Rescue Litter Hoisting Sling which are attached to the Double Rescue Hook. Sling is color coded short red to head and long white to feet. (Diagram Sheet 3.1-5)
  - e. The SAR MEDEVAC Litter folds in half to reduce space requirements and is more easily used for rappelling and backpacking. It weighs approximately 40 pounds. It can be vertically hoisted with its own sling, making it especially useful in mountainous and restricted access situations. It has replaced the Neil Robertson Litter for use on submarines, and is an alternative to the Rescue Litter.
  - f. Night-time Illumination (Diagram Sheet 3.1-6)
    - (1) Two chemlights are attached to each strap. One Strap is attached to the head of the litter; one to the foot of the litter.
  - g. Both litters utilize a "trail line" controlled by the swimmer in the water to control litter deployment and stabilize the litter during hoisting. (Diagram Sheet 3.1-7)
    - (1) One hundred and twenty feet in length.
    - (2) Three eighths inch thick polyethylene, diamond-braided rope.
    - (3) Weak link for breakaway capability.
    - (4) Gloves and line are deployed together via a five pound shot bag.
2. Securing Survivor to the Rescue Litter
- a. Rescue Litter has five restraint straps. They are stowed with four retaining straps.
  - b. Procedure for securing survivor

RESCUE DEVICES

- (1) Position survivor on litter.

INFORMATION SHEET 3.1-1 (Continued)

- (2) Place the top restraint strap under the arms but over the chest of the survivor and secures it to the other side.
- (3) Secure the padded chest strap over survivor's arms and chest.

**NOTE**

When securing the chest pad, the survivor's arms must be secured. The rescue swimmer may encounter difficulty if the survivor has inflated flotation. However, the survivors flotation is not to be removed or deflated even if the flotation prevents securing the chest pad. Instead, remove chest pad from litter and continue with rescue, if practical, return chest pad back to helicopter when hoisted.

- (4) Next, working from the chest strap down, secure the rest of the restraint straps.

3. Securing survivor to the SAR MEDEVAC Litter

- a. Litter will need to be assembled by hoist operator prior to lowering to swimmer.
- b. Litter has integral cervical collar and head restraint, four patient restraint straps, one chest flotation pad assembly strap, and one foot restraint assembly.
- c. Procedure for securing survivor
  - (1) Position survivor in litter.
  - (2) Place the top restraint strap under the arms but over the chest and attach to the fitting on the left side..
  - (3) Next, working from the chest strap down, secure the rest of the restraint straps.

RECSUE DEVICES

CHANGE 1  
PAGE 10 of 14

- (4) Once the restraint straps are secured, attach the flotation pad assembly over the arms. The rescue swimmer may encounter some difficulty if survivor has inflated flotation. However,

INFORMATION SHEET 3.1-1 (Continued)

floatation shall not be removed. Instead, remove floatation pad assembly from litter and continue with rescue, if practical swimmer will return chest pad assembly back to the helicopter when hoisted.

- (5) Properly adjust foot restraint assembly.
- (6) Secure head restraint assembly if possible. Do not remove survivor's helmet if neck or back injury is suspected.

4. General Litter Procedures

- a. Signal for litter. (Trail line will be deployed first.)

**WARNING**

The weight bag shall be deployed so as not to strike Rescue Swimmer or survivor.

- b. The hoist operator shall deploy the trail line ensuring that it is attached to the litter.

**WARNING**

The Rescue Swimmer shall wear trail line gloves in order to prevent rope burns to the hands.

- c. Rescue Swimmer shall wear trail line gloves.
- d. The Rescue Swimmer shall pull on the trail line gently until the entire line is deployed.
- e. Signal "thumbs-up" indicating ready for litter.
- f. Use the trail line to control the litter and pull it into position as it is lowered.
- g. Allow rescue device to touch water.
- h. Disconnect hoisting slings from rescue hook, placing hoisting slings outside litter. Do not allow hoisting slings to foul restraining straps. CHANGE 1
- i. The Rescue Swimmer shall guide the survivor into the positioned rescue litter using the collar tow or equipment carry.

INFORMATION SHEET 3.1-1 (Continued)

RESCUE DEVICES

PAGE 11 of 14

- j. Position survivor on litter, adhering to warning regarding survivor's buoyancy and the self righting feature of the litter.

**WARNING**

If the survivor is wearing a buoyant antiexposure suit such as the Imperial dry suit, it will affect the flotation characteristics of the litter and may negate the self-righting feature.

- k. Secure survivor using procedures appropriate to the litter.
- l. Ready the Rescue Litter Hoisting Sling and signal the aircraft to move in for pick-up.
- m. Hook the Rescue Litter Hoisting Sling (both sides) to the large hook.
- n. Conduct pre-hoisting safety check, ensuring survivor is securely within litter, litter is attached to large hook, tending line is attached to the proper side of the litter (aircraft dependent), swimmer is wearing gloves, and cable is clear and not wrapped around litter or swimmer.
- o. Signal for pick up.
- p. Swimmer remains in water, taking a slight strain on trail line, stabilizing the hoist, and keeping the litter oriented parallel to the aircraft. Upon reaching the rescue platform, maneuver survivor aboard per platform specific procedures. (Diagram Sheet 3.1-8/9)
- q. When the litter is at the aircraft entrance, the swimmer shall use the trail line to maneuver the litter such that survivor's head enters the aircraft per specific platform.

RESCUE DEVICES

PAGE 12 of 14

- r. With the litter and trail line on board, the crewman shall lower the hoist cable and recover Rescue Swimmer.

INFORMATION SHEET 3.1-1 (Continued)

F. Rescue Seat (Diagram Sheet 3.1-10)

1. Two folding flukes for sitting.
2. Bright orange flotation collar for high visibility.
3. Swimmer or survivor must lower the flukes.
4. Two adjustable yellow straps with friction adjusters.
5. Used for both land and sea rescue.
6. Night-time Illumination
  - a. There is no available place to attach the chemlight strap to the Rescue Seat. The chemlights shall be attached to the rescue hook during night operations.
7. Procedures for use
  - a. Signal for device.
  - b. Allow device to ground.
  - c. Pull down fluke and have survivor sit on it, facing the rescue seat.

**WARNING**

If hoisting an unconscious survivor with the rescue seat, the rescue swimmer shall be hoisted along with the survivor.

INFORMATION SHEET 3.1-1 (Continued)

**NOTE**

If survivor is wearing an inflated LPU life preserver, the waist lobes may need to be disconnected prior to attaching the adjustable safety strap.

- d. Position riders, pass adjustable safety strap under rider's arms and around their back and secure strap to the V-ring and tighten until survivor is secured against flotation collar.
- e. Have the survivor wrap arms and legs around the flotation collar.
- f. Perform safety check.
- g. Signal for "up-hoist".

**NOTE**

If the rescue swimmer elects to be hoisted with survivor, the rescue swimmer shall wear the safety strap in the same manner as survivor.

G. Hoisting Vest (Diagram Sheet 3.1-11)

- 1. The hoisting vest is not a water rescue device.
- 2. Nylon fish net vest.
- 3. Adjustable for each survivor.
- 4. Used for over-land recovery or ship to ship transfer. If used for overwater hoist, flotation must be placed over the vest.
- 5. Night-time Illumination
  - a. There is no available place to attach the chemlight strap to the Hoisting Vest. The chemlight strap shall be attached to the rescue hook on all night operations.
- 6. Procedures for use
  - a. Place survivor in vest. Place flotation over hoisting vest.
  - b. Perform safety check.
  - c. Signal for "up-hoist".

INFORMATION SHEET 3.1-1 (Continued)

- d. Trail line procedures may be used with this device.

RESCUE DEVICES

PAGE 14 of 14

H. Rescue Equipment Inspection and Care

1. Visual Inspection Prior to Use

- a. Inspect fabric for cuts, deterioration, and abrasion.
- b. Inspect seams for proper adhesion and stitching.
- c. Inspect all hardware for security of attachment, corrosion, damage, wear, and if applicable, ease of operation.
- d. Check for sharp edges and projections.
- e. Ninety day inspection cycle for equipment conducted by maintenance personnel.

2. Care After Use

- a. Fresh water wash all gear after use.
- b. Per NAVAIR 13-1-6.5, the Rescue Strop must be inspected after every immersion in salt water.

DIAGRAM SHEET 3.1-1

HAND SIGNALS

<b>DAY SIGNALS</b>		
<b>MEANING</b>	<b>SIGNAL</b>	<b>FIGURE</b>
<b>1. I am all right</b>	<b>Raised arm, open hand, fingers extended</b>	
<b>2. Ready for pickup</b>	<b>Raised arm, thumb up</b>	
<b>3. In trouble, need assistance</b>	<b>Vigorous waving of one arm</b>	

DIAGRAM SHEET 3.1-1 (Continued)

HAND SIGNALS

<b>NIGHT SIGNALS</b>		
<b>MEANING</b>	<b>SIGNAL</b>	<b>FIGURE</b>
<p><b>3. In trouble, need assistance</b></p>	<p><b>Wave signal flare (night end)</b></p>	 <p>A diver is shown from the chest up, floating in the water. The diver's right arm is raised, and they are holding a flare that is emitting a long, dark, wavy trail of smoke or light.</p>
<p><b>4. In trouble, need assistance</b></p>	<p><b>Blue strobe on</b></p>	<p style="text-align: center;">STROBE LIGHT WITH BLUE LENS</p>  <p>A diver is shown from the chest up, floating in the water. The diver is wearing a blue strobe light on their chest. A line points from the text 'STROBE LIGHT WITH BLUE LENS' to the light.</p>
<p><b>5. In trouble, need assistance. If on rope or hoist, set down immediately</b></p>	<p><b>Blue chemical light (activated)/blue strobe on</b></p>	<p style="text-align: center;">STROBE LIGHT WITH BLUE LENS/B BLUE CHEMICAL LIGHT (ACTIVATED)</p>  <p>A diver is shown from the chest up, floating in the water. The diver is wearing a blue chemical light on their chest. A line points from the text 'STROBE LIGHT WITH BLUE LENS/B BLUE CHEMICAL LIGHT (ACTIVATED)' to the light.</p>

DIAGRAM SHEET 3.1-1 (Continued)

HAND SIGNALS

<b>DAY SIGNALS</b>		
<b>MEANING</b>	<b>SIGNAL</b>	<b>FIGURE</b>
<b>7. Deploy rescue litter</b>	<b>One arm raised with open palm, fingers extended, other arm raised over the swimmer's head and touching the first arm at the elbow</b>	
<b>8. Deploy rescue net</b>	<b>Both arms raised, palms open, fingers extended, at a 45° angle to the side of the swimmer's head</b>	
<b>9. Raise cable</b>	<b>Raised arm, thumbs up</b>	

DIAGRAM SHEET 3.1-1 (Continued)

HAND SIGNALS

<b>DAY SIGNALS</b>		
<b>MEANING</b>	<b>SIGNAL</b>	<b>FIGURE</b>
<b>10. Heave around, haul back to ship</b>	<b>Raised arm, thumb up, trail line in hand</b>	
<b>11. Stop hoisting</b>	<b>Raised arm, clenched fist</b>	
<b>12. Lower cable</b>	<b>Raised arm, thumb down</b>	

DIAGRAM SHEET 3.1-1 (Continued)

HAND SIGNALS

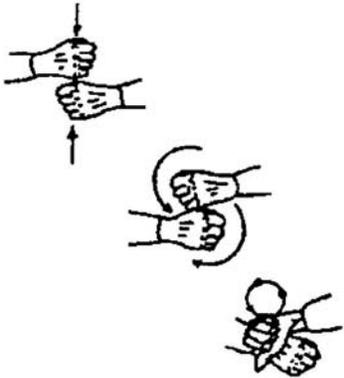
<b>DAY SIGNALS</b>		
<b>MEANING</b>	<b>SIGNAL</b>	<b>FIGURE</b>
<p><b>13. Failed hoist</b></p>	<p><b>Clenched fist over clenched fist followed by a thumbs down by hoist operator</b></p>	
<p><b>14. Deploy rescue seat</b></p>	<p><b>Both arms outstretched, palms up</b></p>	
<p><b>15. Deploy oxygen/suction unit</b></p>	<p><b>One palm cupped over mouth and nose, clenched fist in front</b></p>	

DIAGRAM SHEET 3.1-1 (Continued)

HAND SIGNALS

<b>NIGHT SIGNALS</b>		
<b>MEANING</b>	<b>SIGNAL</b>	<b>FIGURE</b>
<b>1. I am all right</b>	<b>Swimmers's lighting device on, raised arm,</b>	
<b>2. Move in for pickup</b>	<b>Wave chemical light</b>	

DIAGRAM SHEET 3.1-2

DOUBLE RESCUE HOOK AND MODIFIED RESCUE STROP  
(NIGHT-TIME ILLUMINATION)

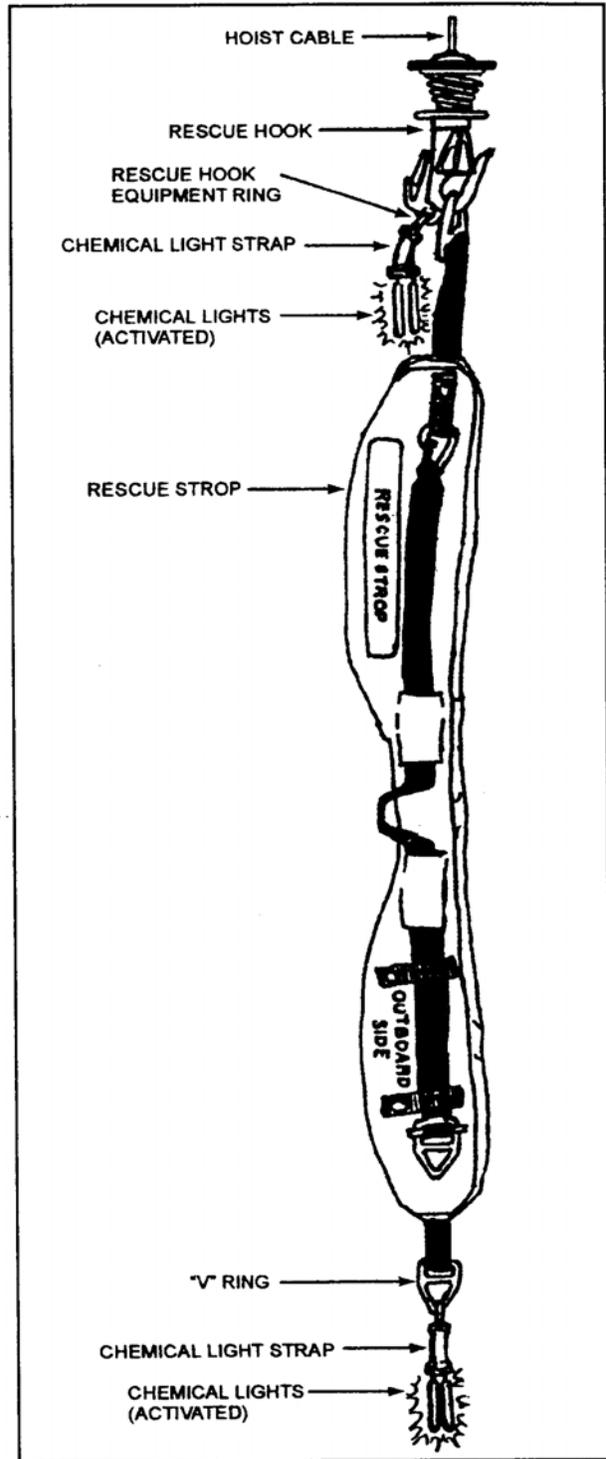
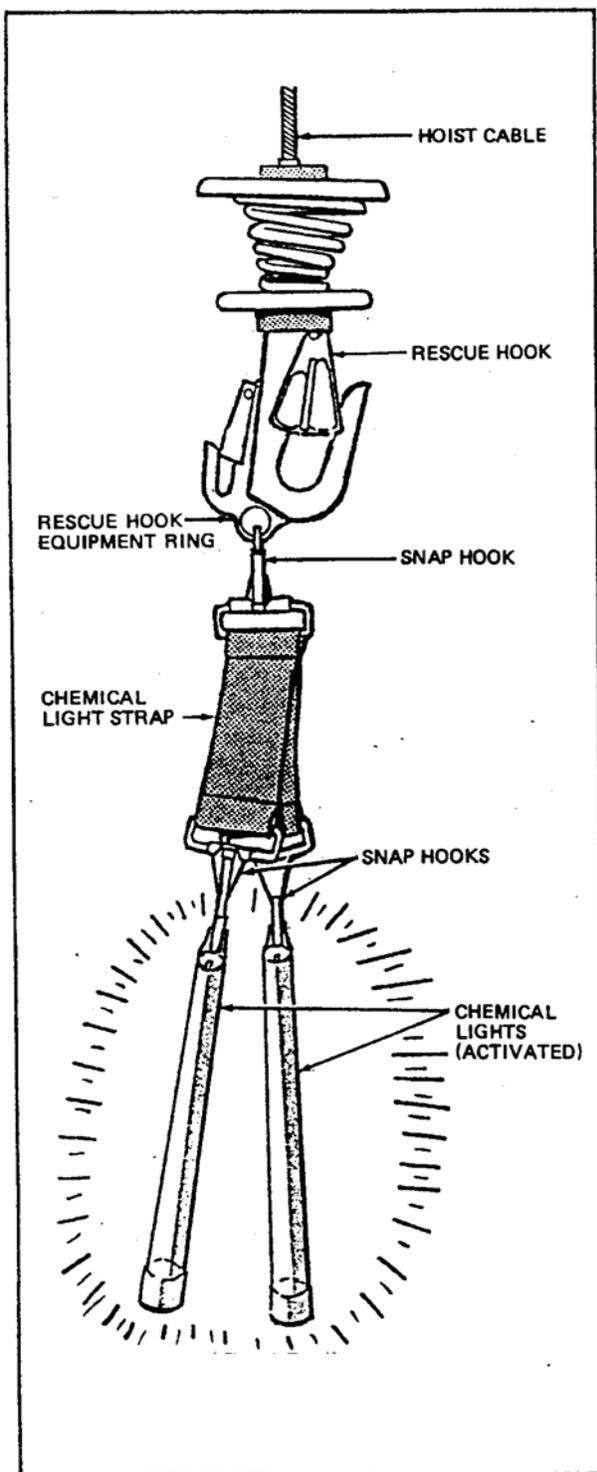


DIAGRAM SHEET 3.1-3

RESCUE NET  
(NIGHT-TIME ILLUMINATION)

