ALASKA

Emergency Towing System (ETS)

Procedures Manual

January 2014; V004

by:
Alaska ETS Workgroup

P.O. Box 175
Seldovia, Alaska 99663
tel 907.234.7821
fax 240.368.7467
contact@nukaresearch.com

This manual was prepared for the Alaska Department of Environmental Conservation and has been updated based on exercises conducted annually in Unalaska, Juneau, and Kodiak over the past 4 years.

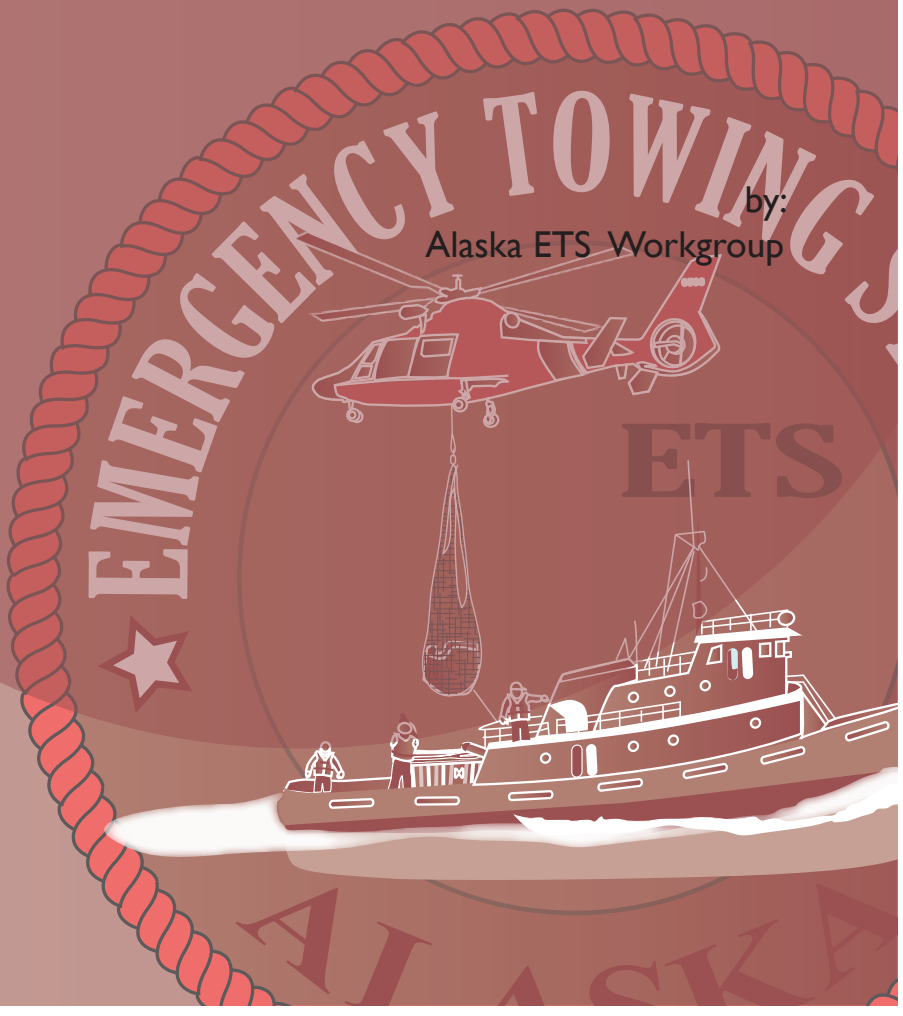
Project website: http://dec.alaska.gov/spar/perp/ets

Alaska Emergency Towing System
(ETS)

Procedures Manual

January 2014; V004

by:
Alaska ETS Workgroup



This page is intentionally blank.

TABLE OF CONTENTS

This page is intentionally blank.

INTRODUCTION

PURPOSE OF THE ALASKA ETS

Because of the history of distressed and stricken vessel incidents in Alaskan waters, Emergency Towing Systems (ETS) have been stationed permanently at strategic locations in the state. The systems are intended to improve safety and environmental protection by facilitating prompt and effective assistance to distressed vessels.