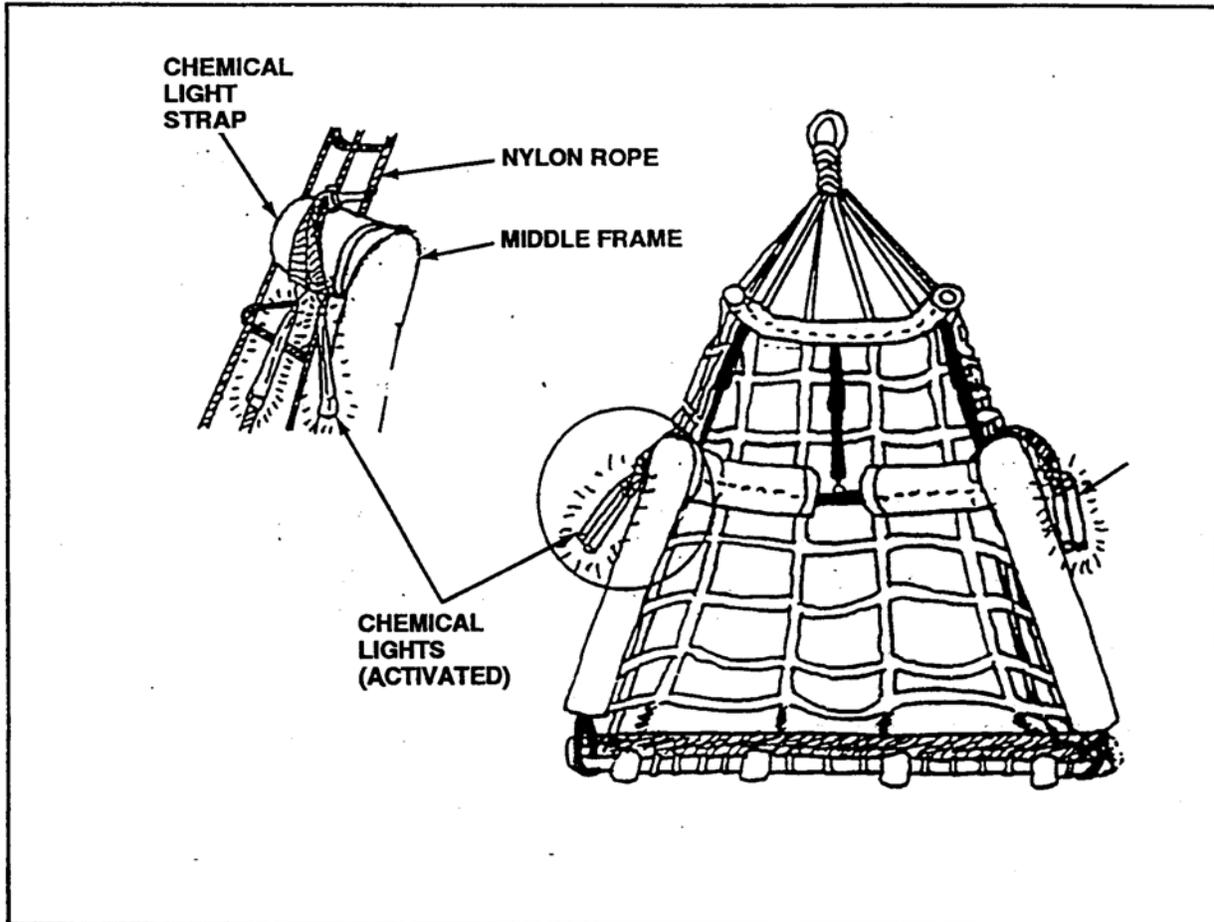


DIAGRAM SHEET 3.1-4

SAR MEDEVAC LITTER

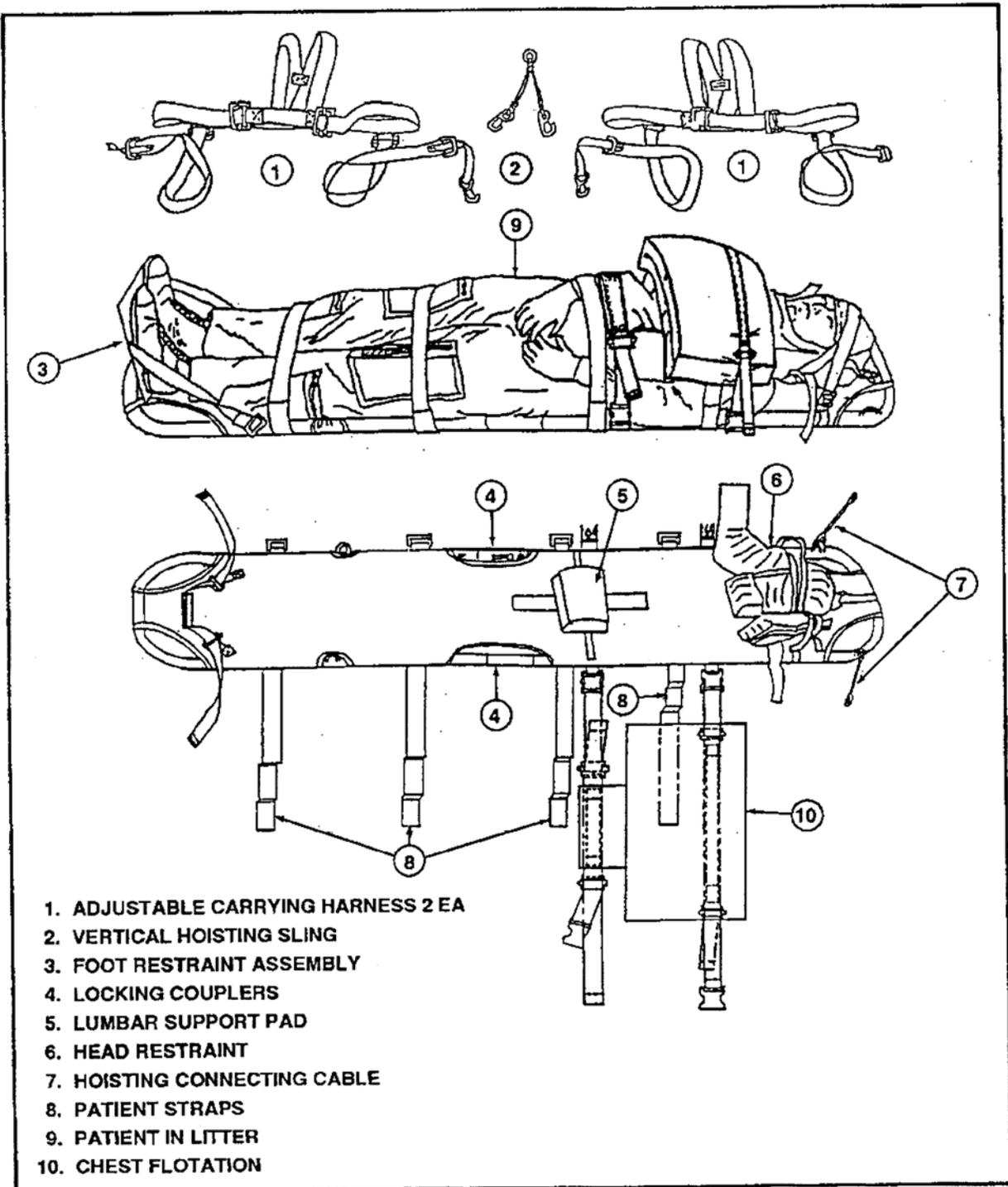


DIAGRAM SHEET 3.1-5

HOISTING SLING AND V-STRAP

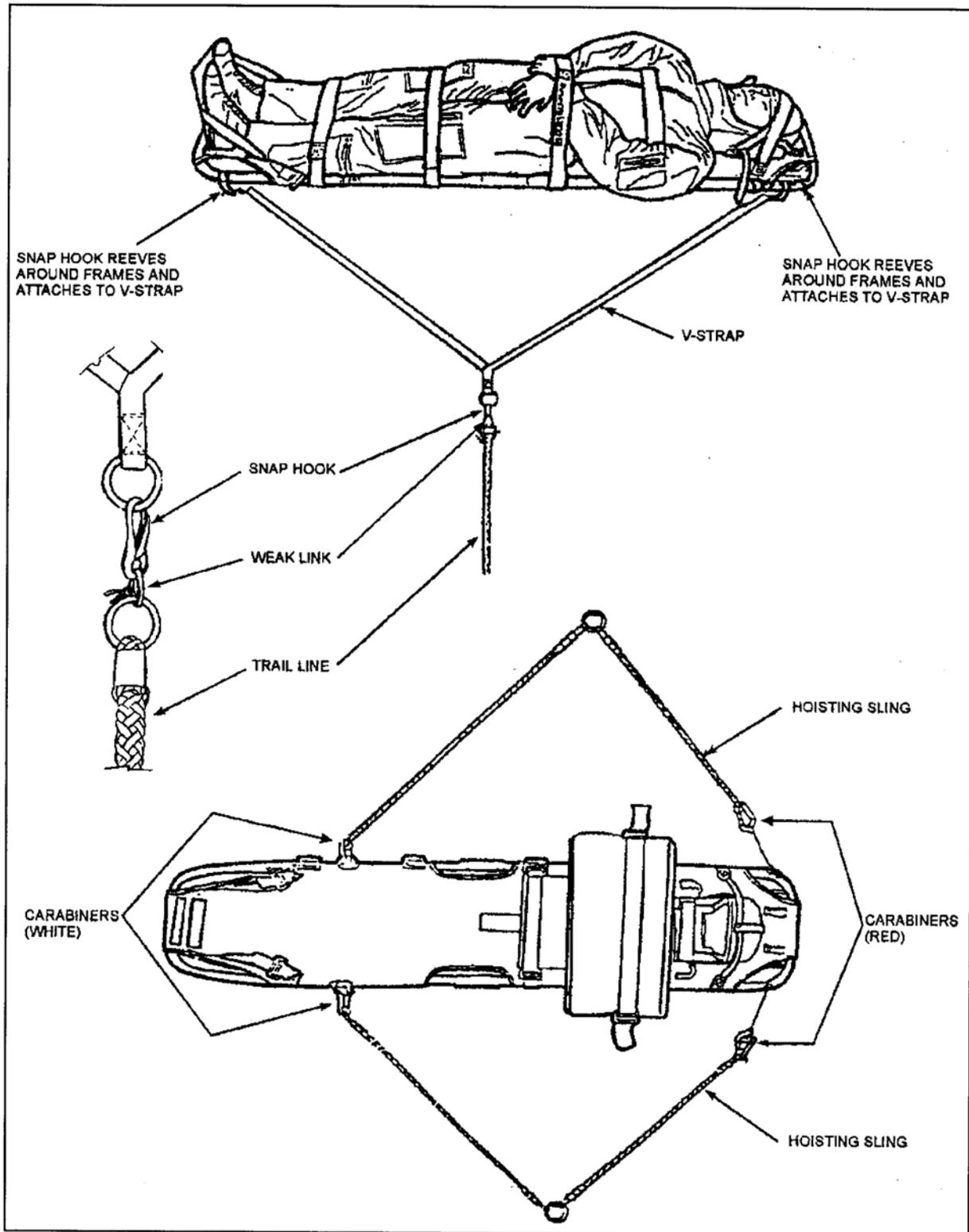


DIAGRAM SHEET 3.1-6

RESCUE LITTER  
(NIGHT-TIME ILLUMINATION)

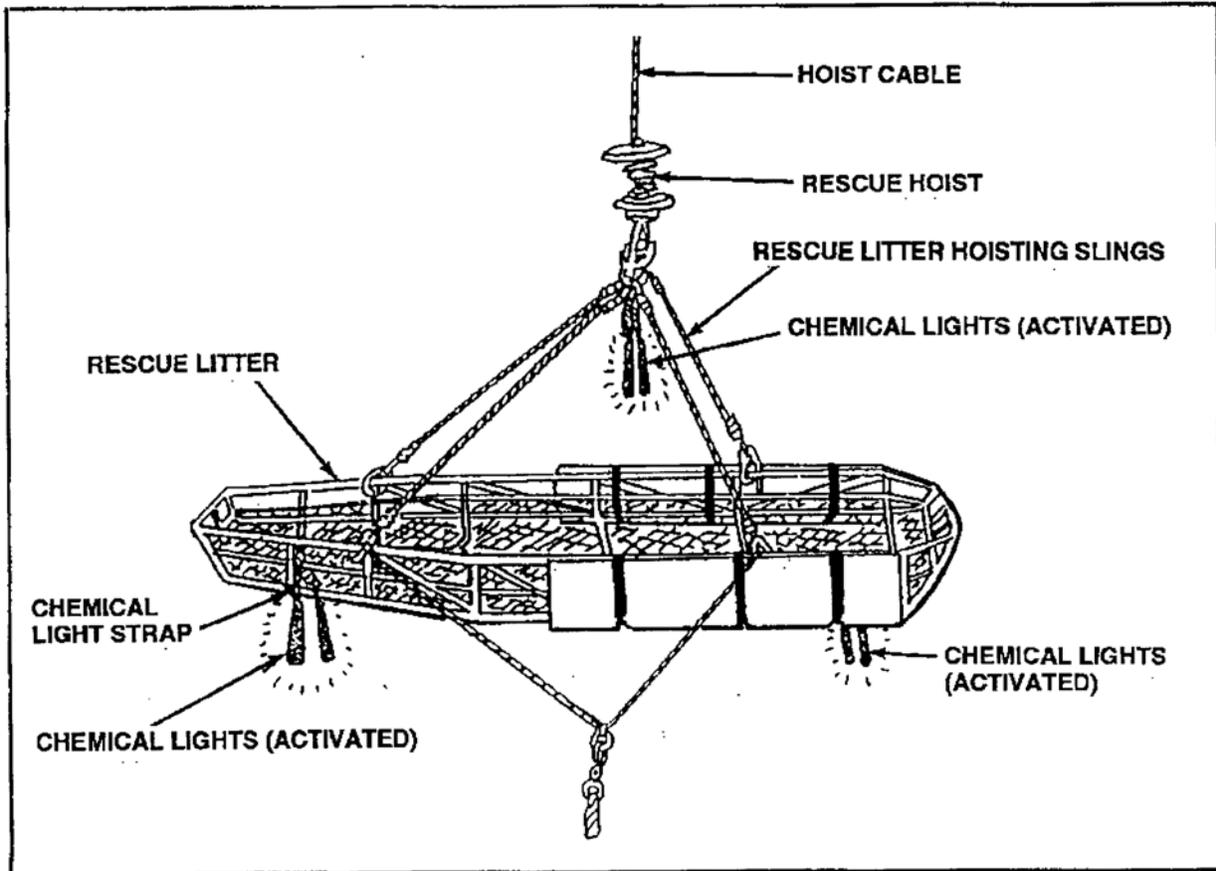


DIAGRAM SHEET 3.1-7

TRAIL LINE ASSEMBLY

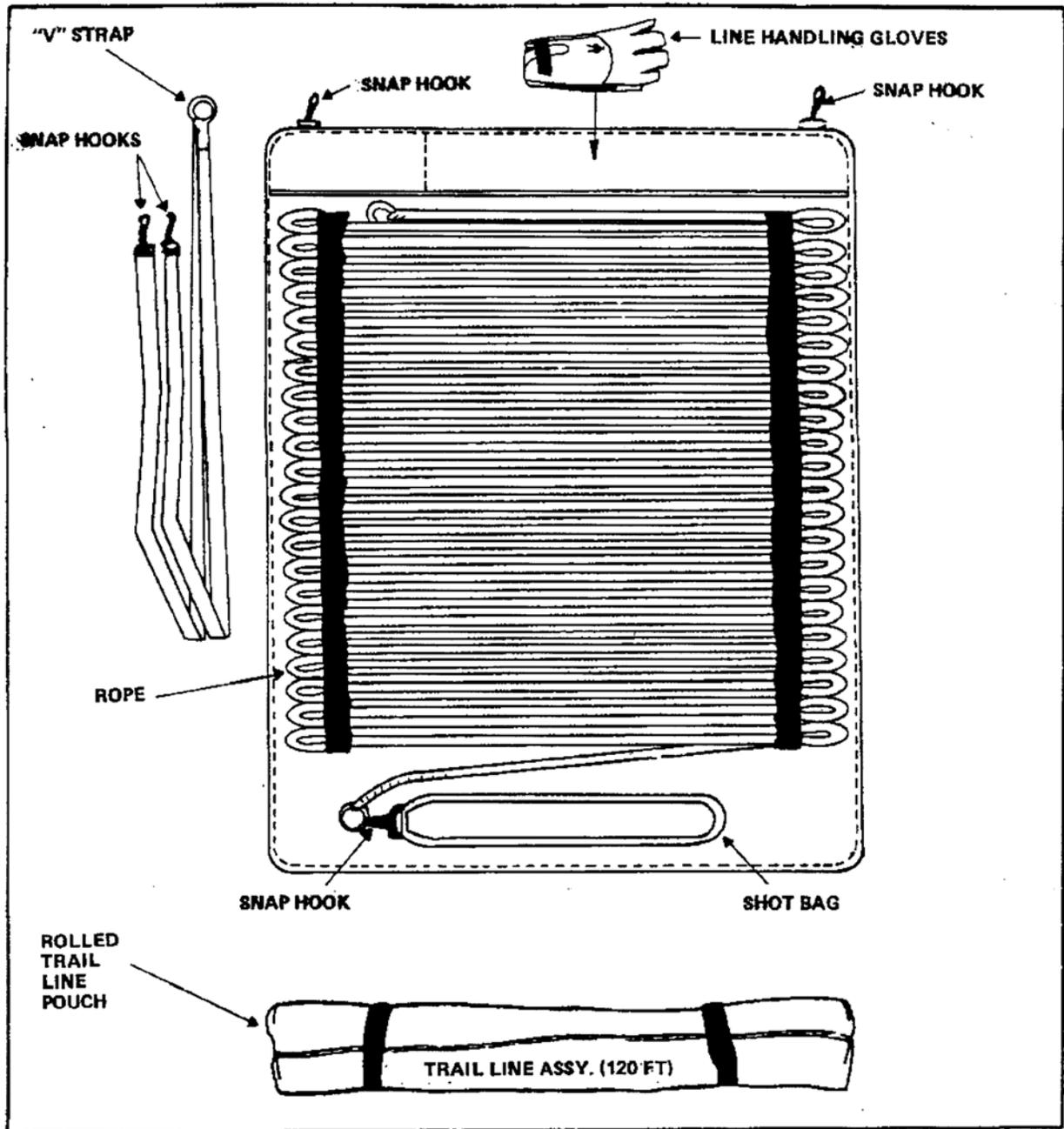


DIAGRAM SHEET 3.1-9

RESCUE LITTER HOISTING  
(SHIP)

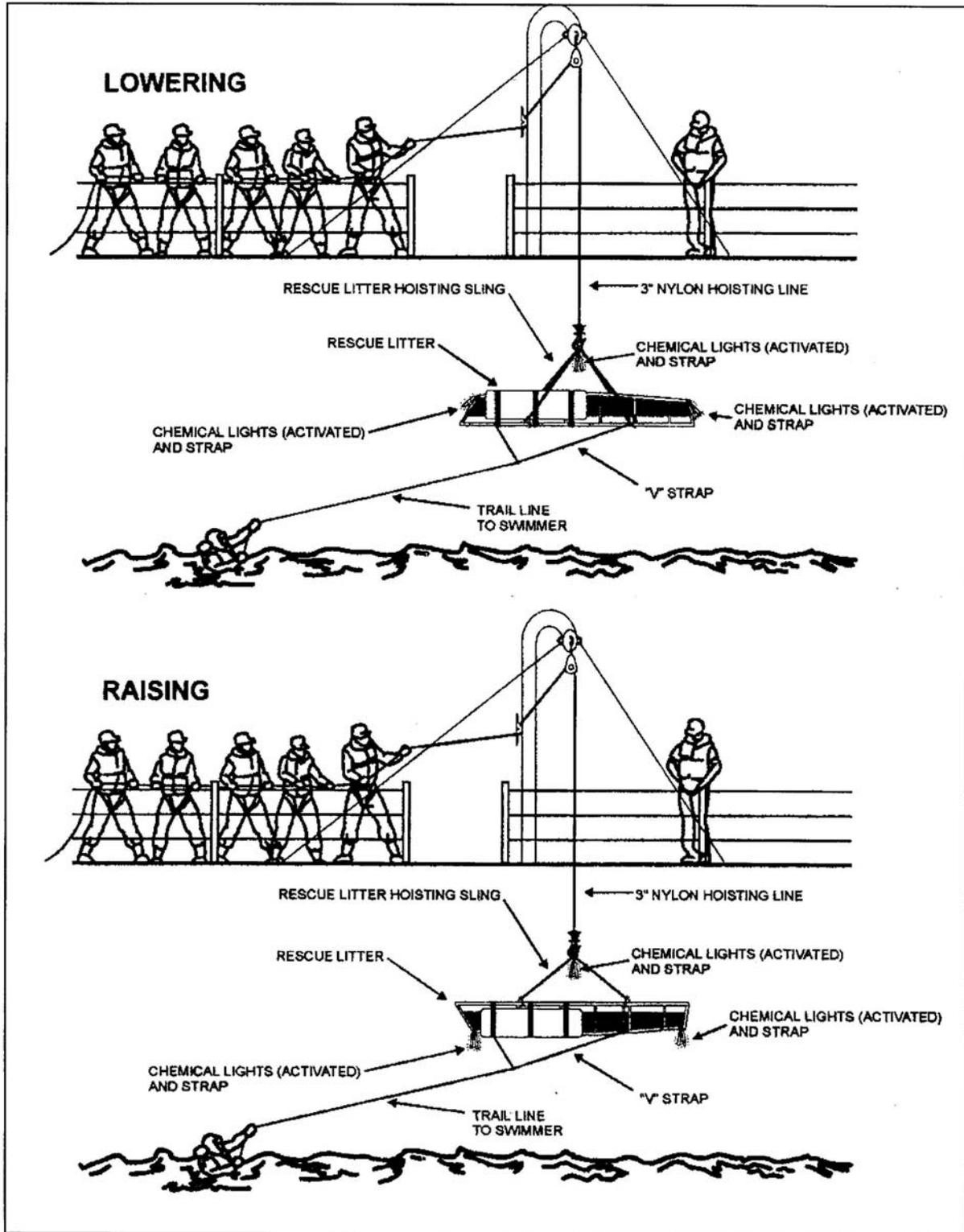


DIAGRAM SHEET 3.1-8

RESCUE LITTER HOISTING  
(HELICOPTER)

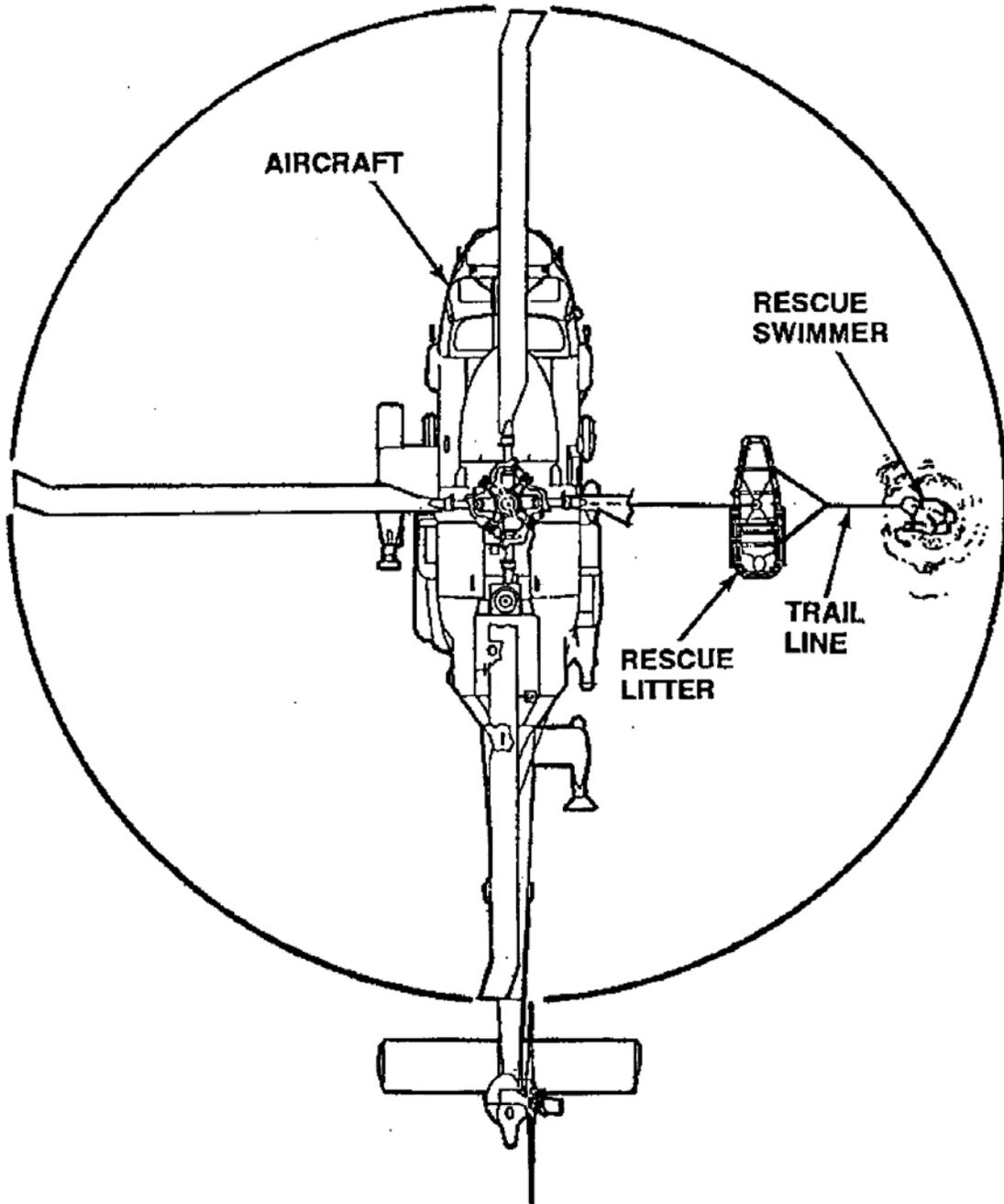
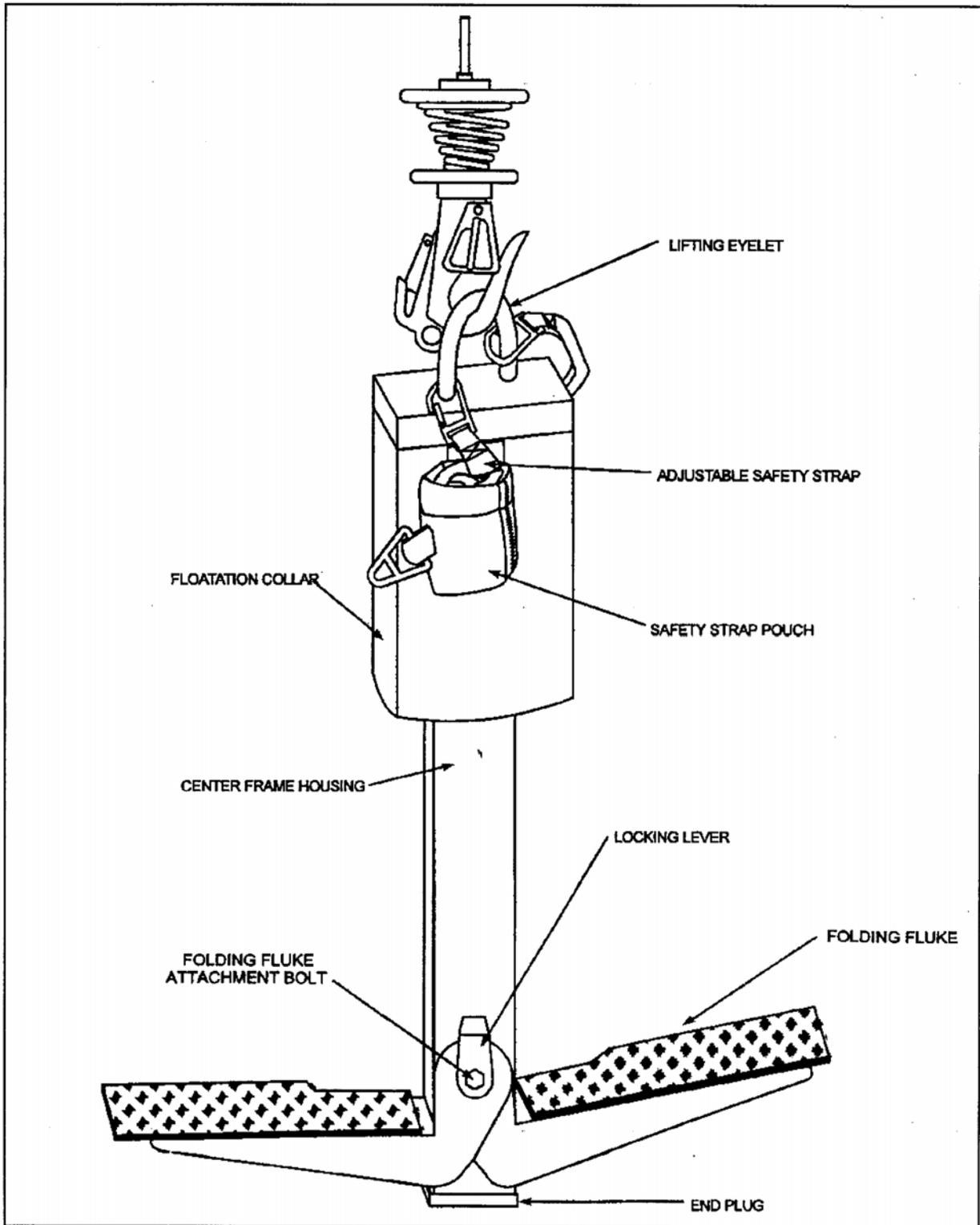


DIAGRAM SHEET 3.1-10

RESCUE SEAT



OUTLINE SEET 3.2-1

SURVIVOR MARKER/LOCATOR DEVICES

**INTRODUCTION**

Marking the survivor’s position is an important phase of the rescue operation. Accurate deployment of the marker helps to avoid losing sight of the survivor, and provides a reference when hovering. This information sheet describes each of the survivor marker/locator devices used by the rescue swimmer.

**ENABLING OBJECTIVES:**

- 3.4 Describe the purpose and hazards of the following survivor marker/locator devices per NWP 3-50.1:
  - a. MK-25 Marine Location Marker
  - b. MK-58 Marine Location Marker
  - c. Electric Marine Marker Light
  - d. MK-13/MK-124 MOD 0 Day/Night Distress Flare
  - e. MK-79 Pencil Flare
  - f. Signal Mirror
  - g. Sea Die Marker
  - h. AN/PRC-125 Radio

**TOPIC OUTLINE**

- A. MK-25 Marine Location Marker (Diagram Sheet 3.2-1)
  - 1. Launched by aircraft or ships to provide day or night reference points to the position of survivors.

**WARNING**

Never throw flare out when in hover because of valve plug possibly striking aircraft or personnel.

**WARNING**

Should fuel be observed or suspected to be present in the water, pyrotechnic devices SHALL NOT BE USED due to ignition hazards.

- 2. Produces smoke and a limited amount of light, fumes are caustic.

OUTLINE SHEET 3.2-1 (Continued)

SURVIVOR MARKER/LOCATOR DEVICES

3. Burn time is 10 to 20 minutes.
- B. MK-58 Marine Location Marker (Diagram Sheet 3.2-1)
1. Launched from surface craft or aircraft.
  2. This marker is intended for night/day use. Makes a long-burning, smoke and reference point marking on the ocean surface.
  3. It produces a yellow flame and white smoke.
  4. It burns for 45 minutes.
- C. MK-13/MK 124 MOD 0 Flares (Diagram Sheet 3.2-3)
1. This signal is used for day or night distress signalling as appropriate by personnel on land or at sea.
  2. Emits orange smoke for day use and red flames for night use.
  3. Burn time for each is approximately 20 seconds.
  4. MK-124 is the replacement for the MK-13 and is intended use is the same as MK-13, but is designed for single hand operation.
- D. MK-79 Signal Kit Personal Distress (Pencil Flare) (Diagram Sheet 3.2-3)
1. Intended to be used by downed air crewmembers or personnel in life rafts as a distress signalling device.
  2. Produces a single red star display at a minimum altitude of 250 feet.
  3. Burns for a minimum of 4.5 seconds.
- E. Electric Marine Marker Lights (Diagram Sheet 3.2-2)
1. Same as lights that are attached to life rings aboard ship.

OUTLINE SHEET 3.2-1 (Continued)

\SURVIVOR MARKER/LOCATOR DEVICES

2. Launched by aircraft or ships as a visual reference of survivor position.
  3. Poses no hazard to the swimmer.
  4. Battery powered and produces a flashing light.
  5. Can be used at rescue sites where fuel is in the water.
- F. Signal Mirror (Diagram Sheet 3.2-4)
1. Carried by pilots and crewmembers for day distress signaling.
  2. Poses no hazard to swimmers.
- G. Sea Dye Marker (Diagram Sheet 3.2-4)
1. Carried by pilots and crewmembers to provide day reference points for survivor location.
  2. No direct hazard, but undiluted dye crystals can stain and cause eye/skin irritation.
  3. Produces highly visible fluorescent green dye.
- H AN/PRC-125 Rescue Swimmer Radio (Diagram Sheet 3.2-5)
1. Provides reliable two-way communication between SAR platform and the Rescue Swimmer in the water.
  2. Designed as an optional method of communication device used as a back-up to standard Rescue Swimmer hand signals.
  3. May be used as an emergency signalling locator device should the Rescue Swimmer become separated from the SAR platform.
  4. Consist of the following components:
    - (a) Receiver/Transmitter

OUTLINE SHEET 3.2-1 (Continued)

SURVIVOR MARKER/LOCATOR DEVICES

PAGE 4 of 4

- (b) Control Unit and Cable
- (c) Speaker/Microphone
- 5. Receiver/Transmitter stows in LPU-28 storage pouch, cable exits top right corner of pouch. Control Unit attaches to enlarged velcro on right shoulder of LPU-28.
- 6. Operation is similar to the PRC-90. Function Switch has the following positions.
  - (a) Off
  - (b) 243.0 (MHZ) Voice
  - (c) 243.0 (MHZ) Beacon Only
  - (d) 282.8 (MHZ) Voice
- 7. Designed for hands free operation. Press to Talk (PTT) button can be operated with either hand or chin.
- 8. Effective Ranges:
  - (a) Swimmer to Swimmer - One nautical mile
  - (b) Swimmer to Aircraft:
    - (1) Up to six nautical miles with 100 ft Aircraft altitude.
    - (2) Thirty nautical miles with 5,000 ft Aircraft altitude.
- 9. Has optional earphone for use in high ambient noise areas.
- 10. Radio is completely waterproof, but does not float.
- 11. Receiver will function completely submerged as long as approximately one inch of the antenna is above the water surface.
- 12. Do not disassemble any part of the radio. This will break the watertight integrity of the radio and render it inoperative.

DIAGRAM SHEET 3.2-1

MK-25 (TOP) AND MK-58 (BOTTOM) MARINE LOCATION MARKERS PAGE 1 of 1

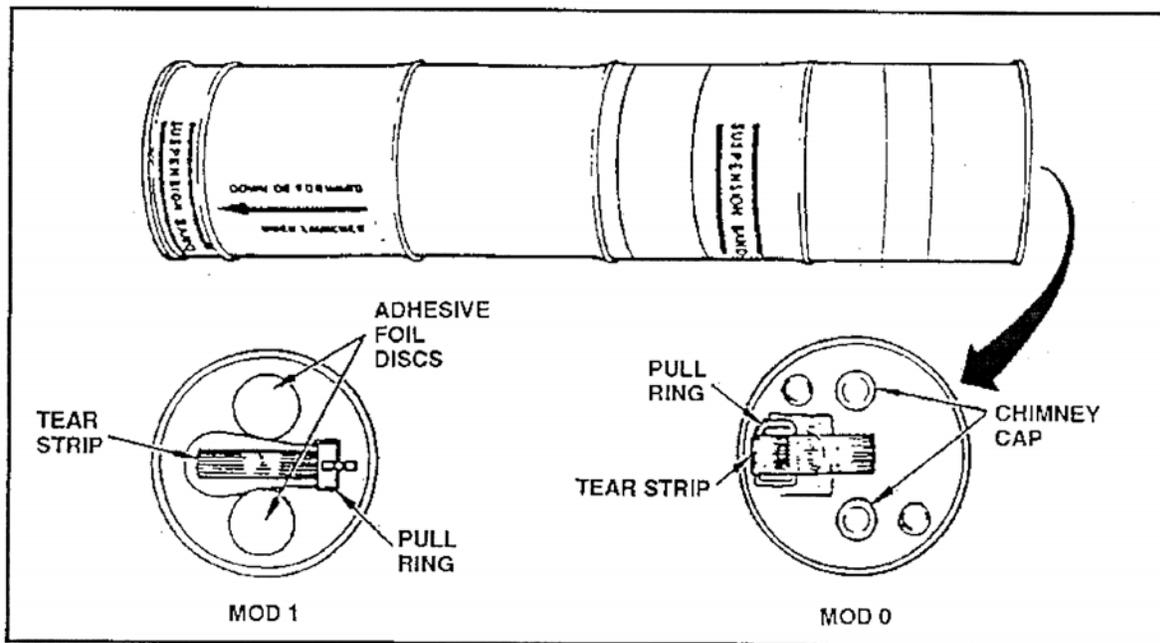
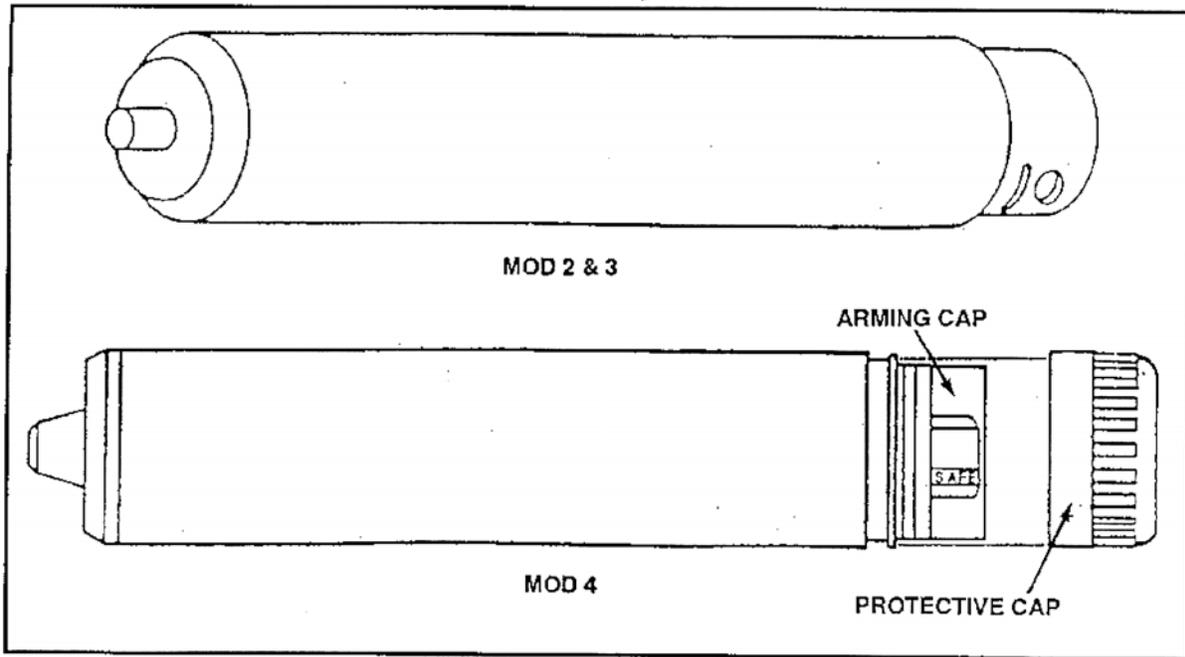


DIAGRAM SHEET 3.2-2

ELECTRIC MARINE MARKER LIGHT

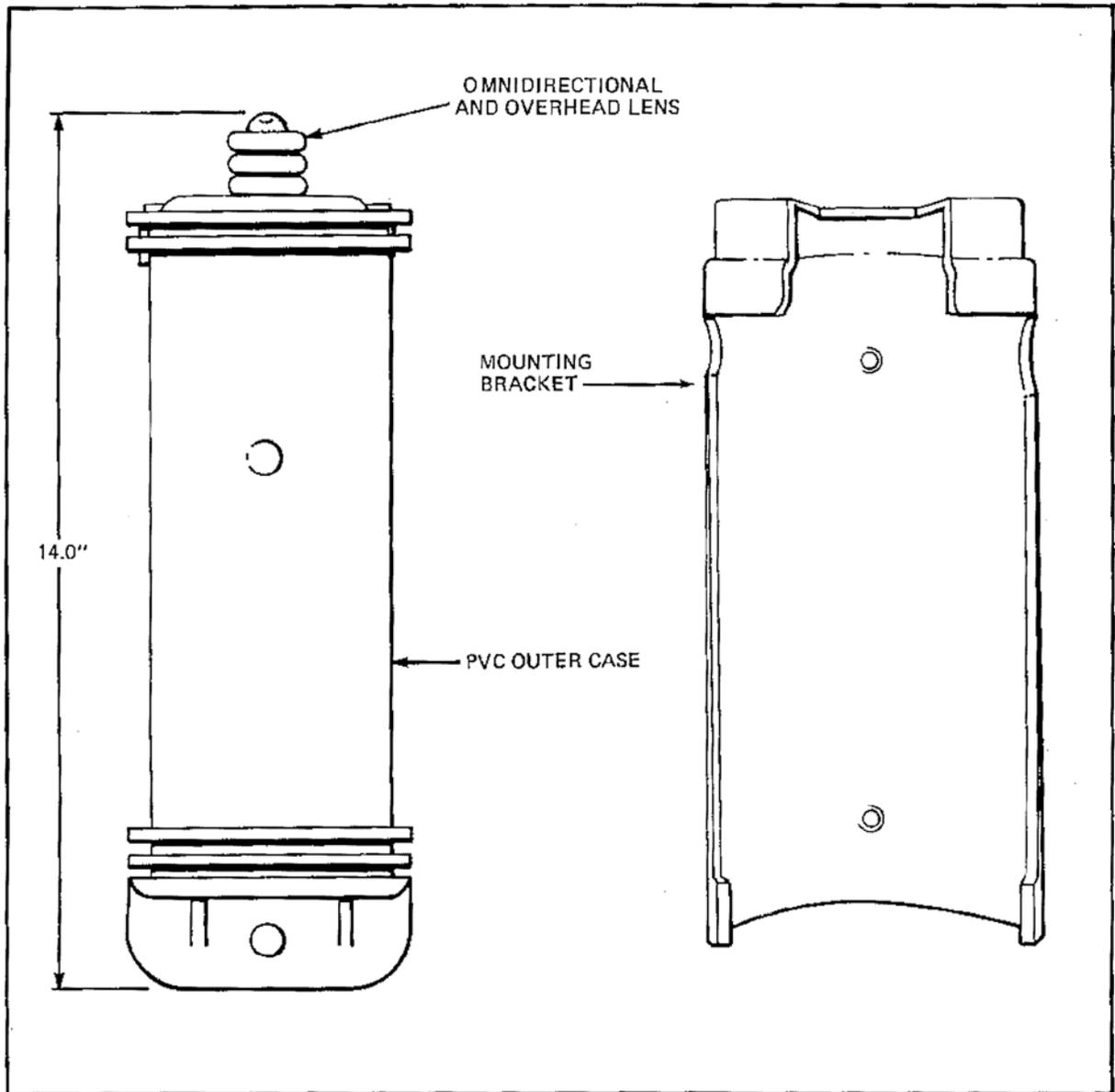


DIAGRAM SHEET 3.2-3

MK-13 MOD 0 DAY/NIGHT DISTRESS FLARE (Top) AND MK-79 PENCIL FLARE  
(Bottom)

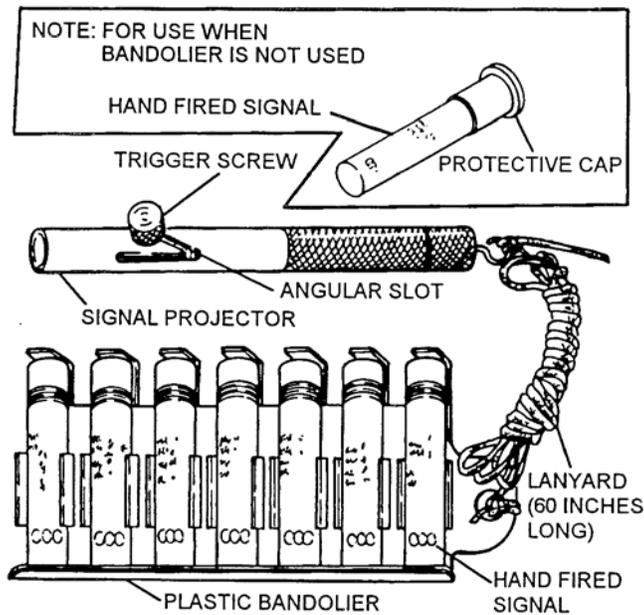
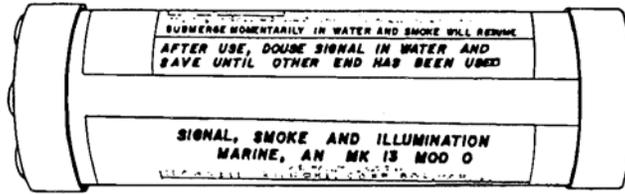


DIAGRAM SHEET 3.2-4

SIGNAL MIRROR (Top) AND SEA DYE MARKER (Bottom)

PAGE 1 of 1

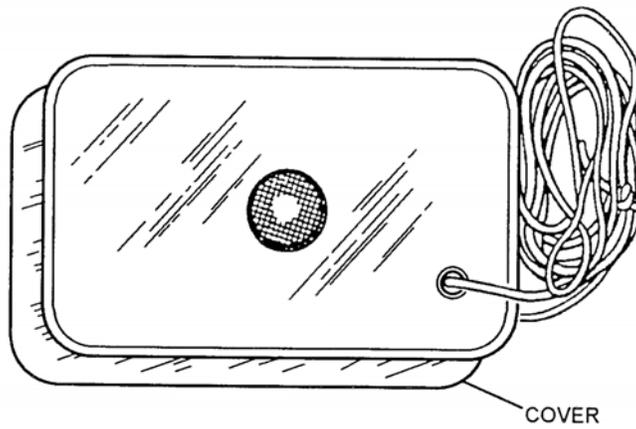
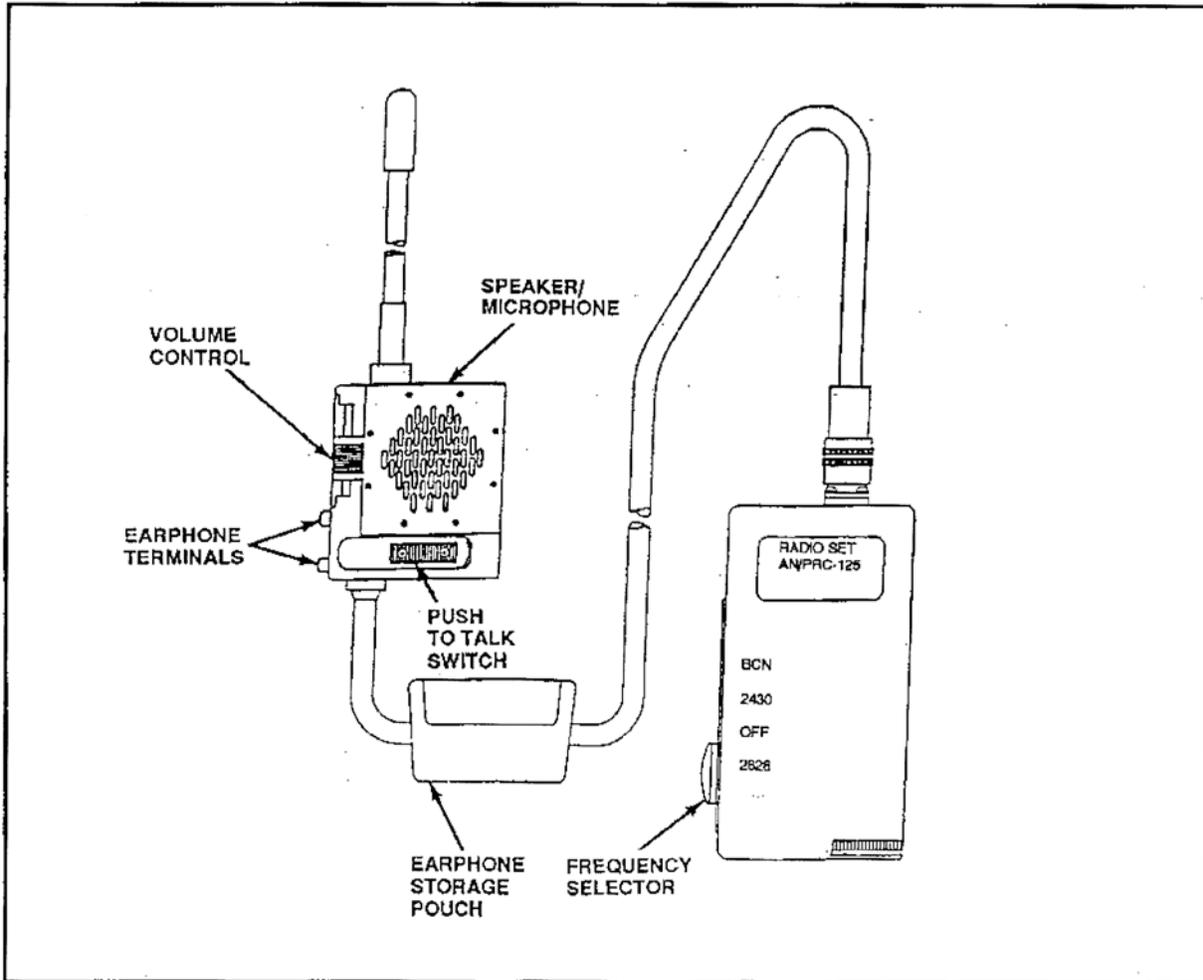


DIAGRAM SHEET 3.2-5

AN/PRC-125 RADIO



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OUTLINE SEET 3.3-1

SAR PUBLICATIONS AND REPORTS

**INTRODUCTION**

As a rescue swimmer, there are several publications which will aid you in doing your job. These pubs. provide needed information about all phases of search and rescue. By becoming more familiar with the manuals you will become a well-rounded rescue swimmer.

**ENABLING OBJECTIVES:**

- 3.5 Identify the short title and content of publications applicable to a rescue swimmer.
- 3.6 Complete a Rescue Report SAR form 3-50.1/1 when given a rescue scenario.

**TOPIC OUTLINE**

A. NAVAIR 13-1-6.5, Rescue and Survival Equipment

Purpose of each volume is to provide technical information related to configuration, application, function, inspection, and maintenance of a particular category of aircrew safety and survival equipment.

B. ATP-10, NATO SAR Manual

- 1. Manual deals with operations based upon the doctrine of search and rescue. It presents the techniques and procedures for Allied SAR problems.
- 2. Rescue swimmers should be aware of this manual and familiarize themselves with it.

C. NWP 42, Shipboard Helicopter Operating Procedures

- 1. This publication sets forth the mandatory operational procedures and training requirements for the employment of helicopters.
- 2. Chapter 4 - General Helicopter Rescue Operations is probably the chapter in the NWP 42 most often referred to. It contains:
  - a. Paragraph 4.1.4 - SAR requirements for Shipboard operations.