The ETS consists of a Tow Line capable of towing a distressed vessel, a Messenger Line to assist in deploying the Tow Line, lighted buoy, and chafing gear. There are currently two sizes of ETS utilized in Alaska. The larger size is capable of towing vessels greater that 50,000 DWT. The smaller system can tow vessels less than 50,000 DWT. Additionally the messenger line is capable of towing vessels under 2000 DWT. The ETS may be deployed from the stern of a rescue tug, or lowered to the ship's deck via helicopter.

HOW TO USE THIS DOCUMENT

This manual provides all parties that may be involved in an ETS response with a common set of recommendations for mobilization and deployment. It is divided into the following sections:

- Introduction
- System Components and Storage Locations
- Procedures
- Training
- Cost Recovery
- Appendices

This manual describes suggested procedures specific to the following roles:

- First responder (which may or may not be the distressed ship's master)
- USCG
- ETS Custodians
- Rescue Tug Captains
- ADEC
- Master of the distressed ship
- Crews of rescue tugs and distressed ship, as per instructions from the masters of these vessels

This manual is intended to serve as guidance only. In the event of an incident requiring use of the ETS, responders should act according to their own training, judgment, and the requirements of their respective companies, organizations, agencies, or other institutions.

The USCG has the responsibility to assume command and control of a search and rescue operation.

WHO TO CONTACT WITH INPUT FOR FUTURE REVISIONS OF THIS DOCUMENT

This document is administered by:

Alaska Department of Environmental Conservation
Prevention & Emergency Response Program
555 Cordova Street
Anchorage, AK 99501
907-269-7688

SYSTEM COMPONENTS AND STORAGE LOCATIONS

SYSTEM COMPONENTS AND NOMENCLATURE

The following illustrations depict the ETS components and nomenclature for the tug-to-ship deployment (Illustration sc-1) and the ship-to-tug deployment (Illustration sc-2). To avoid confusion, the nomenclature for each component should remain consistent.

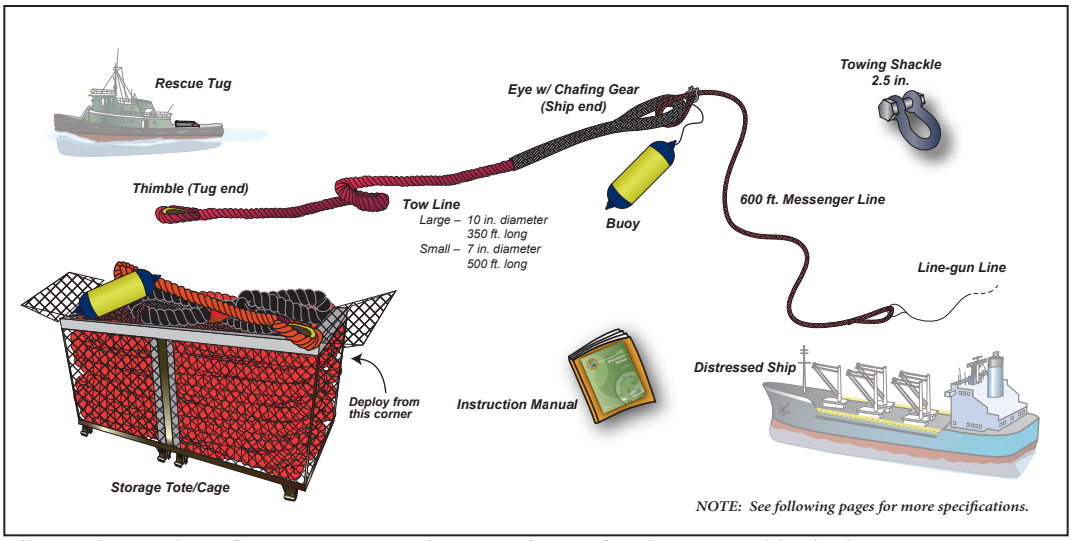


Illustration sc-1. ETS components and nomenclature for the tug-to-ship deployment.