OUTLINE SHEET 3.3-1 (Continued)

SAR PUBLICATIONS AND REPORTS

- b. Appendix H - Specific Helicopter passenger egress diagrams
- D. Joint Pub 3-50, National Search and Rescue Manual
- 1. Implements national SAR plan and promulgates U.S. Federal Forces, Military and Civil in coordinating or participating in SAR operations.
  - 2. Manual provides common procedures, techniques, and terminology so that any military and civilian combination of forces can effectively accomplish SAR missions.
- E. NWP 3-50.1, Naval Search and Rescue Manual.
- 1. The most frequently used SAR publication.
  - 2. This manual is intended to promote and maintain standardization of SAR procedures and techniques within the U.S. Navy.
  - 3. These procedures shall serve as a basis for SAR evaluation programs. Therefore, it is essential that this manual be maintained and readily available to unit personnel.
  - 4. Items covered in this manual are:
    - a. Search and Rescue Equipment
    - b. Aviation Maritime SAR Procedures
    - c. Rescue Swimmer Procedures
    - d. Surface Vessel SAR Procedures
    - e. SAR Medical Procedures
    - f. Rescue Report (SAR Form 3-50.1/1)

OUTLINE SHEET 3.3-1 (Continued)

SAR PUBLICATIONS AND REPORTS

F. NWP 3-22.5, SAR TAC

1. Promotes standardized, efficient, and sound SAR tactics.
2. Every SAR capable ship and aircraft carries this publication.

G. OPNAVINST 3130.6, Naval Search and Rescue (SAR) Standardization Program

1. Purpose: To implement standardization in Naval (SAR) policies, procedures, training and evaluation programs.
2. SAR evaluations aviation units.
3. SAR evaluations surface units.
4. Annual requalification.

OUTLINE SHEET3.3-1 (Continued)

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JOB SHEET 3.3-1

RESCUE REPORT SAR FORM 3-50.1/1

**INTRODUCTION**

Rescue reports are required any time a Navy asset is used for search and rescue. Detailed knowledge of the required data fields is necessary to accurately complete the report. An accurate and detailed report is the only way to give feedback to the Navy SAR System. Ensure your people understand the importance of timely and accurate reports.

**EQUIPMENT:**

1. NWP 3-22.5, SAR TACAID
2. NWP 3-50.1 REV. A, Naval Search and Rescue Manual
3. SAR Scenario
4. SAR form 3-50.1/1

**REFERENCES:**

1. NWP 3-22.5, SAR TACAID
2. NWP 3-50.1 REV. A, Naval Search and Rescue Manual

**JOB STEPS:**

1. Complete a SAR form 3-50.1/1 using the following rescue scenario:

It is 1400, you are at work, looking forward to being relieved by the PM SAR Crew at 1630 and heading home. Just as you really start drifting off into your “evening to come” the OPS Boss storms into the room and tells you to man—up; there is a SAR going down. 10 minutes later you are dressed for rescue in the back of your H—3 as it lifts off to head for the scene.

The scene is approximately 90 miles away about 2 miles off shore. The first report from the Air Force Rescue Center that requested your help was of an Inland Ferryboat that capsized with approximately 100 - 200 people on board.

Upon reaching the coordinates given you by the Rescue Center you begin your search at 1500. 10 minutes into your search you, as a crew, discuss the probability that the coordinates were wrong since you haven’t seen a thing and there were supposedly hundreds of people in the water. The HAC decides to at least give it another 20 minutes. At 1530 you spot a swamped sailboat tied to a navigation buoy. There are six civilians on the buoy. The winds are from the North at approximately 30 knots and the sea is rough with breaking 15 - 20 foot waves. The people on the buoy are taking a real beating.

## JOB SHEET 3.3-1 (Continued)

RESCUE REPORT SAR FORM 3-50.1/1

PAGE 2 of 5

It is determined that due to the high Sea State you will be lowered into the water via the hoist. You soon find yourself in the water and working to approach the buoy without being “helped onto it” by a wave. You make your way up to it and find 4 males and 2 females all clinging to a stanchion in the middle of the buoy.

One man is elderly and looks very weak. The others are in their 30’s and appear to be doing a little better. You briefly explain the use of the rescue strop the best you can (just in case you don’t make it back) and instruct the elderly man to enter the water with you. He does so by leaping onto your head into the classic front head hold. You disable him by performing a flawless release and quickly comes under control.

As you turn to signal the helo your stomach sinks. The crewchief has fouled the hoist cable in the mast of the sailboat! You take your survivor onto the boat in a crosschest carry and work the cable free. This is not easy due to the Sea State. You finally get away from the boat, and the buoy, and you have the hoist cable. You then notice a steady stream of hydraulic fluid streaming down the cable. Needless to say, you hook-up with the survivor and get out of dodge. After getting in the helo you notice the crewchief is blind with hydraulic fluid (his visor is up!) You now take over the hoisting. You retrieve the next three survivors uneventfully.

While trying to retrieve survivor #5, the flood hover lights are overheating and shutting off (it is getting dark). This makes it quite difficult to spot the survivor in the water but you manage to get #5 anyway.

As you move into get survivor #6, he makes a leap for the strop and disappears into the surf. You leave the strop in the water and frantically search for him (the stinking lights going on and off doesn’t help!); suddenly you feel something on the hoist cable (just like fishing). As you bring the hoist cable up the survivor is hanging in it by one arm. You recover him that way.

At 1720 you depart the scene with 6 survivors and head for home. You land at 1805 and help them into the ambulance.



JOB SHEET 3.3-1 (Continued)

RESCUE REPORT SAR FORM 3-50.1/1

RESCUE REPORT (SAR FORM 3-50.1/1)				2 of 2	
11.	Personnel Recovered Data (Place total number in appropriate boxes)				
	Number of personnel recovered			Number of DOD personnel	
	Number of personnel not recovered			Number of non-DOD personnel	
	Number of personnel recovered by other means			Number of personnel requiring medical attention	
12.	Medical Difficulties (Place number of afflicted personnel in appropriate boxes)				
	Respiratory Problems		Bleeding		Anaphalaxis
	Hypothermia		Burns		Shock
	Broken Bones		Bends		Blunt Trauma
	Dismemberment		Air Embolus		Neurological
	Spinal Injury		Internal Bleeding		Dead on Arrival
	No Pulse		Animal Bite		Other (Explain)
12a.	Distress Vessel/Aircraft:				
13.	Distress Narrative				
14.	Search Narrative				
15.	Recovery Narrative				
16.	Problems Encountered				
17.	Recommendations				
18.	Submitting Official:		Date:		POC:
19.	Complete if Rescue Swimmer Deployed:				
a.	Parachute Entanglement		b.	Swimmer Deployment — Provide Number for Each Type	
	<input type="checkbox"/>	Ballooned Canopy		<input type="checkbox"/>	Jump 10/10
	<input type="checkbox"/>	Suspension (Shroud) Line		<input type="checkbox"/>	Jump 15 feet
	<input type="checkbox"/>	Other (Explain under 16 and 17)		<input type="checkbox"/>	Hoist
	<input type="checkbox"/>			<input type="checkbox"/>	Small Boat
	<input type="checkbox"/>			<input type="checkbox"/>	Other (Explain)
Explain Other:					
c.	Rescue Swimmer Problems/Recommendations				

JOB SHEET 3.3-1 (Continued)

RESCUE REPORT SAR FORM 3-50.1/1

1. Indicate aircraft reporting custodian, ship or facility controlling search and rescue unit (SRU).
2. Supply the specific type of vehicle; e.g., SH-3, DDG, motor whaleboat, etc.
- 2a. Actual number of flight hours expended on the SAR case by the SRU.
- 2b. Actual total number of steaming hours expended on the SAR case by the SRU.
- 2c. Actual total number of aircraft sorties expended in the SAR case by the SRU.
- 2d. Actual total number of ship sorties expended in the SAR case by the SRU.
3. Number by calendar year, i.e., 98-01 would be the first report for 1998.
4. Indicate the military command, government agency, or civilian activity requesting assistance.
5. Provide the U.S. Air Force Rescue Coordination Center mission number or Coast Guard unit case number, if assigned.
- 6a. The complete date-time group of each mission phase is to be provided in the appropriate blank. (Use local time.)
- 6b. Self explanatory.
7. Check all appropriate blocks that apply to this mission.
8. Self explanatory.
- 9a. Rank/rate, if military.
- 9b. Billet; pilot, copilot, swimmer, hospital corpsman, etc.
- 10a. Self explanatory, but be sure to justify equipment "needed" in recommendations section (block 17).
- 10b. Self explanatory, but be sure to explain in detail under problems encountered section (block 16).
11. Fill in appropriate number in each block.
12. Fill in each block with number of personnel in each category.
- 12a. Fill in designation of the distress craft or search target; e.g., F-14, E-2C, Tugboat "Mary J," etc.
13. Include a brief narrative of distress situation that initiated the mission, including aircraft and/or vessel types, location, weather, and how the rescue units were alerted.
14. Include SRU SAR posture/alert status and search tactics. Explain how the search was planned and, if applicable, search patterns, track spacing, sweep widths, and probability of detection for each search; plus planning assumptions (i.e., LR1 liferaft with a drogue for an overwater ejection).
15. Explain how the recovery was effected. This section may also be used to provide amplifying comments regarding rescue equipment used and medical treatment provided.
16. Explain any difficulties encountered; i.e., personnel, weather, mechanical, communications, etc.
17. These should be brief and explicit.
18. Self explanatory.
- 19a. Self explanatory.
- 19b. Indicate number of applicable deployments in number block.
- 19c. Explain in detail any appropriate rescue swimmer problems/recommendations.

**Note**

Do not submit this Instruction sheet to HC-3.

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OUTLINE SHEET 3.4-1

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
HARNESSES, AND ASSOCIATED HARDWARE

**INTRODUCTION**

This information sheet will familiarize the Rescue Swimmer with the oxygen systems, harnesses, hardware, and all survival equipment involved in an aviator's rescue. All this information will simplify a rescue swimmer's ability to perform a successful rescue.

**ENABLING OBJECTIVES:**

- 3.7 Perform the procedures for removing the following assemblies:
  - a. Helmet assemblies
  - b. RSSK/SKU assemblies
  - c. Oxygen mask assemblies
  - d. Survival vest/flotation assemblies
  
- 3.8 Operate hardware associated with parachute harnesses.
  
- 3.9 Remove parachute harnesses.

**TOPIC OUTLINE**

- A. Navy Aircrew Survival Equipment
  - 1. Anti-Exposure Suits
    - a. Anti-Exposure Suits and Dry Suits are worn under the flight suit.
    - b. Imperial Wetsuit (Quick-Donning)
      - (1) Bright orange in color.
      - (2) Worn over the flight suit clothing.
  
  - 2. Flight Helmets
    - a. HGU-33 through 52 Series Helmet (Diagram Sheet 3.4-1)
      - (1) Primary Navy helmet in use today by fixed wing aircrew.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
HARNESSES, AND ASSOCIATED HARDWARE PAGE 2 of 9

- (2) HGU-33 is basic helmet, different number designations denote specific aircraft applications (i.e., HGU-33P is for F-18'S).
  - (3) May be configured with one or two visors
    - (a) Tinted
    - (b) Clear
  - (4) Oxygen mask connects with Bayonet fittings.
  - (5) HGU-37 helmet assembly has a VTAS (Visual Target Acquisition) sight assembly mounted on the visor and has separate sensor electrical cable and communication cord on the rear of the helmet that must be removed/cut before removing RSSK/SKU.
- b. SPH-3C, and HGU-54 through 64 Series Helmet (Diagram Sheet 3.4-2)
- (1) This is the primary Navy helmet for rotary wing aircrews.
  - (2) SPH-3C is the basic helmet, different number designations denote specific helicopter applications (i.e., HGU-54 is for the AH-1).
  - (3) Provides better sound attenuation from high frequency vibrations than the HGU-33 Series helmet.
  - (4) Dual Visor - tinted and clear.
3. MBU-12 Series Oxygen Mask (Diagram Sheet 3.4-3)
- a. Form fits to face.
  - b. Attaches to helmet with bayonet fitting.
  - c. Oxygen supply hose connects to RSSK/SKU or Aircraft console.
  - d. To disconnect hose from RSSK/SKU, lift the knurled locking ring and pull firmly on the supply hose.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
HARNESSES, AND ASSOCIATED HARDWARE PAGE 3 of 9

- e. The mask should always be disconnected from the helmet first to eliminate any possibility of suffocating the aircrewman.
4. Rigid Seat Survival Kit/Seat Kit Unit (RSSK/SKU) (Diagram Sheet 3.4-4)
- a. Attaches aviator to ejection seat.
  - b. Has a bottom, which separates from the top portion by pulling yellow and black handle on right hand side.
  - c. Contains LR-1/LRU-18, emergency locator transmitter, and other items of survival gear.
5. Survival Vest
- a. SV-2 Series.
  - b. Nylon multi-pouched vest containing general and medical survival items.
  - c. Those used by helicopter and propeller aircraft, have a chest strap and a lifting V-ring for hoisting sewn into the vest.
  - d. Designed to incorporate the LPU 21-24 and FLU-8 Series flotation gear. Can be inflated by CO<sub>2</sub> or orally.
  - e. Inflation of the LPU is done by pulling the beaded toggles at the waist.
  - f. The FLU-8A/P equipped life preserver will have four warning labels that will read:

**WARNING**

Automatic inflation device installed for use in ejection seat aircraft only.

- g. The FLU-8A/P is a self-contained Cartridge Activated Device (CAD) which provides automatic inflation of the life preserver upon water entry.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
 HARNESES, AND ASSOCIATED HARDWARE PAGE 4 of 9

It is used by aircrew who wear the PCU parachute restraint harness assembly flying ejection seat equipped aircraft. The automatic activator is designed to prevent drowning in the event the crew member is incapacitated and/or is not able to manually activate the LPU. The FLU-8A/P will inflate the life preserver with 8-15 seconds upon immersion into seawater. The FLU-8A/P is a backup system only. The primary mode of life preserver inflation is manual.

6. Flight Deck Personal Vest (MK-1/LPU-30) (Diagram Sheet 3.4-5)
  - a. Inflated by CO<sub>2</sub> or orally.
  - b. Pull cord for CO<sub>2</sub> inflation on right hand side at bottom of vest.
  - c. Oral inflation on right side of chest.

B. Air Force Aircrew Survival Equipment

1. HGU-55 Series Helmet
  - a. Primary flight helmet used by the Air Force.
  - b. Identical to Navy Fixed Wing Helmet (HGU-33). (Diagram Sheet 3.4-1)
  - c. Oxygen mask attaches via bayonet fittings.
  - d. May be configured with a single soft visor or a dual hard visor.
2. MBU-12 Oxygen Mask Assembly
  - a. Identical to Navy Oxygen mask. (Diagram Sheet 3.4-3)
  - b. Bayonet fittings secure mask to helmet.
  - c. Oxygen mask supply hose connects to a manifold block mounted on the right shoulder strap of the CW-17 Torso Harness. To disconnect the hose turn the locking ring counter-clockwise while pulling on the hose.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
HARNESSES, AND ASSOCIATED HARDWARE PAGE 5 of 9

- d. The mask should always be disconnected from the helmet first to eliminate any possibility of suffocating the aircrewman.
3. Seat Survival Kit
- a. Identical to Navy RSSK. (Diagram Sheet 3.4-4)
  - b. Attached to the aircrewman's parachute harness by quick-disconnect buckles. These are released by depressing a button in the center of the buckle, as in automobile seat belts.
4. SRU-21 Series Survival Vest
- a. Nylon multi-pouched vest containing general and medical survival items.
  - b. One piece garment worn independently of all other survival equipment.
5. Flotation
- a. LPU-9 Series
    - (1) Worn in conjunction with CW-17 Torso Harness by aircrew flying ejection seat equipped aircraft.
    - (2) One piece garment worn over the torso harness and survival vest.
    - (3) Consists of two separate cells, mounted waist high one above each hip. Each cell has its own CO<sub>2</sub> cartridge and activation toggles. Can also be inflated manually with oral inflation tube.
  - b. LPU-2 and LPU 10 Series
    - (1) Worn in conjunction with BA-18/22 Parachute Harness by aircrew's flying larger fixed wing aircraft (i.e., C-130, C-141, C-5, KC-10) not equipped with ejection seats.
    - (2) One piece garment worn under the parachute harness.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
 HARNESES, AND ASSOCIATED HARDWARE PAGE 6 of 9

- (3) Consists of two separate cells, mounted waist high one above each hip. Each cell has its own CO<sub>2</sub> cartridge and activation toggles. Can also be inflated manually with oral inflation tube.

C. PCU-Parachute Restraint Harness Assembly (Diagram Sheet 3.4-6)

- 1. Worn by Carrier-based tactical jet aircrew who use ejection seats for emergency egress.
- 2. The harness is a self contained one piece garment that can have pockets for survival equipment sewn directly into the harness. Flotation is also attached to the harness.
- 3. A gated D-ring for lifting is located under the right koch fitting.
- 4. The male portion of the koch fitting assembly is located on the right and left upper chest area.
- 5. Lap belt with mini-koch fittings is located on the front lower panel. Used to secure the RSSK/SKU to the survivor.
- 6. Friction adapter is used for chest strap adjustments.
- 7. Gated D-ring is used to attach the aviator to the double rescue hook for hoisting.
- 8. Koch fittings and mini-koch come in male and female assemblies. (Diagram Sheet 3.4-7)
  - a. Koch fittings used to attach parachute to the parachute restraint harness. The male end of the Koch fitting is attached to the PCU-parachute restraint harness, the female end is attached to the riser assembly.
  - b. Mini-koch fittings used to attach lap belt assembly to the rigid seat survival kit (RSSK/SKU).

D. NB-6/8 Back Pack Type Parachute with Quick Donning Harness (Diagram Sheet 3.4-8)

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
HARNESSES, AND ASSOCIATED HARDWARE

PAGE 7 of 9

1. Used by larger land based fixed wing aircraft (e.g., C-130, P-3).
  2. Normally only worn in anticipation of bailout. Harness is easily adjusted to any crew member.
  3. Harness is worn over the SV-2 and flotation.
  4. Secured/Removed by the use of the three quick ejector snaps and "V" rings, one at the chest, and one for each leg. (Diagram Sheet 3.4-9)
- E. NB-6/8 Harness Hardware (Diagram Sheet 3.4-8)
1. Parachute harness strap adapter used for shoulder adjustments.
  2. Friction adapter is usually used for chest strap and adjustments.
  3. Three quick ejector snaps are connected to three "V" rings on leg straps and chest strap.
    - a. Two types of Quick Ejector Snaps (Diagram Sheet 3.4-9)
      - (1) Friction
      - (2) Non-friction
- F. Seawater Activated Release System (SEAWARS) (Diagram Sheet 3.4-10)
1. Designed to automatically release the parachute upon immersion in seawater.
  2. Is a back-up system intended to aid the survivor if injured, or where there is not enough time to manually release parachute as in low altitude ejection.
  3. A totally self-contained, automatic release system.
  4. Will separate the canopy release fittings from the parachute risers releasing the parachute within two seconds after complete immersion into seawater.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
 HARNESES, AND ASSOCIATED HARDWARE PAGE 8 of 9

5. Consists of two SEAWARS units that weigh seven and one half ounces each.
6. Installed on the female end of the koch fittings on the parachute risers. If SEAWARS fails to operate, the koch fittings can be released by normal means. The SEAWARS does not pose any threat to the rescue swimmer.

G. USAF Parachute Harnesses and Hardware

1. CW-17 Torso Harness
  - a. Worn by tactical jet aircrew who use ejection seats for emergency egress. Similar in appearance to the Navy NB-6/8 quick donning harness.
  - b. Secured in place by three quick ejector snaps and "V" rings, one at the chest, and one for each leg.
  - c. Survival Vest and flotation are worn over the torso harness. The parachute must be disconnected where the riser attaches to the harness.
  - d. Harness hardware varies with aircraft.
    - (1) A-10, F-4, and F-15 use a Koch fitting similar in appearance and operation to what the Navy uses. On USAF Torso Harness, female end is attached to harness, and the male end is attached to the parachute riser. May have SEAWARS installed.
    - (2) F-16 uses the Frost fitting to attach the aviator to the parachute. Male end is attached to the harness, female end is attached to parachute risers.
    - (3) F-5 and T-38 use the J-1 Capewell fitting.
2. BA-18/22 Quick-Donning Back Pack Type Parachute
  - a. Used by larger fixed wing aircraft (e.g., C-130, C-141, C-5, KC-10) not equipped with ejection seats.
  - b. Identical in appearance to the Navy NB-6/8 Back Pack type parachute.

OUTLINE SHEET 3.4-1 (Continued)

NAVY AND AIR FORCE AIRCREW SURVIVAL EQUIPMENT,  
HARNESSES, AND ASSOCIATED HARDWARE PAGE 9 of 9

- c. Normally only worn in anticipation of bailout. Harness is easily adjusted to any crew member.
- d. Harness is worn over survival vest and flotation.
- e. Hardware is the similar to the NB-6/8.

OUTLINE SHEET 3.4-1 (Continued)

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DIAGRAM SHEET 3.4-1

HGU-33 SERIES HELMET

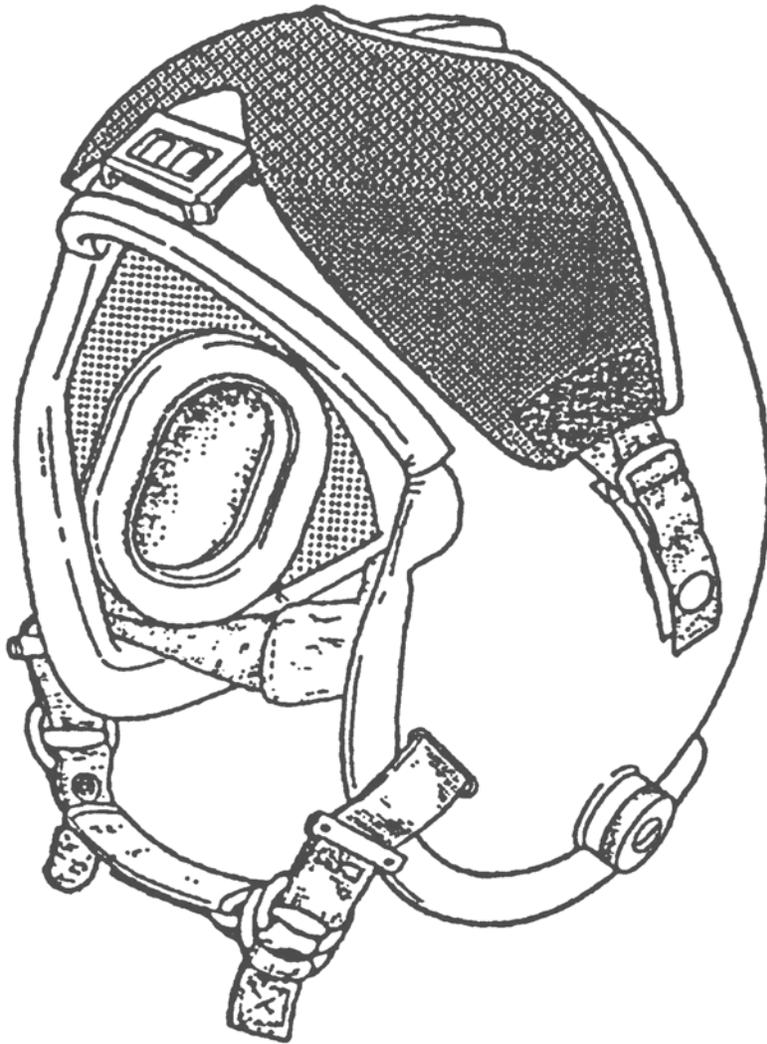


DIAGRAM SHEET 3.4-2

SPH-3C SERIES HELMET

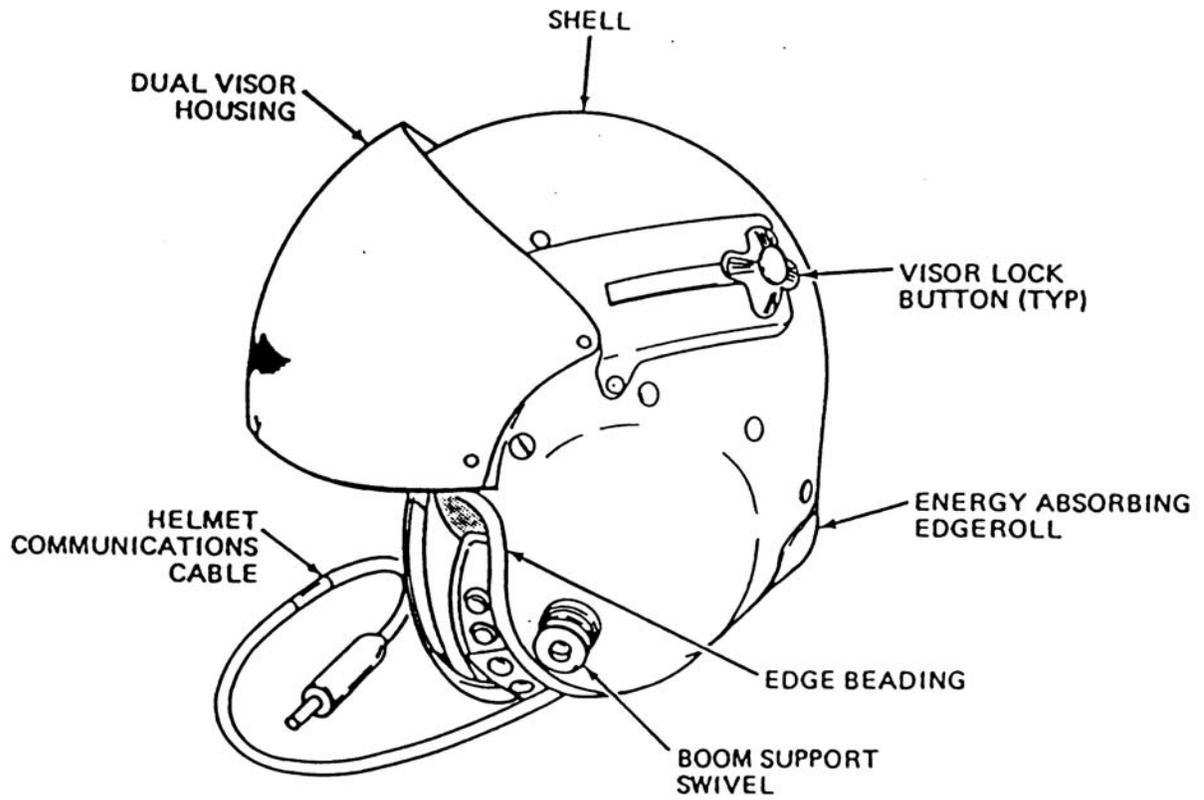


DIAGRAM SHEET 3.4-3

MBU-12 SERIES OXYGEN MASK

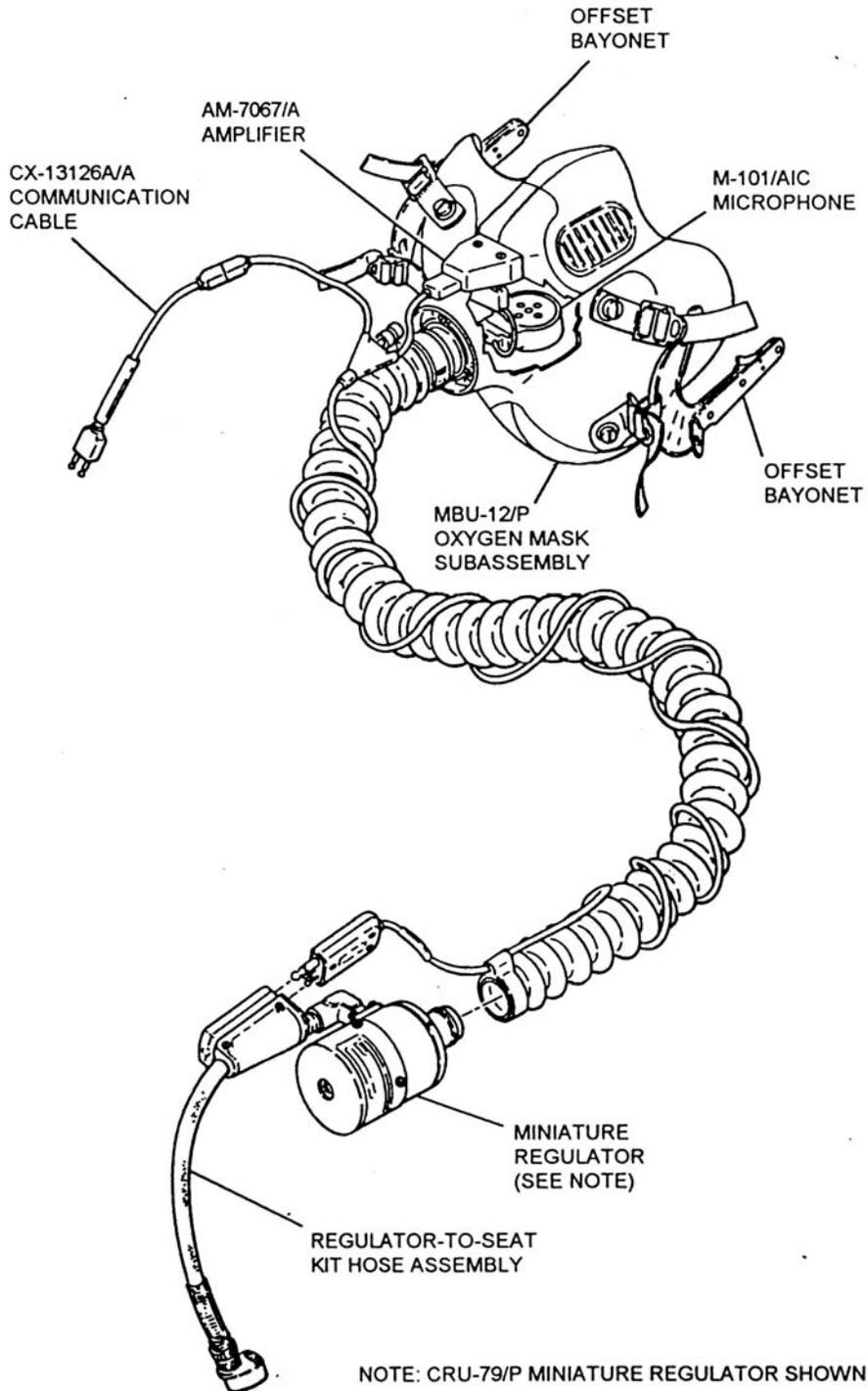


DIAGRAM SHEET 3.4-4

RIGID SEAT SURVIVAL KIT/SEAT KIT UNIT  
(RSSK/SKU)

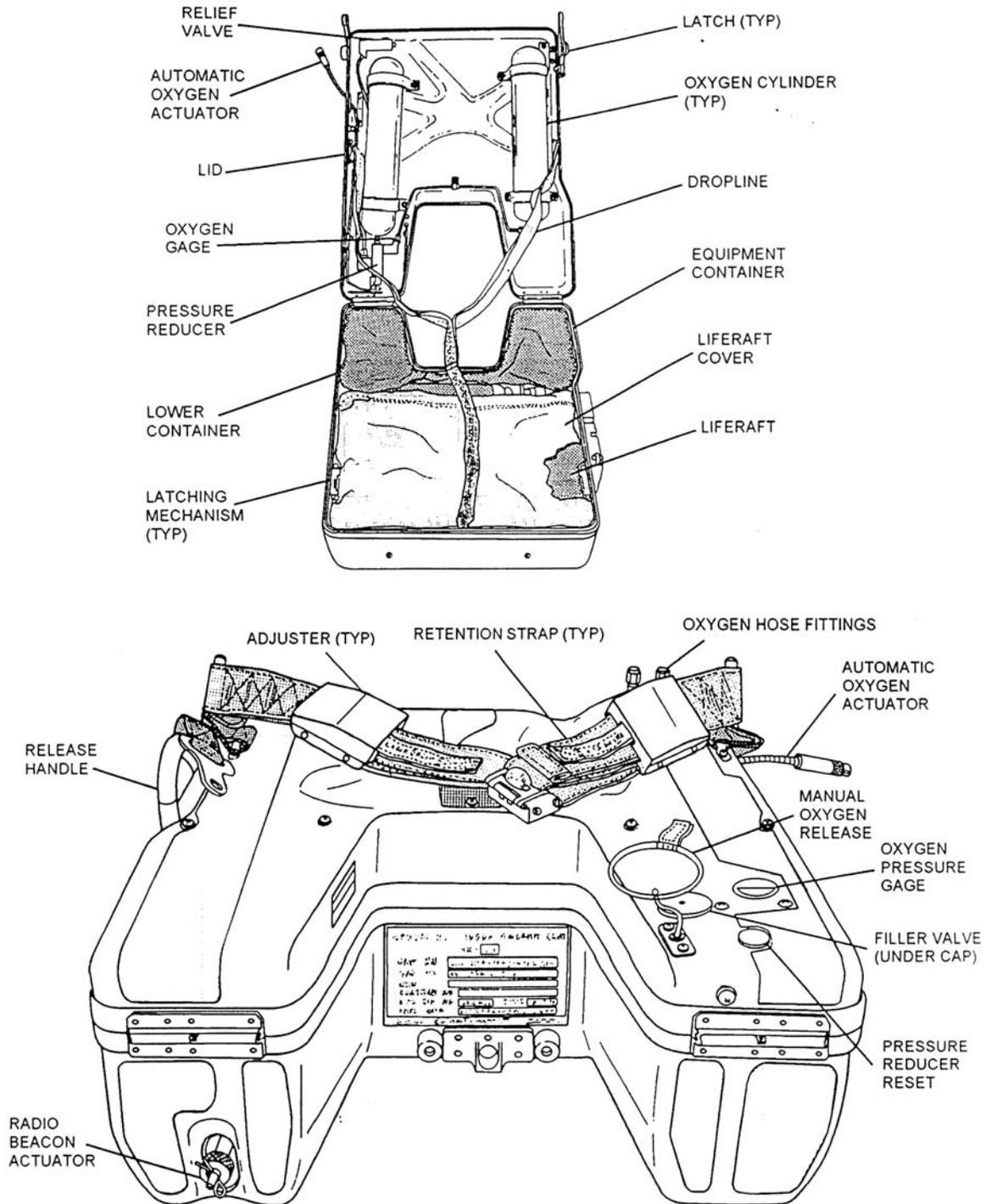


DIAGRAM SHEET 3.4-5

MK-1/LPU-30 FLIGHT DECK PERSONAL VEST

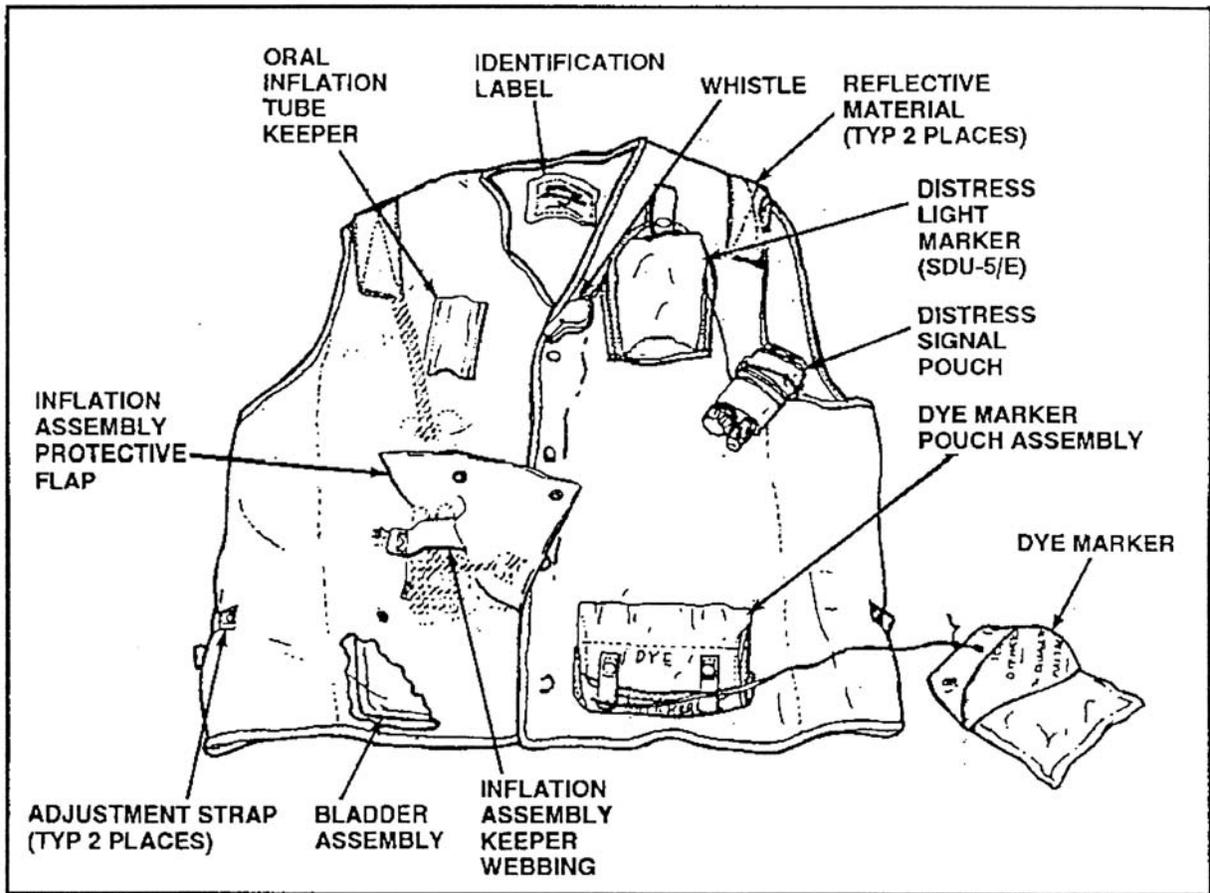


DIAGRAM SHEET 3.4-6

PCU-PARACHUTE RESTRAINT HARNESS ASSEMBLY PAGE 1 of 1

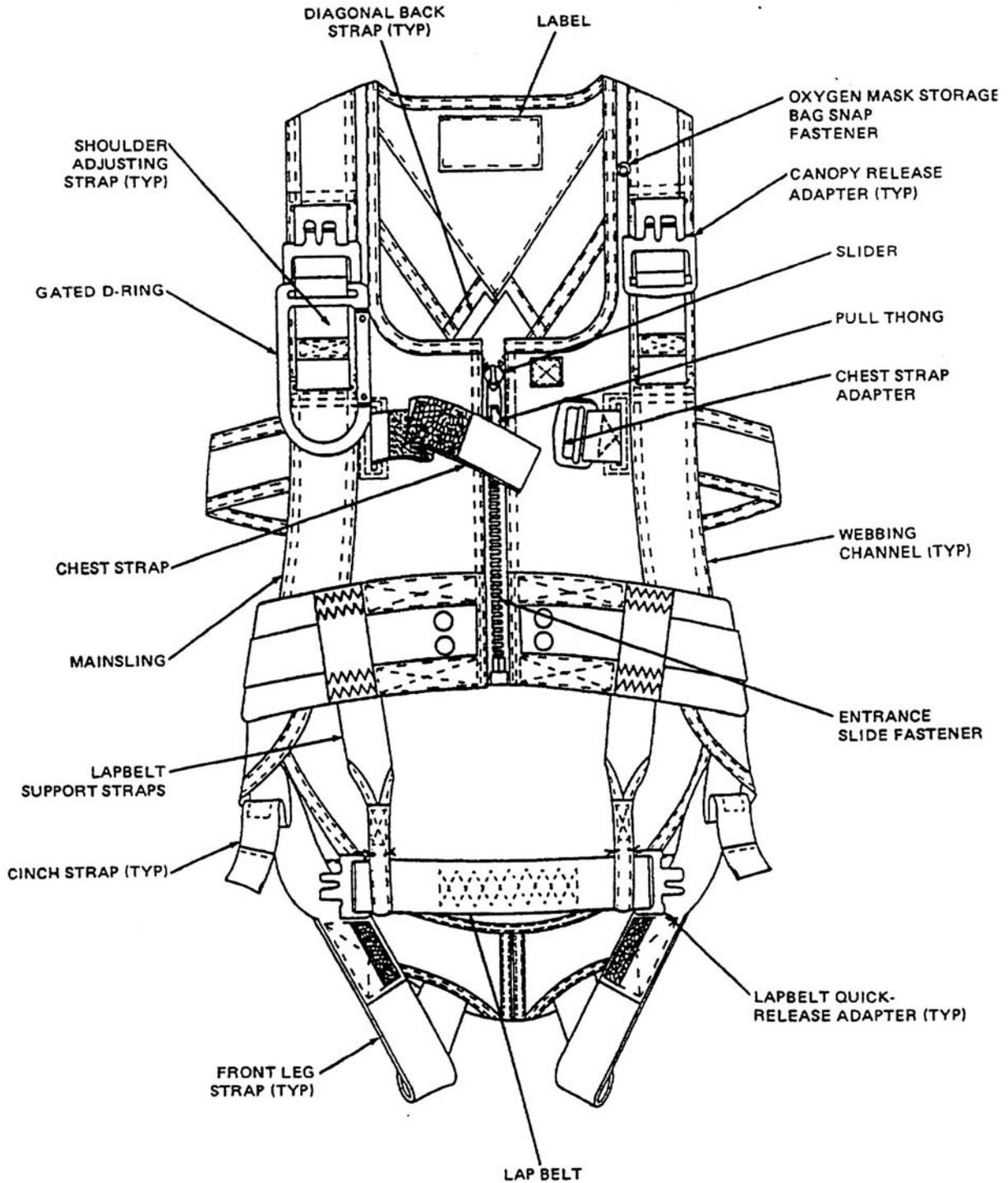


DIAGRAM SHEET 3.4-7

KOCH AND MINI-KOCH FITTINGS

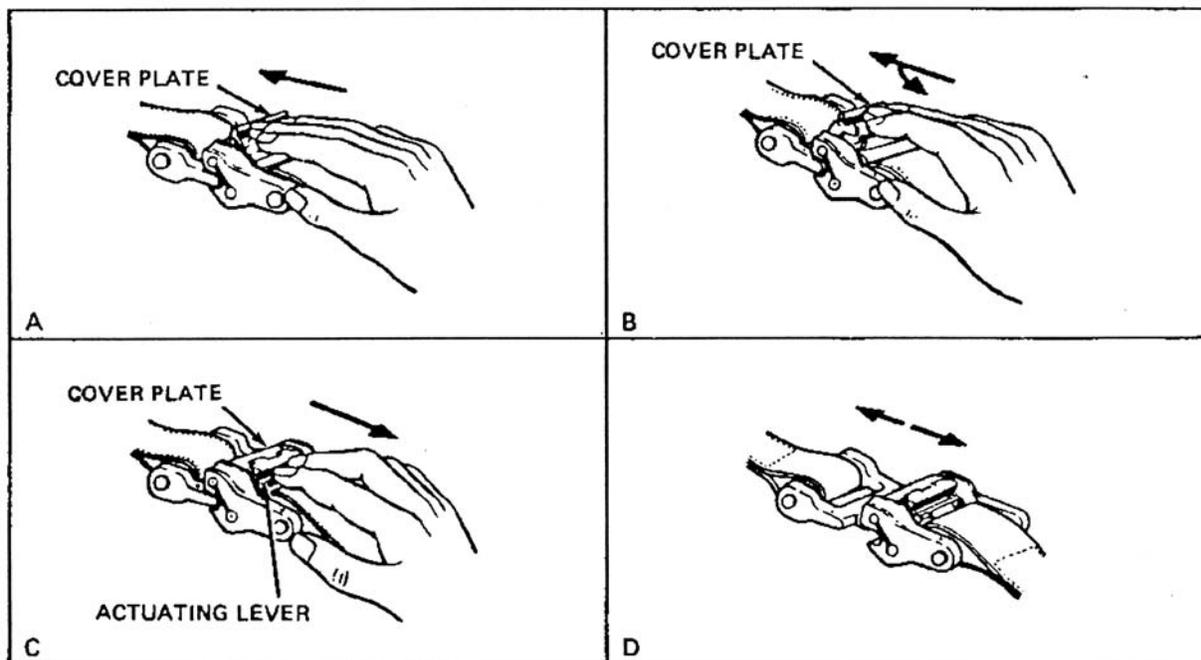
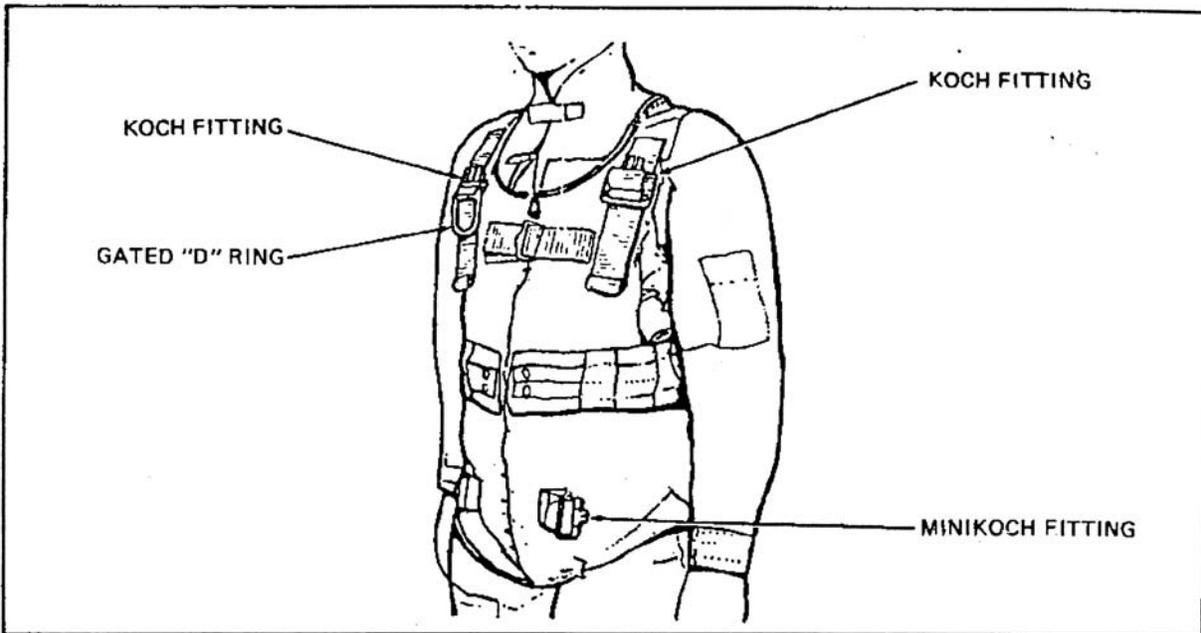