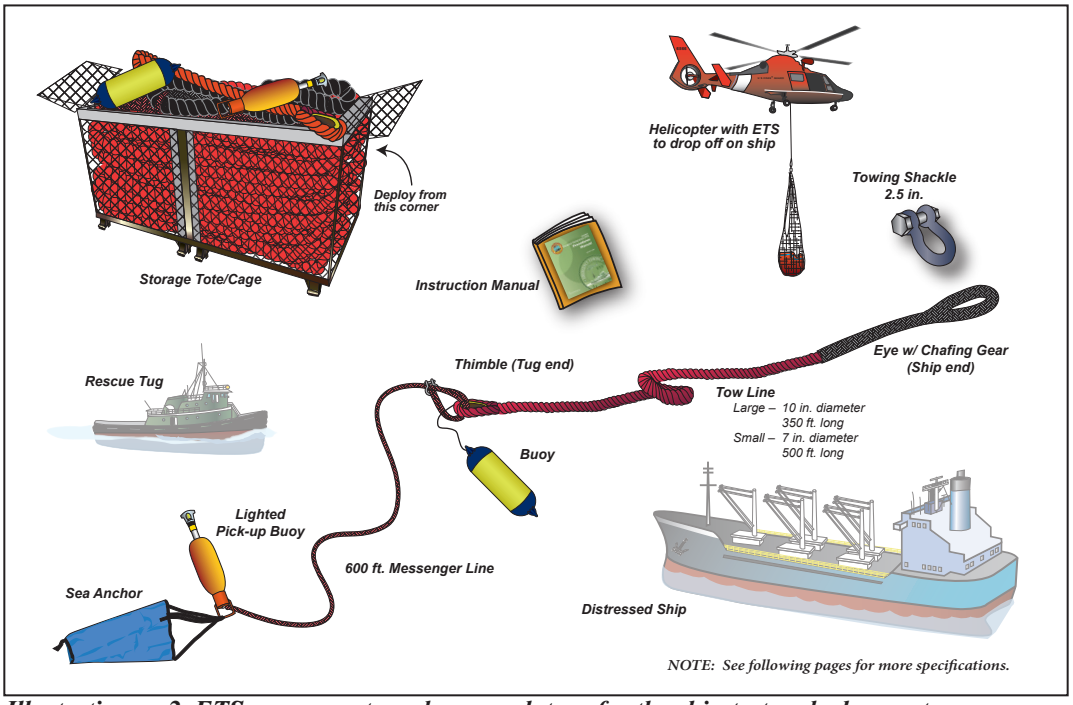
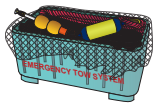
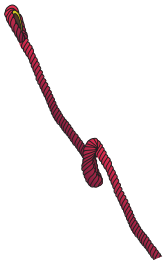
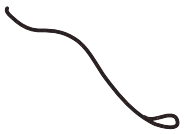
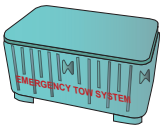
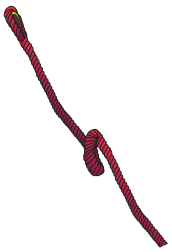
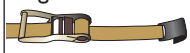


Illustration sc-2. ETS components and nomenclature for the ship-to-tug deployment.

The specifications for each ETS component are listed in the following table.