DIAGRAM SHEET 3.4-8

QUICK DONNING HARNESS

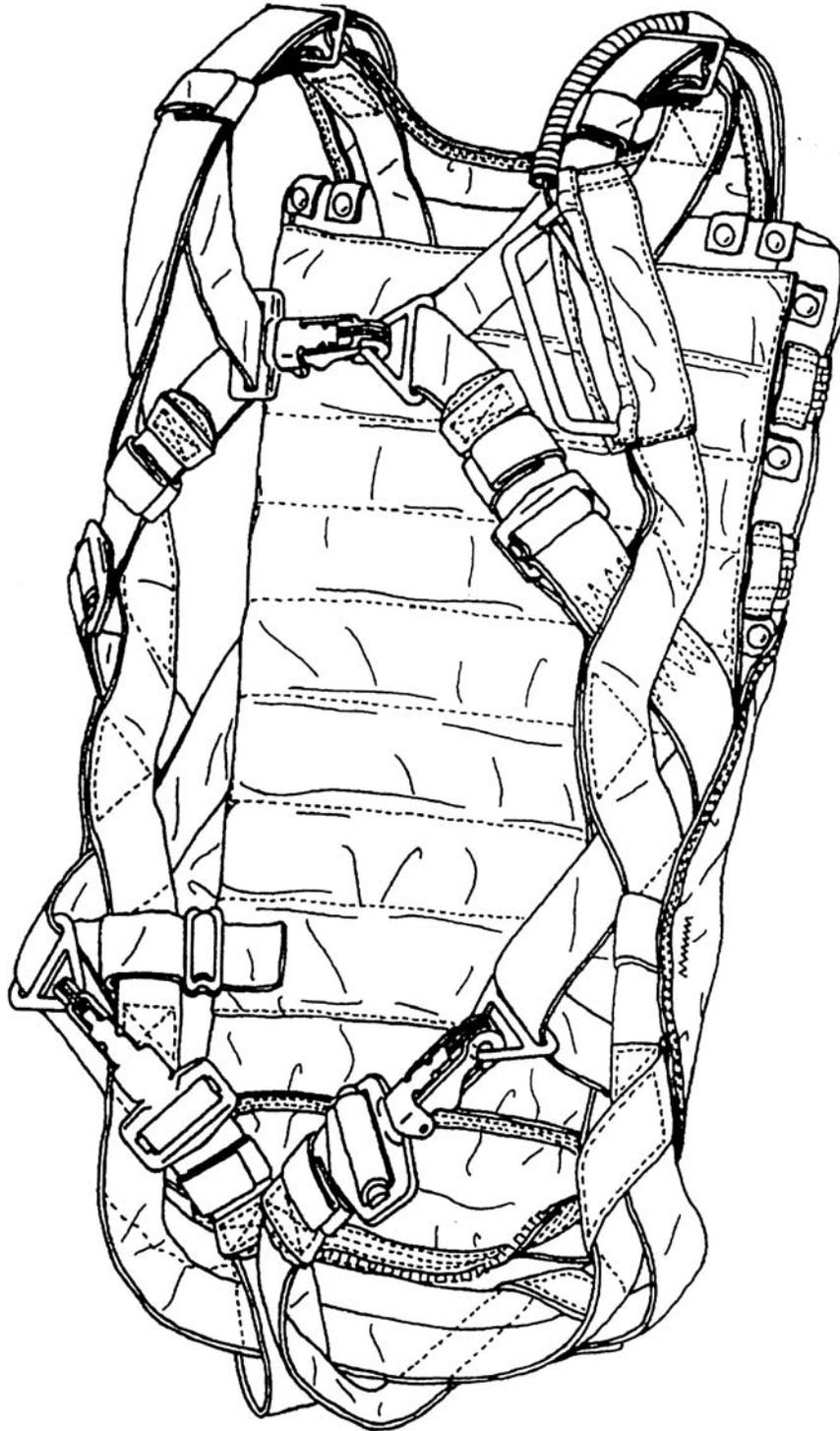


DIAGRAM SHEET 3.4-9

QUICK EJECTOR AND J-1 CAPWELL FITTINGS

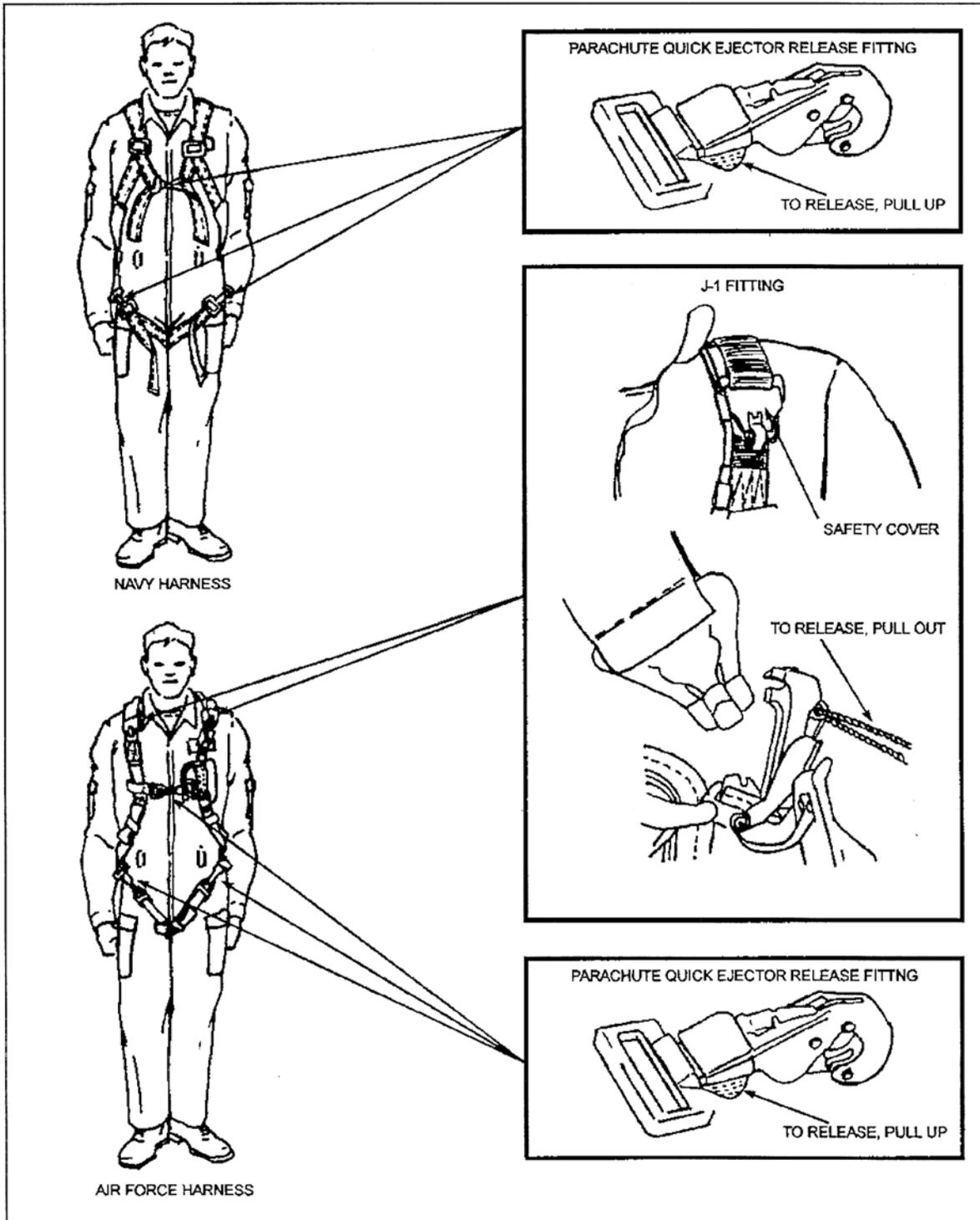
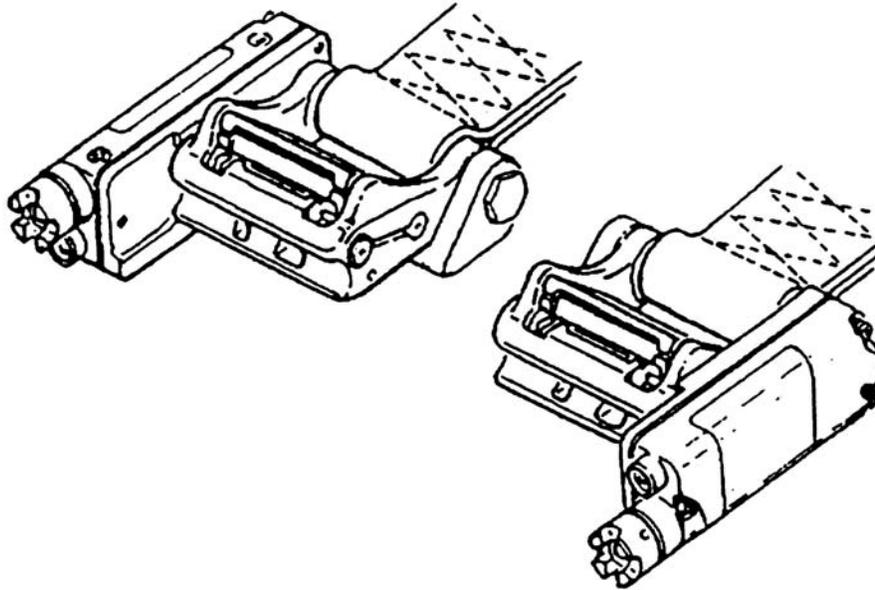


DIAGRAM SHEET 3.4-10

SEAWATER ACTIVATED RELEASE SYSTEM  
(SEAWARS)



OUTLINE SHEET 4.1-1

LIFESAVING APPROACHES/CARRIES

**INTRODUCTION**

During rescues, different types of approaches/carries are used depending on the survivor's condition and or position. The following procedures are furnished to provide basic approaches/carries to deal with any situation that may arise.

**ENABLING OBJECTIVES:**

- 4.1 List procedural steps for approaching from the rear to a conscious survivor.
- 4.2 Demonstrate approaching from the rear to a conscious survivor in a simulated rescue situation.
- 4.3 List procedural steps for the front surface approach to a passive/unconscious survivor.
- 4.4 Demonstrate front surface approach to a passive/unconscious survivor while in a simulated rescue situation.
- 4.5 List the procedural steps for the underwater approach to an active/conscious survivor.
- 4.6 Demonstrate underwater approach to an active/conscious survivor while in a simulated rescue situation.
- 4.7 List procedural steps for the cross chest carry.
- 4.8 Demonstrate the cross chest carry of a survivor while in a simulated rescue situation.
- 4.9 List procedural steps for the collar tow/equipment tow of a survivor.
- 4.10 Demonstrate collar tow/equipment tow to a survivor while in a simulated rescue situation.

OUTLINE SHEET 4.1-1 (Continued)

**TOPIC OUTLINE**

A. Approaching from the Rear

1. Effective for a conscious survivor. The front surface approach shall be used for unconscious survivors.
2. Approach from the rear, with head out of the water and eyes on the survivor.
3. Upon reaching an arms length to survivor, execute a quick reverse.
4. Attempt to establish communications, reassuring the survivor. If survivor appears unresponsive, splash or yell to get his/her attention.
5. Secure survivor in a cross-chest or equipment carry.

B. Underwater Approach (Diagram Sheet 4.1-2)

**WARNING**

Do not use the underwater approach if survivor is still wearing a parachute.

1. Approach survivor from the rear, with head out of the water and eyes on the survivor.
2. Upon reaching a distance of six to eight feet from the survivor, execute a surface dive and swim under the survivor.

**NOTE**

When wearing a wetsuit the swimmer must be aware of the added buoyancy of the wetsuit and avoid premature surfacing.

3. Execute a half turn (the survivor's back should be towards the Rescue Swimmer) and surface.

OUTLINE SHEET 4.1-1 (Continued)

4. While surfacing place survivor in a controlled cross chest carry.

C. Front Surface Approach (Diagram Sheet 4.1-3)

**NOTE**

Use on passive or unconscious survivors.

1. Approach the survivor, with head out of the water and eyes on the survivor.
2. Upon reaching an arms length to survivor, execute a quick reverse.
3. Reach across with your hand grasping the back of survivor's identical wrist (i.e., right hand grabs right wrist, and left on left wrist).
4. Pull survivor's wrist in front of swimmer's body, turning the survivor onto his back.
5. Begin kicking to plane out survivor.
6. When the survivor's back is fully turned, the Rescue Swimmer places the survivor in a cross-chest or equipment carry.

D. Cross Chest Carry

1. From a position behind the survivor's shoulder, the rescuer reaches across the chest and pulls the survivor from under the armpit with the back of the rescuer's hand.
2. The survivor's shoulder is then tucked securely into the rescuer's armpit and the arm firmly grasped against the survivor's chest.
3. The Rescue Swimmer turns to the side with the hip directly against the small of the survivor's back. The swimmer strokes vigorously with his legs, using a flutter kick to provide propulsion.

**NOTE**

This procedure may be difficult to perform on aircrewmembers due to their flotation and survival equipment.

OUTLINE SHEET 4.1-1 (Continued)

4. Should the survivor be aggressive, the rescuer shall lock his/her free hand under the survivor's armpit.
- E. Collar Tow or Equipment Carry (Diagram Sheet 4.1-4)

**WARNING**

Do not grasp survivor in a manner which may result in restricted breathing or circulation.

1. Grasp the survivor's shirt collar or flight equipment from behind and between the shoulder blades with a straight arm locked at the elbow.
2. The Rescue Swimmer assumes the side stroke position and strokes vigorously with the legs, using a flutter kick.

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CHANGE 1

DIAGRAM SHEET 4.1-2

UNDERWATER APPROACH

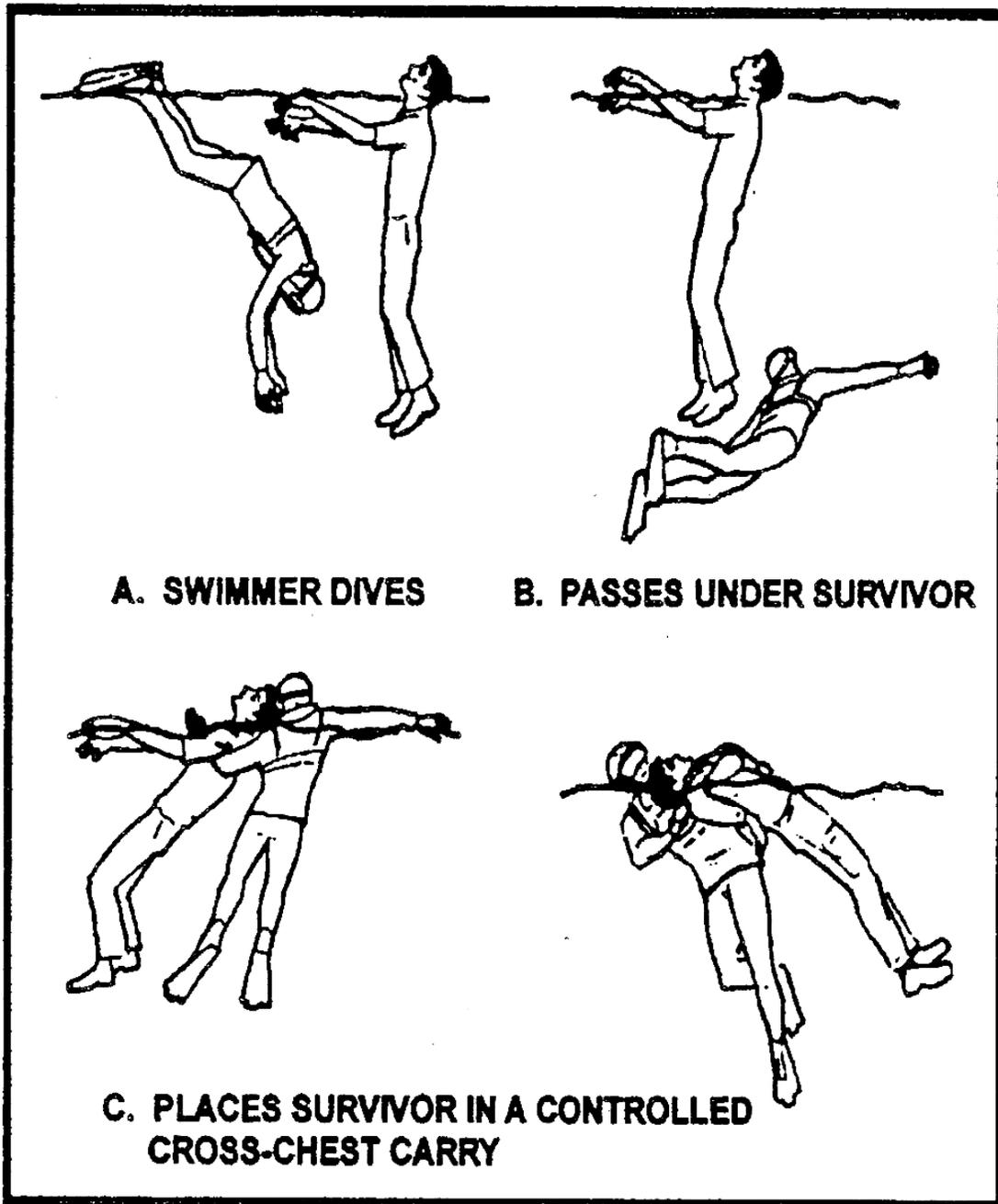


DIAGRAM SHEET 4.1-3

FRONT SURFACE APPROACH

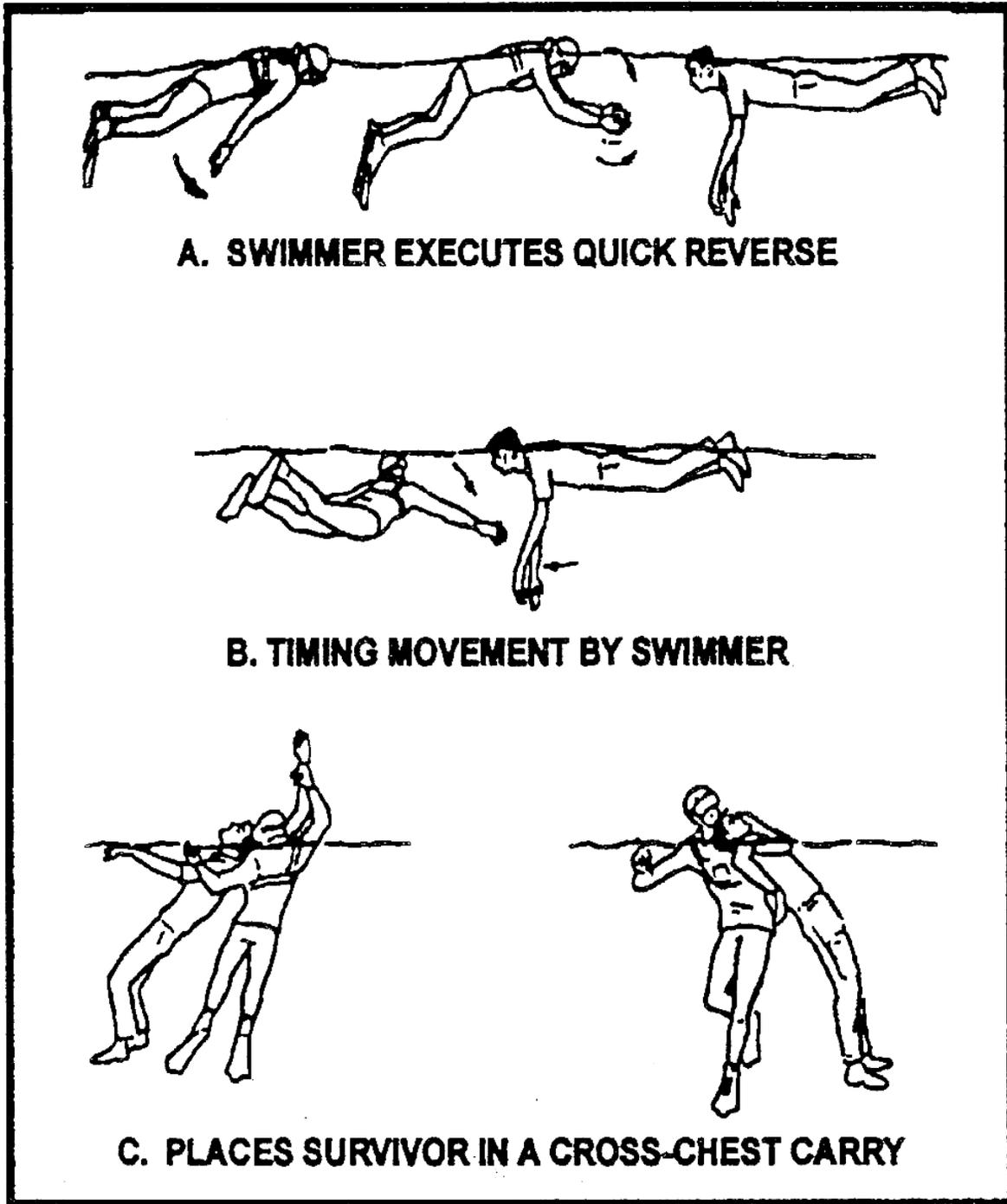
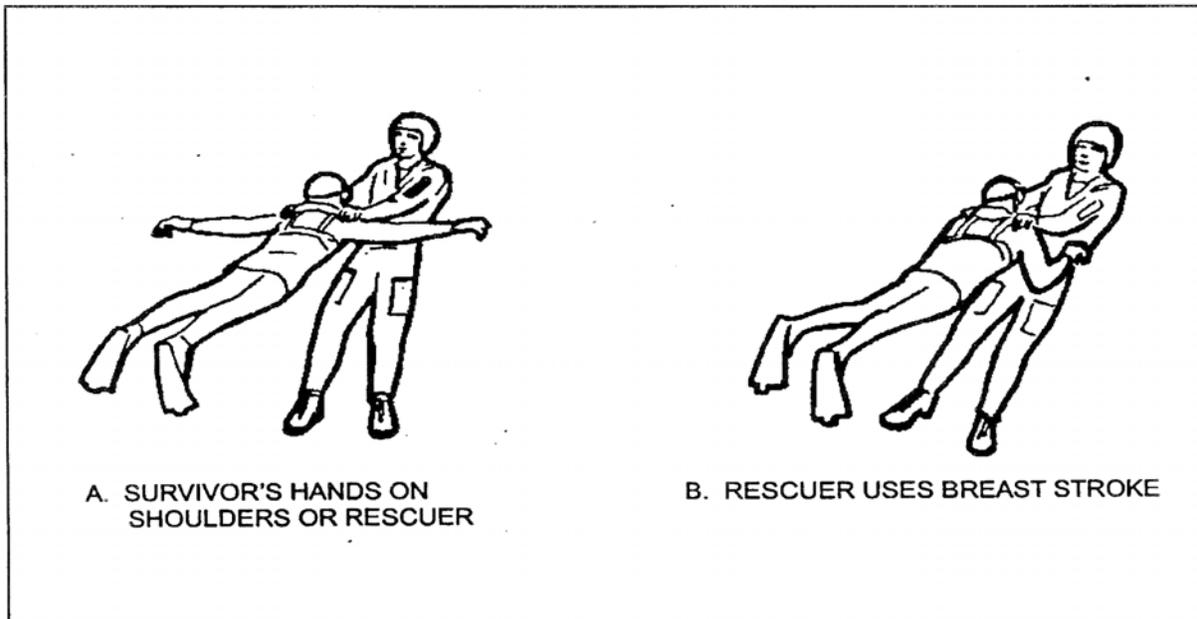
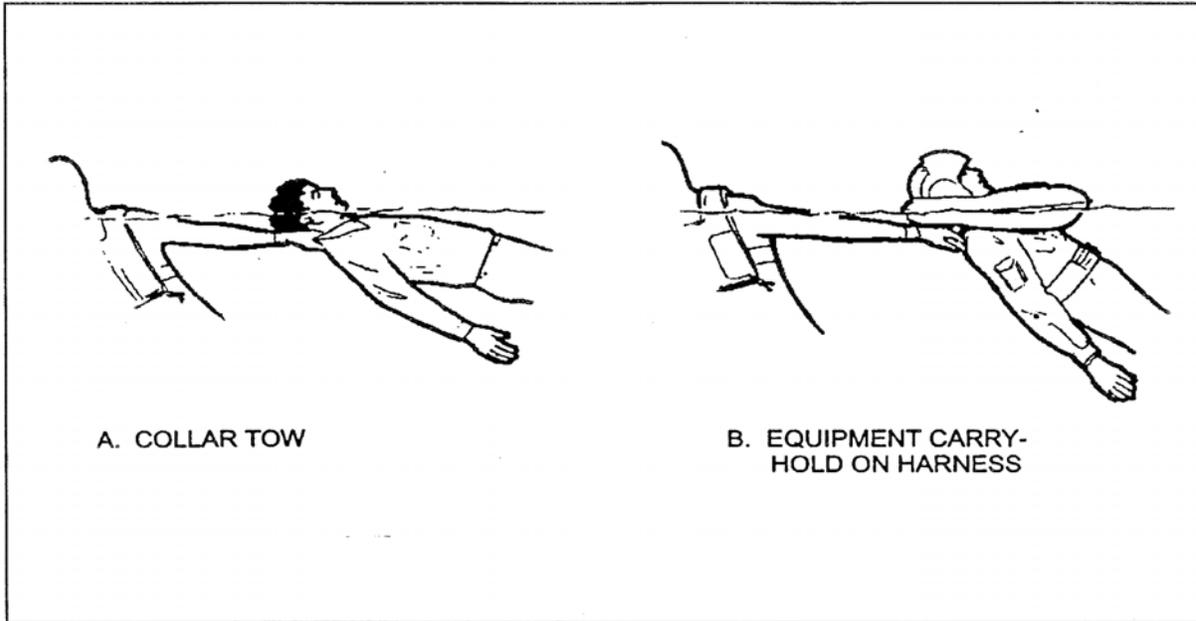


DIAGRAM SHEET 4.1-4

COLLAR, EQUIPMENT, AND TIERED SWIMMER  
CARRIES



**INTRODUCTION**

During a rescue, survivors may panic and often grab the rescue swimmer. To preclude injury or death, it is important to perform proper head hold releases and escapes.

**ENABLING OBJECTIVES:**

- 4.11 List procedural steps for the front/rear head hold release.
- 4.12 Demonstrate the front/rear head hold release while in a simulated rescue situation.
- 4.13 List procedural steps for the front/rear head hold escape.
- 4.14 Demonstrate the front/rear head hold escape while in a simulated rescue situation.

**TOPIC OUTLINE**

- A. Front Head Hold Release (Diagram Sheet 4.2-1)
  - 1. Suck - take a quick "bite" or breath of air.
  - 2. Tuck - tuck chin down and to the side.

**NOTE**

Head is turned away from survivor's face.

- 3. Duck - Rescue Swimmer extends arms outward, moving them upward rapidly several times which will produce downward movement, submerging the survivor and swimmer.
- 4. If the survivor's head is on the right of Rescue Swimmer's head, Rescue Swimmer brings right arm up and over encircling arm and places hand securely against survivor's right cheek, the little finger against the side of survivor's nose and thumb hooked under the jaw.

OUTLINE SHEET 4.2-1

**NOTE**

If survivor's head is at the rescuer's left side, the method is reversed.

5. The remaining hand is brought up beneath the survivor's arm seizing it in a grip with the thumb just above the elbow.
6. In one continuous motion, the survivor's head is pressed out and around with the right hand while the left hand is lifting the survivor's arm over the Rescue Swimmer's head and sweeping it across the far side. This is a pressing movement and it is continued until the survivor's back is to the rescuer.
7. The left hand continues to hold the arm until the right hand can be shifted from the survivor's face to the chest and brought into a controlled cross-chest carry.

**NOTE**

If survivor's head is at the rescuer's left side, the method is reversed.

8. If survivor places a scissors lock on the Rescue Swimmer with the legs, the scissors rarely is held after the head hold is released. However, if it is not released the Rescue Swimmer uses one hand between the ankles to unlock the cross feet.

**B. Front Head Hold Escape (Diagram Sheet 4.2-2)**

1. Suck - take a quick "bite" or breath of air.
2. Tuck - tuck chin down and to the side.
3. Duck - Rescue Swimmer extends arms outward, moving them upward rapidly several times which will produce downward movement, submerging the survivor and swimmer.
4. Without pause, the Rescue Swimmer places both hands on the front of survivor's hips with the heels of the hands against the body, fingers extended and thumbs grasping the survivor's sides. By forcefully pressing and extending the arms, the

OUTLINE SHEET 4.2-1

Rescue Swimmer pushes the survivor's body back and up towards the horizontal position. This leverage will loosen the survivor's grasp.

5. By tucking the chin inward and hunching the shoulders, the Rescue Swimmer's head is freed. Survivor is then pushed away.
6. Rescue Swimmer surfaces to reassess the situation.

C. Rear Head Hold Release (Diagram Sheet 4.2-3)

1. Suck - take a quick "bite" or breath of air.
2. Tuck - tuck chin down and to the side.
3. Duck - Rescue Swimmer extends arms outward, moving them upward rapidly several times which will produce downward movement, submerging the survivor and swimmer.
4. Rescue Swimmer places both hands on survivor's wrist, either top or bottom, and pulls toward Rescue Swimmer's hips, rotating the hand and sliding the other hand up to the survivor's elbow.
5. By twisting inward and down on the survivor's wrist and pushing the survivor's elbow upward, the grip is released. Survivor's fore arm is straight across survivor's back and survivor is in front of Rescue Swimmer.
6. From this position behind survivor, Rescue Swimmer shall place survivor in controlled cross-chest carry.

D. Rear Head Hold Escape (Diagram Sheet 4.2-2)

1. Suck - take a quick "bite" or breath of air.
2. Tuck - tuck chin down and to the side.
3. Duck - Rescue Swimmer extends arms outward, moving them upward rapidly several times which will produce downward movement, submerging the survivor and swimmer.

## OUTLINE SHEET 4.2-1

4. Rescue Swimmer brings the hands up to underside of each of the survivor's elbows. While keeping chin tucked in and hunching the shoulders, Rescue Swimmer pushes forcefully upward freeing the head.
5. Survivor is then pushed back away. Swimmer turns to face survivor, prepared to prevent subsequent grasps.
6. Rescue Swimmer swims well out of reach of survivor, surfaces, and decides which rescue procedures to use.

DIAGRAM SHEET 4.2-1

FRONT HEAD HOLD RELEASE

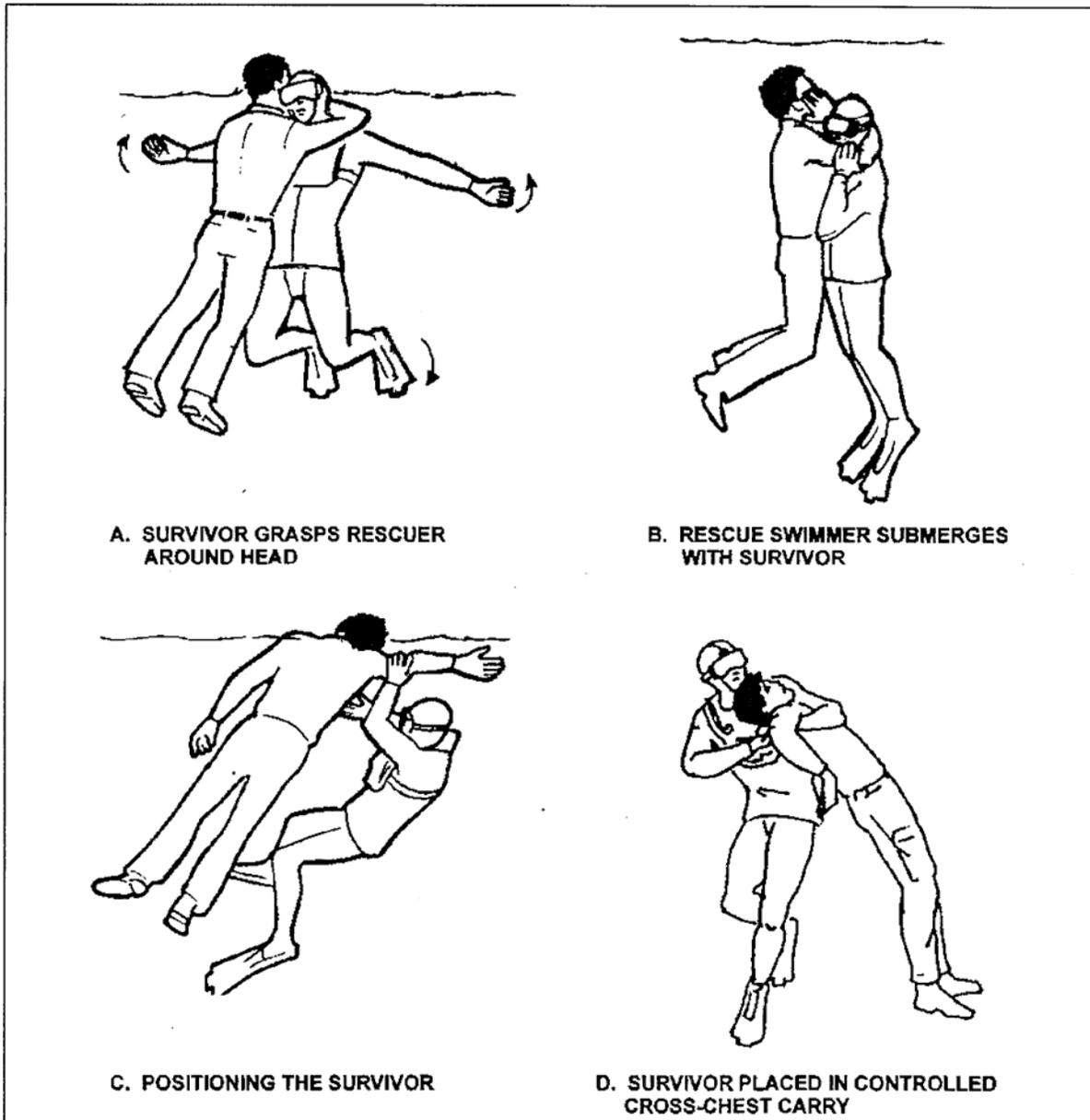


DIAGRAM SHEET 4.2-2

FRONT HEAD HOLD ESCAPE (Top) AND REAR  
HEAD HOLD ESCAPE (Bottom)

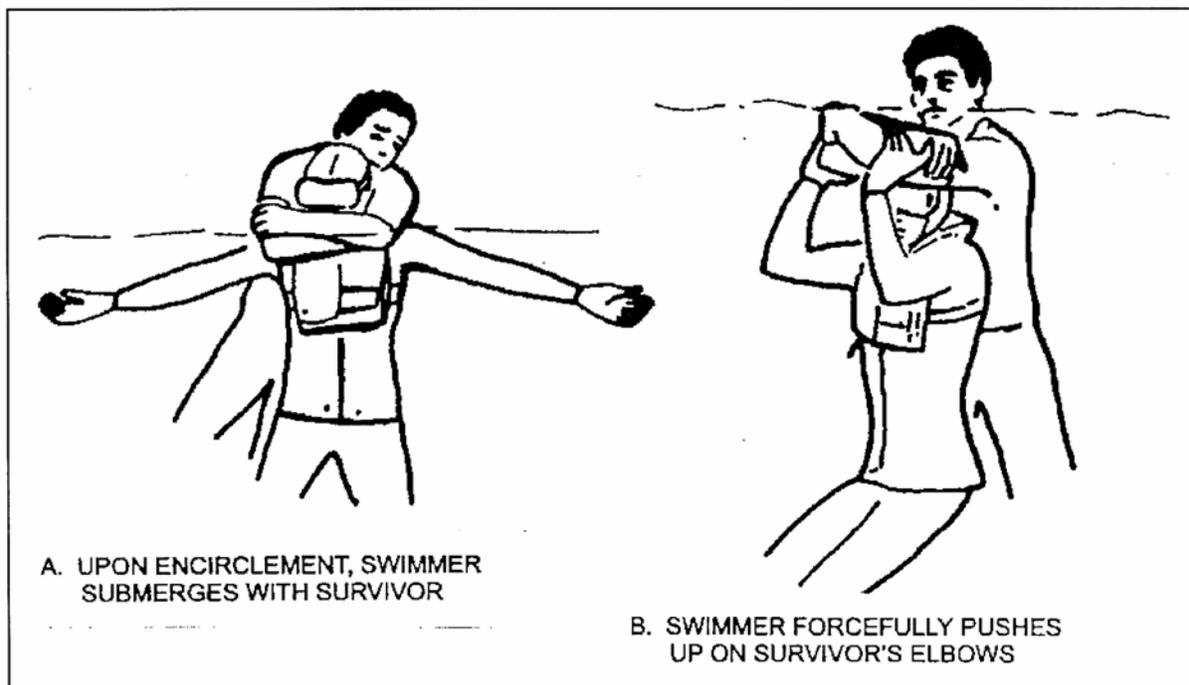
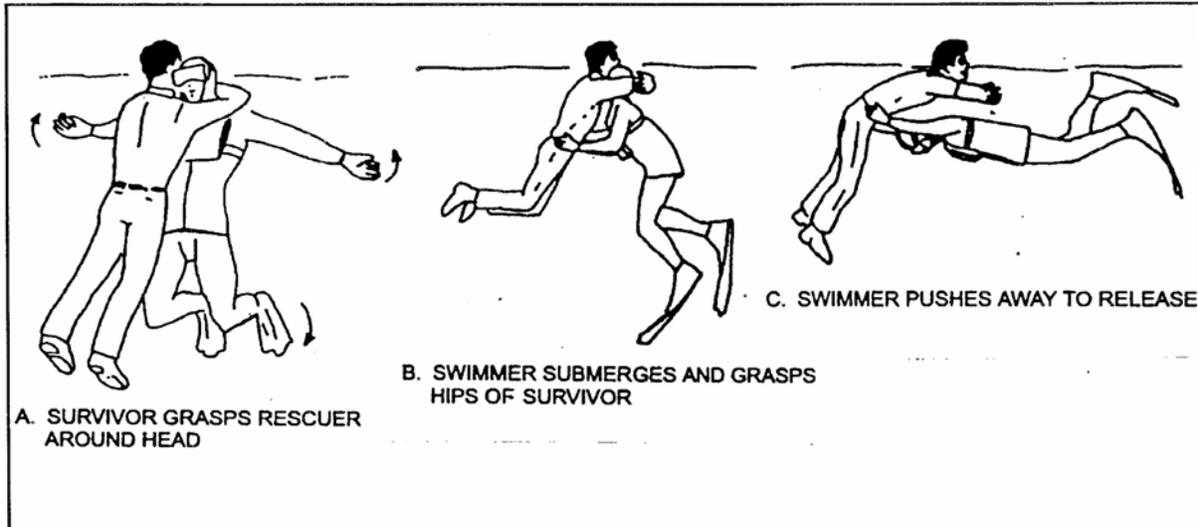
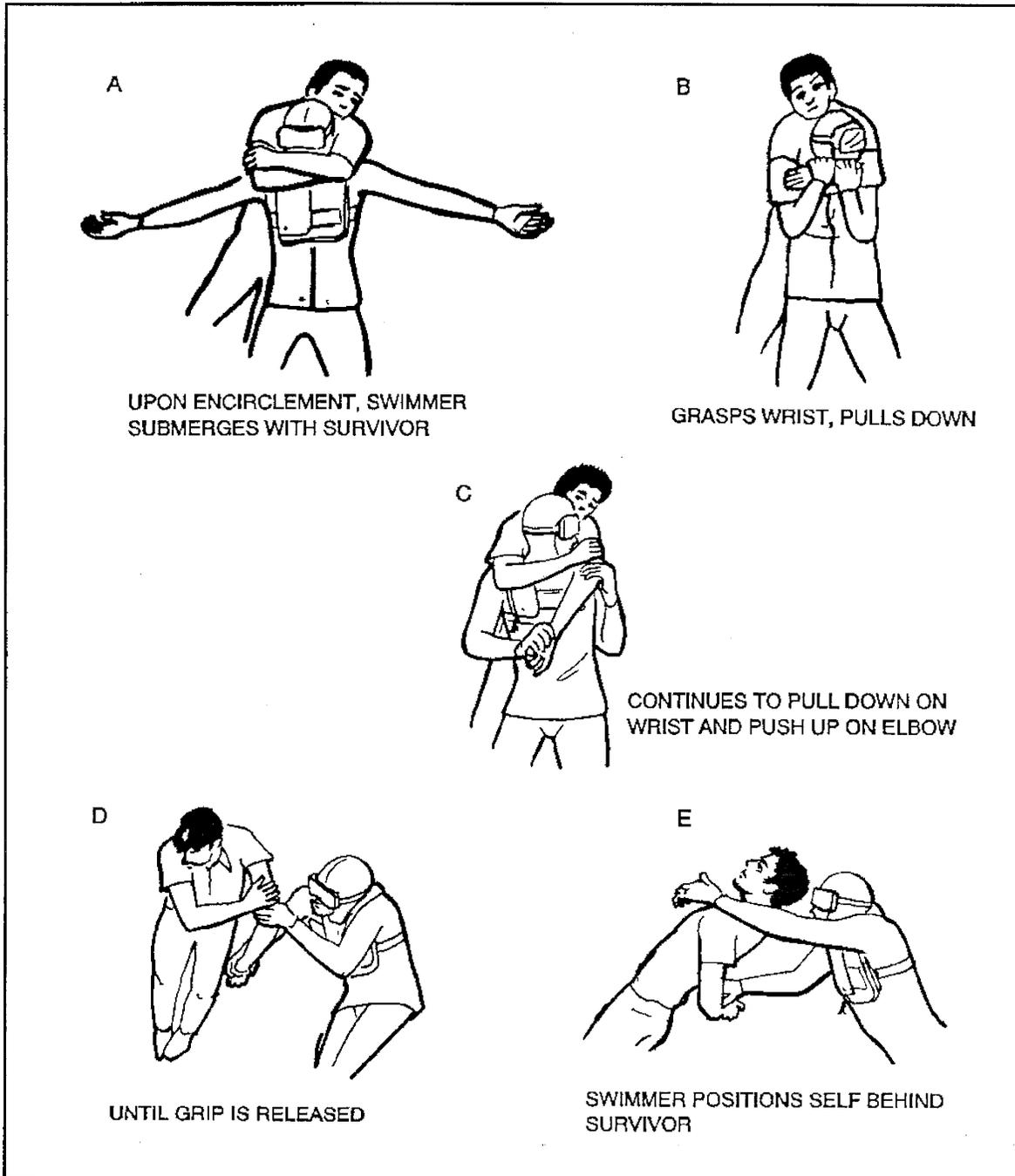


DIAGRAM SHEET 4.2-3

REAR HEAD HOLD RELEASE



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OUTLINE SHEET 4.3-1

PARACHUTE DISENTANGLEMENT

**INTRODUCTION**

Aviation personnel, who have bailed out or ejected from their aircraft, may be entangled in their parachute. This presents the rescue swimmer with both the greatest challenge and the greatest danger. The rescue swimmer must act swiftly and efficiently in disentangling the survivor before the parachute sinks, and the survivor is pulled down with it.

**ENABLING OBJECTIVES:**

- 4.15 List the procedures for parachute disentanglement for the Quick Fitting and Integrated and Integrated Torso Harnesses as outlined in NWP 3-50.1.
- 4.16 Demonstrate procedures for parachute disentanglement for the Quick Fitting and Integrated Torso Harnesses.
- 4.17 List the procedures for parachute disentanglement from a ballooned canopy.
- 4.18 Demonstrate the procedures for parachute disentanglement from a ballooned canopy.
- 4.19 List the procedural steps for survivor emergency floatation for both conscious/unconscious survivor.
- 4.20 Demonstrate the procedures for survivor emergency floatation for a conscious/unconscious survivor while in a simulated rescue scenario.
- 4.21 List the procedures for parachute disentanglement for a multiple victim rescue.
- 4.22 Demonstrate the procedures for parachute disentanglement for a multiple victim rescue.
- 4.23 List the specific dangers of night parachute disentanglement during a rescue scenario.
- 4.24 Demonstrate a night parachute disentanglement IAW NWP 3-50.1 (Rev. A).

**TOPIC OUTLINE**

**NOTE**

Equipment worn by the survivor determines the procedures to be used in parachute disentanglement.

CHANGE 1

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

PAGE 2 of 11

**WARNING**

The parachute shall never be allowed to come between the Rescue Swimmer and the survivor, as the rescue swimmer could lose sight of the survivor or could become entangled in the parachute or suspension lines.

**NOTE**

Should the survivor be entangled in a submerged parachute and the rescue swimmer is unable to extract the survivor in sufficient time. The survivor may then be attached to the rescue hook by the rescue swimmer. This helps maintain the survivor's head above the water while the rescue swimmer disentangles the parachute. Under no circumstances shall the survivor be hoisted out of the water while the parachute is attached.

- A. Disentanglement Procedures for Quick Fit Harness, US Navy Chest Pack, and Back Pack Harness.
  - 1. ASSESS situation to determine if survivor(s) are conscious, unconscious passive, or active. Assessing the situation begins before water entry.
  - 2. ESTABLISH communication to determine the condition of the survivor and make approach.
  - 3. Grasp survivor's harness between the shoulder blades and pull survivor into wind and away from parachute. Obtain control of survivor "ICIC."
  - 4. Remove OXYGEN MASK if applicable.

**NOTE**

Check for breathing. Give two breaths if required. Continue giving rescue breaths during disentanglement not to exceed 60 seconds between breaths until survivor hoisted free of water.

**WARNING**

Loss of ABC's is a serious life threatening condition requiring immediate medical treatment. This condition takes precedence and survivor should be recovered by fastest means possible.

CHANGE 1

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

5. CLEAR head, neck and chest area.

**WARNING**

Survivor may be wearing the LPP-1 flotation device; therefore, Rescue Swimmer shall disconnect the chest quick ejector snaps before inflating the device. Inflating the LPP-1 before disconnecting ejector snaps could crush survivor's chest.

**NOTE**

If the survivor is wearing a chest pack, one of the butterfly spring snaps that connect the pack to the harness, must be released to gain access to the chest quickly.

6. Disconnect survivor's quick ejector snap and INFLATE flotation (manually or orally, if necessary).
  - a. When the SPH-3C or HGU-54/P helmet is worn with the LPP-1/1A life preserver, do not inflate vest until chin strap is loosened or helmet is removed.

**NOTE**

Suspension lines shall be cut only if necessary. Utilize a pocket shroud cutter.

7. DISENTANGLEMENT head to toe check for injuries during disentanglement procedures.
  - a. Remove shoulder straps-clear arms, cross arms on survivor's chest.
  - b. Using spine as a reference submerge and proceed hand over hand along the back, always keeping one hand on survivor, and release the survivor's quick ejector snaps on survivor legs.