ETS System	Component	Specifications	Manufacturer
Smaller ETS < 50,000 DWT  Weight: 1,274 lbs (578 kg.) with Tote/ cage 932 lbs (423 kg.) without Tote/ cage Note: does not include weight of miscellaneous equipment (see below)	Tow Line 	ETS-450: Diameter 7 in. 18 cm. Circumference 22 in. 56 cm. Length 500 ft. 152 m. Breaking Strength 450,000 lbs. 2,000 KN The ETS-450 is made of 12 Strand Plasma® and is suitable for towing vessels up to 50,000 DWT. The tow lines are floating lines in a soft, torque-free braided construction with a high visibility urethane coating. Unlike Kevlar®, these tow lines do not require special large radius chocks or fairleads and can be handled in the same manner as regular towing hawsers.	Cortland Puget Sound Rope 1012 Second St. Anacortes, WA 98221 360.293.8488
	Tug Thimble 	Tug Thimble: Length 10 in. 254 mm. Width 12.25 in. 311 mm. Thickness 4 in. 102 mm. Weight 20 lbs. 9 kg.	Kulkoni Inc. 502 Golden Oaks Blvd. Houston, Texas 77018 800.231.3973
	Tow Line Chafing Gear 	Anso-Tex® Chafe Guard is a lightweight, tubular cloth made of a special abrasion-resistant nylon. This type of chafe guard is known under several trade names such as cordura, shark skin, and ballistic nylon. It is the lightest weight chafe protection and has excellent snag resistance due to its tight weave. Due to the light weight, it does not offer as much protection or last as long as braided chafe guard under severe chafe conditions. Features of Anso-Tex® Chafe Guard are: lightest weight, excellent snag resistance, easy to handle, and good protection from UV.	Southern Weaving Company - Sleeving Products 210 Fern Street PO BOX 558 Easley, SC 29641 Phone: 864.859.7531 Ext. 20 Fax: 864.859.7532 Email: sales-easley@ southernweaving.com
	Messenger Line 	Messenger Line: Diameter 7/8 in. 2 cm. Circumference 2 3/4 in. 7 cm. Length 600 ft. 183 m. Breaking Strength 45,000 lbs. 200 KN The Messenger Line is capable of towing vessels under 2000 DWT.	Cortland Puget Sound Rope 1012 Second St. Anacortes, WA 98221 360.293.8488
	Lighted Pick-up Buoy and battery 	A manually-activated lighted buoy with sea anchor attached that is small enough to fit through any chock that will accept the tow line thimbles. Replacement Batteries: D-cell	Cortland Puget Sound Rope 1012 Second St. Anacortes, WA 98221 360.293.8488
	Storage Tote/ Cage 	Storage Tote: Length 79 in. 200 cm. Width 46.5 in. 118 cm. Height 41 in. 104 cm. Weight 342 lbs. 155 kg. A heavy duty polypropylene storage container that is ready to attach to the deck. The line is faked into the container for easy attachment and deployment.	Western Region Bonar Plastics 6111 South Sixth Avenue Ridgefield, WA 98642 360.887.2230

ETS System	Component	Specifications	Manufacturer
Smaller ETS < 50,000 DWT cont.	Cargo Net 	18 ft. x18 ft. (5.5 m. x 5.5 m.) 65 lbs. (49.5 kg.)	Arctic Wire Rope and Supply, Inc. 6407 Arctic Spur Road Anchorage, AK 99518-1545 800.478.0707
Larger ETS > 50,000 DWT  Weight: 1,740 lbs (789.25 kg.) with Tote/cage 1,400 lbs (635.03 kg.) without Tote/cage Note: does not include weight of miscellaneous equipment (see below)	Tow Line 	ETS-900: Diameter 10 in. 25 cm. Circumference 31 in. 80 cm. Length 350 ft. 107 m. Breaking Strength 900,000 lbs. 4,000 KN The ETS-900 is made of 12 Strand Plasma® and is suitable for ships over 50,000 DWT. The tow lines are floating lines in a soft, torque-free braided construction with a high visibility urethane coating. Unlike Kevlar®, these tow lines do not require special large radius chocks or fairleads and can be handled in the same manner as regular towing hawsers.	Cortland Puget Sound Rope 1012 Second St. Anacortes, WA 98221 360.293.8488
	Tug Thimble 	Tug Thimble: Length 18 in. 457 mm. Width 14 in. 356 mm. Thickness 6 in. 152 mm. Weight 45 lbs. 20 kg.	Kulkoni Inc. 502 Golden Oaks Blvd. Houston, Texas 77018 800.231.3973
	Tow Line Chafing Gear 	Anso-Tex® Chafe Guard is a lightweight, tubular cloth made of a special abrasion-resistant nylon. This type of chafe guard is known under several trade names such as cordura, shark skin, and ballistic nylon. It is the lightest weight chafe protection and has excellent snag resistance due to its tight weave. Due to the light weight, it does not offer as much protection or last as long as braided chafe guard under severe chafe conditions.	Southern Weaving Company - Sleeving Products 210 Fern Street PO BOX 558 Easley, SC 29641 Phone: 864.859.7531 Ext. 20 Fax: 864.859.7532 Email: sales-easley@southernweaving.com
	Extra Chafe Guard 	15 ft. (4.6 m.) sections of HMPE-Velcro 8 lbs. (3.6 kg.)	Arctic Wire Rope and Supply, Inc. 6407 Arctic Spur Road Anchorage, AK 99518-1545
	Messenger Line 	Messenger Line: Diameter 7/8 in. 2 cm. Circumference 2 3/4 in. 7 cm. Length 600 ft. 183 m. Breaking Strength 45,000 lbs. 200 KN The Messenger Line is capable of towing vessels under 2000 DWT.	Cortland Puget Sound Rope 1012 Second St. Anacortes, WA 98221 360.293.8488
	Lighted Pick-up Buoy 	A manually-activated lighted buoy with sea anchor attached that is small enough to fit through any chock that will accept the tow line thimbles. ACR Electronics Automatic Man Overboard light SM2. Replacement Batteries: D-cell	ACR Electronics, Various Vendors