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

PAGE 4 of 11

**NOTE**

If survivor has a suspected back injury. Use the side of the survivor as a reference, proceed hand over hand along the side, keeping one hand on the survivor, remove all debris, suspension lines, and leg quick ejector snaps.

- c. Remove the parachute suspension lines from the survivor using the spinal cord as a reference, submerge and proceed hand over hand along the back, always keeping one hand on survivor. Submerge as many times as necessary to remove all suspension lines.

**WARNING**

Do not use the washboard method if survivor has back injury.

- 8. TOW survivor clear, if the survivor is still not free of the harness or parachute, use the washboard method.
  - a. With both hands hold the survivor by the back of flotation device.
  - b. In quick succession, push and pull survivor fore and aft. Make sure that the survivor's head is kept above water.
- 9. Discard RAFT (if applicable)
- 10. Perform FINAL CHECK to ensure that all shroud lines and parachute are clear.

**NOTE**

At the discretion of the Rescue Swimmer the raft may be punctured with a knife and sunk before, during or after the survivor has been removed.

- 11. SIGNAL rescue platform.
- 12. As the rescue platform is approaching, ensure the area is clear. Connect survivor's "V" ring to Rescue Swimmer's harness.

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

B. Disentanglement procedures for Integrated Torso Harness

1. ASSESS situation to determine if survivor(s) are conscious, unconscious passive, or active. Assessing the situation begins before water entry. The situation may change at any moment.
2. ESTABLISH communication to determine the condition of the survivor and make approach.
3. Grasp survivor's harness between the shoulder blades and pull survivor into wind and away from parachute. Obtain control of survivor "ICIC."
4. Remove OXYGEN MASK if applicable.

**NOTE**

Check for breathing. Give two breaths if required. Continue giving rescue breaths during disentanglement not to exceed 60 seconds between breaths until survivor hoisted free of water.

**WARNING**

Loss of ABC's is a serious life threatening condition requiring immediate medical treatment. This condition takes precedence and survivor should be recovered by fastest means possible.

5. CLEAR head, neck and chest area.
6. INFLATE floatation (if necessary)
7. Perform DISENTANGLEMENT from head to toe.
  - a. Disconnect parachute risers by releasing shoulder Koch fittings and place survivors arms across their chest.
  - b. Using spinal cord of the survivor as a reference, submerge and proceed hand over hand, always keeping one hand on the survivor, and remove all suspension lines. Submerge as many times as required to remove suspension lines.

CHANGE 1

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

PAGE 6 of 11

**NOTE**

Suspension lines shall be cut only if necessary. Utilize a pocket shroud line cutter.

**WARNING**

If survivor has a suspected back injury. Use the side of the survivor as a reference, proceed hand over hand along side, remove all debris, suspension lines and mini-koch fittings.

- c. Release oxygen hose from SKU/RSSK (if necessary). Then release SKU/RSSK mini-koch fittings in survivor's lap.
- d. Continue disentanglement procedures.

**WARNING**

Do not use washboard method if survivor has back injury.

- 8. TOW survivor clear of parachute. If still entangled, Step 7 must be repeated or washboard method may be used. Cut shroud lines as a last resort.
- 9. Perform FINAL CHECK to ensure that all shroud lines and parachute are clear.
- 10. Discard RAFT. Life raft must be discarded prior to final check.

**NOTE**

At the discretion of the Rescue Swimmer the raft may be punctured with a knife and sunk before, during or after the survivor has been removed.

- 11. SIGNAL rescue platform.
  - a. DAY Arm raised, thumbs up.
  - b. NIGHT Arm raised, waving high intensity chemlight.

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

PAGE 7 of 11

12. As the helicopter is approaching, ensure the area is clear. Connect survivor's gated "D" ring to Rescue Swimmer's harness.

C. Ballooned Canopy Procedures

1. Establish communications during approach to survivor.

**WARNING**

Do not go under canopy; it may collapse and trap survivor/swimmer.

2. Determine survivor's position under the canopy by looking underwater or by establishing communications and swim to chute edge closest to survivor and opposite the apex, then execute a quick reverse.
3. Lift edge of canopy and gather it into hook of one arm or pull on a shroud line to bring survivor to edge of canopy.
4. With free arm, turn survivor around and grip back of harness.
5. In one motion, pull survivor back and remove parachute canopy from over their head.
6. With survivor out from under the parachute, continue to pull survivor into the wind and away from the parachute canopy.
7. When well clear of parachute canopy, use disentanglement procedures applicable to type of harness the survivor is wearing.

D. Survivor Emergency Flotation Procedures

**NOTE**

When survivor has damaged or no flotation, the swimmer may give up his/her SAR-1 vest. If the swimmer chooses to give up flotation, the following conscious and unconscious survivor procedures shall be used:

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

1. Conscious Survivor
  - a. Approach the survivor and establish communications, using the front surface approach.
  - b. Upon reaching a distance of 6 to 8 feet from the survivor, execute a quick reverse.
  - c. Remove swimmer's mask, unclip and remove SAR-1, and then replace mask.
  - d. Inflate SAR-1, hold onto end of SAR-1 strap, and pass to survivor. Instruct survivor to place SAR-1 over head with pocket facing out.
  - e. While survivor is donning SAR-1, the swimmer shall swim around to the right and behind survivor with strap in right hand.
  - f. Place left hand cross-chest under SAR-1 and grasp buckle. Bring strap under both arms and clip into buckle. Tighten strap.
  - g. Perform disentanglement procedures.
  - h. Complete rescue using normal procedures.
  
2. Unconscious Survivor.
  - a. Approach the survivor using the front surface approach and establish communications or determine unresponsiveness.
  - b. Upon reaching a distance of an arm's length from the survivor, execute a quick reverse.
  - c. Remove swimmer's mask, unclip and remove SAR-1, and then replace mask.
  - d. Inflate SAR-1, place swimmer's right through neck hole with pocket facing in.
  - e. Use front surface approach.

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

PAGE 9 of 11

**NOTE**

Remove survivor's oxygen mask/helmet/cranial if applicable.

- f. Place SAR-1 over survivor's head with pocket facing out. This is done with the right arm while keeping survivor in a left-hand cross-chest carry.
- g. Place left hand cross-chest under SAR-1 and grasp buckle. Bring strap under both arms and clip into buckle. Tighten strap.
- h. Check for breathing. Give two breaths if required.
- i. Perform disentanglement procedures.
- j. Complete rescue using normal procedures.

E. Raft Extraction Procedures

**WARNING**

Life raft must be discarded prior to final check.

**NOTE**

The point at which disentanglement in the life raft becomes unfeasible is the point where the swimmer should extract the survivor from the raft. Once the survivor is in the water, the swimmer resumes disentanglement procedures from where the swimmer left off.

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

**WARNING**

Do not use this method if the survivor has a possible back injury.

- 1.a. The swimmer positions behind the survivor, the swimmers knees will be against the life raft and will have a firm grasp of the survivors harness/flight suit between the shoulder blades.
- b. Simultaneously, the swimmer pulls the survivor up and over the raft lobe and pushes down and away with knees against the raft lobes.
- c. Once the survivor is in the water, continue disentanglement procedures.

**WARNING**

Do not use this method if the survivor has a possible back injury.

- 2.a. The swimmer positions himself behind the survivor, and will have a firm grasp of the survivors harness/flight suit between the shoulder blades.
- b. The swimmer will roll the survivor and raft either to the left or right. Inform the survivor if practical. Normally the swimmer will rock the survivor/raft twice to the side to gain momentum. The third time, the swimmer will roll the survivor into the water. Next, the swimmer immediately rights the survivor.
- c. Continue disentanglement procedures from where previously left off.

**WARNING**

Use the following method if survivor has a possible back injury.

- 3.a. Swimmer positions himself behind the survivor with a firm grasp of the survivor's harness/flightsuit.
- b. With one hand maintaining control of the survivor, the Rescue Swimmer uses the knife to deflate the raft.

OUTLINE SHEET 4.3-1 (Continued)

PARACHUTE DISENTANGLEMENT

PAGE 11 of 11

**WARNING**

This is done well clear of the survivor ensuring not to injure the survivor or swimmer.

- c. While raft is deflating, swimmer stows knife.
- d. Swimmer tows survivor clear of the raft and continues disentanglement procedures.

OUTLINE SHEET 4.3-1 (Continued)

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DIAGRAM SHEET 4.3-1

PARACHUTE DISENTANGLEMENT PROCEDURES

1. **ASSESS** SITUATION
2. **ESTABLISH** COMMUNICATION/APPROACH FROM REAR
3. **ICIC**
4. **CHECK** FOR O2 MASK AND BREATHING
5. **CLEAR** HEAD, NECK, AND CHEST AREA
6. **INFLATE** FLOATATION
7. **DISENTANGLEMENT** HEAD TO TOE
8. **RELEASE** FITTINGS/SPINAL HIGHWAY/SEAT PAN
9. **TOW** SURVIVOR CLEAR
10. **RAFT** PROCEDURES (IF APPLICABLE)
11. **FINAL** CHECK
12. **SIGNAL** PLATFORM
13. **HOOK** INTO SURVIVOR
14. **HOOK UP** TO DOUBLE RESCUE HOOK
15. **SAFETY** CHECK
16. **SIGNAL** "UP HOIST"

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INFORMATION SHEET 4.3-1

SAR TACTICS BASIC GUIDELINES

ASSESS THE SITUATION FROM THE RESCUE PLATFORM

***RULE NO. # 1- NEVER pass a survivor by.***

Establish communication to determine whether or not survivor is passive, active, conscious or unconscious. Execute approach, obtain positive “ICIC”, perform head neck & chest and inflate survivors’ flotation or chose to surrender yours if they do not have any or it is damaged beyond use.

EXAMPLE: If first survivor you come upon is passive and /or cooperative, be assertive and verbalize instructions such as grabbing a hold of or boarding a raft, taking off flight equipment. (This is referred to as “staging” or “safeing” your survivor and will provide flotation). Acknowledging their presence and assisting them is the objective.

Utilize the exact order of disentanglement procedures if you succeed in getting the survivor to remove his/her gear using verbal communication.

Conversely, if you come upon your first survivor and he/she is in a panicky “freaked out” state, execute the underwater approach (if there is no parachute in the immediate vicinity), and gain control with a controlled cross-chest carry. Remember to do head neck & chest and inflate their flotation. (This action alone may be enough to calm survivor.).

***RULE NO. # 2- SURVEY ALL SURVIVORS ON THE SCENE.***

Swim to next closest survivor and provide assistance if needed. A basic rule of thumb is to make sure that the survivor has adequate flotation before you move on to your next survivor.  
 \*(“Staging” or “safeing” your survivor).

Once again, establishing verbal communication between your survivors is essential in determining who needs your immediate assistance and others that are in no obvious danger. DO NOT “ping pong” back and forth between survivors. This is a term used by instructors that simply means swimming back and forth between survivors without really making progress towards the ultimate objective of getting survivors to the rescue platform.

***RULE NO. # 3- WORST RIDES UP FIRST!***

After all survivors are staged, identify the most injured survivor and perform complete disentanglement procedures from start to finish, including a final check and get em to the rescue platform. If you remove any gear or shroud lines from a survivor you must do a final check no matter which type of survivor it is.

Continue on in this order and you cannot go wrong.

## INFORMATION 4.3-1 (Continued)

## SAR TACTICS BASIC GUIDELINES

PAGE 2 of 2

***\*SAFING A SURVIVOR***

Safeing a man-overboard /free floater consists of head, neck & chest, inflate flotation or buddy tow them to a raft and have them board it or hold on to its' side.

Safeing a quick fit harness/ backpack consists of a head, neck & chest, release chest quick-ejector, check flotation, sweep shoulder straps off.

Safeing a PCU torso harness consists of removing O2 mask, head, neck & chest, check flotation and releasing shoulder koch fittings.

OUTLINE SHEET 5.1-1

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONG PROGRAM

**INTRODUCTION**

Physical training is designed to provide the Rescue Swimmer with a balance and progression of physical training which will develop both upper and lower body strength and cardiovascular endurance.

**ENABLING OBJECTIVES:**

- 5.1 Describe the fundamentals of physical conditioning exercises.
- 5.2 Perform Level One physical conditioning exercises.
- 5.3 Perform Level Two physical conditioning exercises.

**TOPIC OUTLINE**

- A. Principles of Physical Fitness
  - 1. Objectives of Rescue Swimmer conditioning program.
    - a. Achieve a level of conditioning which allows the Rescue Swimmer to operate for 30 minutes in a sea state of three (minimum). There is no substitute for practical preparation, but a comprehensive dry land conditioning program will assist toward this goal.
    - b. Pass the Rescue Swimmer Fitness Test (per OPNAVINST 3130.6).
    - c. Enhance performance of Rescue Swimmer duties while reducing risk of injury to self or survivor.
  - 2. Job performance is enhanced for the Rescue Swimmer by maintaining the following:
    - a. Wellness: is an approach to optimal health and emphasizes the swimmer's deliberate effort to stay healthy and achieve the highest potential for well being. Wellness is an ongoing process which requires daily decisions in areas of proper nutrition, stress management, disease prevention, substance abuse control, and physical fitness.

OUTLINE SHEET 5.1-1 (Continued)

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

PAGE 2 of 6

- b. Physical Fitness: is defined as the general capacity to adapt and respond favorably to physical effort. A physically fit rescue swimmer is able to perform normal daily activities effectively and have enough energy remaining to complete the SAR mission.

3. General Principles

- a. Overload - system must be stressed to loads greater than it is accustomed to in order to improve.  
  
Increase resistance, repetitions, intensity, or duration during exercise.
- b. Specificity - effects of exercise limited to system being stressed. To be a good swimmer, you must swim.
- c. Progression - is continually applying overload to experience gain.  
(Training effect)

4. Aerobic Conditioning

- a. Includes aerobic endurance, cardiorespiratory fitness, cardiopulmonary fitness, and heart rate training. Aerobic exercise requires large amounts of oxygen, large muscle groups, is rhythmical in nature, and should be maintained over time at a moderate intensity.
- b. Examples include swimming, running, bicycling, etc. Weight-lifting and most team sports are not aerobic activities.
- c. A good aerobic training program conforms to the F-I-T-T principle:
  - (1) Frequency - minimum three times a week. If exercising daily, "Cross-Train" (alternate different activities) so skeletal muscles are not over-trained.
  - (2) Intensity - heart and breathing rate must be accelerated, but only to a level which can be maintained for extended periods of time. This is 60% - 75% of an individual's maximum heart rate. As a general guideline, an exerciser should be breathing hard yet still able to talk while performing aerobic activities.

OUTLINE SHEET 5.1-1 (Continued)

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

- (3) Type - must be an aerobic activity.
- (4) Time - continuous exercise for a minimum of 20 minutes.

5. Anaerobic Conditioning

- a. Activities which are not long term or rhythmic in nature. They allow the body to recover between efforts. Many team sports and strength/speed training are considered anaerobic.
- b. Two workouts a week can build strength (given sufficient intensity).

WARNING. Do not exercise the same skeletal muscle group on successive days. Minimum 48 hours rest is required between work-outs to avoid over-use injuries and optimize gains.

- c. A muscle which is too fatigued to contract can still be exercised using a technique called "negatives". For example, an exerciser performing pull-ups will reach a point where he/she can no longer lift themselves. The partner then assists (or "spots") the exerciser by QUICKLY lifting him/her all the way up. The exerciser SLOWLY returns to the starting position. Do not rest at the top or bottom of the cycle. This process can be repeated until the muscle achieves total failure.

6. Ideal Workout

- a. An adequate warm-up period (light jogging, jumping jacks) increases the core temperature 1-2°, warming up the muscles for more effective stretching and exercise.
- b. Slow, steady stretching reduces the risk of strains and improves performance. Avoid ballistic (jerking) stretches - they can cause strains. Avoid unsupported bending at the waist - it can cause back trouble.
- c. Training period - aerobic or anaerobic.
- d. A cool-down period of light exercise helps the body return to its normal state.

OUTLINE SHEET 5.1-1 (Continued)

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

7. Preventing Dehydration

- a. Dehydration, a below normal level of water in the body, is a dangerous situation which can lead to heat injuries (heat stress and heat stroke) in the worst case and muscle cramps (including "side stitches") and sub-par performance at a minimum.

**WARNING**

Exercisers, especially in hot, humid environments, are especially vulnerable to dehydration. Up to two quarts of water per hour may be lost through sweating during exercise and one quart per day is lost through urine.

- b. Drink large amounts of clear, non-alcoholic, non-caffeinated, non-carbonated beverages before, during and after exercise.
  - (1) Water.: The recommended amount for adults is ten 8oz cups during a normal day.
  - (2) Sports drinks with less than 8% dissolved sugar.
 

Make your own: 1 gallon water, 6 oz sugar, 1 TBSP salt, flavored Koolaid sweetened with fructose (not sugar).
  - (3) Six to eight ounces of fluid consumed every 20 minutes of exercise can help replenish the sweat lost during exercises.
- c. By the time an active individual feels thirsty, he/she is behind the "dehydration power curve."

**NOTE**

The best indication of adequate hydration is clear to light yellow urine.

8. Exercises to avoid.

OUTLINE SHEET 5.1-1 (Continued)

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

PAGE 5 of 6

- a. Knee care. Avoid exercises which require the knee to bear weight while bent beyond 90 degrees.
  - b. Back care.
    - (1) Avoid unsupported bending at the waist (ie, standing toe touch).
    - (2) Avoid doing flutter kicks, leg levers, and good morning darlings in excessive amounts. These common exercises, mistakenly thought to strengthen the abdominal, predominantly work the Illio Psoas (hip flexor) muscles. These muscles are attached to the top front of the leg, wrap around outside the hip, and attach to the back of the pelvic girdle. Over-developed hip flexor cause a lordotic (sway-backed) spinal curve and result in lower back pain.
9. Rest and Basic Nutrition
- a. The Rescue Swimmer School is a very demanding physical program. Hard work-outs without adequate rest or nutrition will result in over-use injuries and illness.
  - b. Adequate rest is vital if muscles are to recover and gain strength.
 

Seven to nine hours of uninterrupted sleep is adequate for many adults, however, participants in RSSTP programs need to "listen to their body" and get more sleep as required.
  - c. Proper nutrition provides the Rescue Swimmer with the energy required to perform duties.
    - (1) Carbohydrates: Provide energy and is the main fuel source to the cells within the body. Glucose is the main product of carbohydrate digestion. Carbohydrates are usually referred to as the following:
      - a. Simple: derive from fruits and sugars. (IE. Soda, candy, cake, ECT.)
      - b. Complex: derive from vegetables, grains, fruits, and beans.

## OUTLINE SHEET 5.1-1 (Continued)

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

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(2) Avoid fatty, fried, and oily foods.

10. Conclusion

- a. The Rescue Swimmer School Dry Land Conditioning program is a comprehensive, total body workout designed by an exercise physiologist from the Naval Aeronautical Medical Institute. Special emphasis is given to muscle groups utilized in Rescue Swimming, specifically the pulling muscles of the upper body and the muscles in front of the thigh (which power the flutter kick).
- b. The principles of this unit apply to the training environment and the fleet.

INFORMATION SHEET 5.1-1

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

Sets and repetitions shall be governed by the following table. (Refer to the Master Course Schedule for the appropriate level given the day of training.)

STRETCH SET

ANKLE ROTATIONS, 10 EACH DIRECTION EACH ANKLE  
 JUMPING JACKS, 30 FOUR-COUNT  
 ROTATOR CUFF STRETCH, 15 SEC EACH ARM  
 TRICEPS STRETCH, 15 SEC EACH ARM  
 QUADRICEPS STRETCH, 15 SECONDS EACH LEG  
 INSIDE HURDLER STRETCH, 15 SECONDS EACH LEG  
 GROIN STRETCH, 15 SECONDS  
 KNEE TO CHEST, 15 SECONDS EACH LEG  
 BOTH KNEES TO CHEST, 15 SECONDS  
 BACK TWIST, 15 SECONDS EACH SIDE  
 CALF STRETCH, 15 SECONDS EACH LEG  
 ACHILLES STRETCH, 15 SECONDS EACH LEG

CALISTHENICS SET (REPETITIONS FOR LEVELS I, AND II FOLLOW)

PULL-UPS (5, 6)  
 FOUR-COUNT LUNGES (15, 18)  
 PUSH UPS (25, 30)  
 BENT KNEE SIT-UPS (20, 25)  
 PULL-UPS (5, 6)  
 TWO-COUNT SQUATS (15, 18)  
 WIDE-ARM PUSH UPS (25, 30)  
 CRUNCHES (25, 30)  
 FOUR-COUNT QUADRUPED RAISES (15, 20)  
 FOUR-COUNT OBLIQUE CRUNCHES (15, 18)  
 FOUR-COUNT SUPERMANS (15, 18)  
 FOUR-COUNT FLUTTER KICKS (25, 30)  
 TRICEPS PUSH-UPS (15, 20)  
 CALF RAISES (30, 35)  
 CROSS KNEE OBLIQUE CRUNCHES (15, 18)  
 EIGHT-COUNT BODY BUILDERS (10, 12)  
 HIP-FLEXOR STRETCH, 30 SECONDS EACH LEG

NOTE

Students are required to bring a full squeeze bottle of water to all Physical Training sessions.

INFORMATION SHEET 5.1-1

PRINCIPLES OF PHYSICAL FITNESS AND DRY-LAND  
CONDITIONING PROGRAM

POST RUN COOL DOWN STRETCHES

QUADRICEPS STRETCH, 20 SECONDS EACH LEG  
INSIDE HURDLER STRETCH, 20 SECONDS EACH LEG  
GROIN STRETCH, 20 SECONDS  
KNEE TO CHEST, 20 SECONDS EACH LEG  
CALF STRETCH, 20 SECONDS EACH LEG  
ACHILLES STRETCH, 20 SECONDS EACH LEG

STRETCH SET FOR STRENGTH TRAINING AND  
AND SWIMMING

PUSH-UPS, 10  
ARM CIRCLES, 10 SECONDS EACH DIRECTION  
FLUTTER KICKS, 25 FOUR-COUNT  
LUNGES, 10 FOUR-COUNT  
CRUNCHES, 15  
ABDOMINAL STRETCH  
ROTATOR CUFF STRETCH  
CHEST STRETCH  
TRICEPS STRETCH  
QUADRICEPS STRETCH  
INSIDE HURDLERS STRETCH  
BACK TWIST

POST SWIM/STRENGTH  
TRAINING STRETCHES

ROTATOR CUFF STRETCH  
CHEST STRETCH  
TRICEPS STRETCH  
QUADRICEPS STRETCH  
INSIDE HURDLER STRETCH  
BACK TWIST  
CALF STRETCH

STRENGTH TRAINING EXERCISES

**CORE EXERCISES**

\* POWER CLEANS  
PULL-UPS  
BACK SQUATS  
DEAD LIFTS  
STANDING MILITARY PRESS  
STANDING BENT OVER ROW  
FLAT BENCH PRESS  
SIT-UPS  
CRUNCHES  
OBLIQUE SIT-UPS

**AUXILIARY EXERCISES**

SEATED CABLE ROW  
TRICEPS CABLE PULL DOWN  
INCLINE DUMBBELL BENCH PRESS  
DUMBBELL BICEPS CURL  
LEG PRESS  
LATISSIMUS PULL DOWN  
SIT-UPS  
CRUNCHES  
OBLIQUE SIT-UPS

\* OPTIONAL EXERCISE FOR ADVANCED TRAINEES ONLY.