ETS System	Component	Specifications	Manufacturer
Larger ETS > 50,000 DWT cont.	Storage Tote/ Cage 	Storage Tote/Cage: Length 79 in. 200 cm. Width 46.5 in. 118 cm. Height 41 in. 104 cm. Weight 342 lbs. 155 kg. A heavy duty storage cage that is ready to attach to the deck. The line is faked into the container for easy attachment and deployment.	Western Region Bonar Plastics 6111 South Sixth Avenue Ridgefield, WA 98642 360.887.2230
	Cargo Net 	18 ft. x 18 ft. (5.5 m. x 5.5 m.)	Arctic Wire Rope and Supply, Inc. 6407 Arctic Spur Road Anchorage, AK 99518-1545 800.478.0707
	Hoisting Straps 	2 - 16 ft. 2 in. Hoisting Straps for response container. Basket Hoisting weight: 12,800 lbs. (5,805.98 kg.)	
Optional Equipment	Helicopter pendants and slings 	Pendant: MK 105 Mod 0 Reach Pendant (part number 2643484), Weight: 38 lbs. (17.24 kg.) Slings: Length 90 ft. 27 m. Width 1.5 in. 4 cm. Weight 82 lbs. 37.2 kg. Working Load 7 tons 6,350 kg. Maximum Load 14 tons 12,700 kg. Length 50 ft. 15 m. Width 1.5 in. 4 cm. Weight 44 lbs. 19.96 kg. Working Load 7 tons 6,350 kg. Maximum Load 14 tons 12,700 kg.	Arctic Wire Rope and Supply, Inc. 6407 Arctic Spur Road Anchorage, AK 99518-1545 800.478.0707
	Ratchet straps for securing tote/ cage to deck 	4 - 12 ft. (3.65 m.) ratchet straps and 4 - 24 ft. (7.3 m.) ratchet straps (2 in. (5 cm.) webbing) Two of each size stored with each ETS	
	Safety shackle 	4 @ 7/8 in. (2.2 cm.) galvanized bolt/nut safety shackle and small tool kit to retrieve or bend the cotter pin to shackle. Safe working load of 9.5 tons (8618 kg.).	Arctic Wire Rope and Supply, Inc. 6407 Arctic Spur Road Anchorage, AK 99518-1545 800.478.0707
	Towing Shackle 	Marquip 2.5 in. Anchor Pattern: Pin Diameter 2.5 in. 64 mm. Jaw Width 4.5 in. 114 mm. Reach 10 in. 254 mm. Bow Width 7.5 in. 191 mm. Eye Width 5.5 in. 140 mm. Weight 86 lbs. 39 kg. Safe Working Load 5:1 71 tons 64,400 kg.	Washington Chain Supply, Inc. PO Box 3645 Seattle, WA 98124 206.623.8500
Instruction Manual and Placards	ETS Manual 	ETS manual and placards for Ship-to-tug deployment. Weight: 2 lbs.	Nuka Research & Planning Group, LLC PO Box 175 Seldovia, AK 99663 907.234.7821

STORAGE LOCATIONS

Emergency Towing Systems are stored at nine locations around the State of Alaska. At each location, there is an ETS Custodian who is responsible for the storage and security of the ETS. The statewide ETS program is the responsibility of the ETS Workgroup and the ETS Coordinator. Contact information for the ETS Coordinator and Custodians may be found in Appendix A.

Illustration sl-1 shows the approximate locations for each ETS component in Alaska. The ADEC Logistics Section, USCG DRAT and/or Local government Port/Harbormaster has access to and knowledge of the exact location of each of the ETS components, except for the helicopter cargo hook, which will be mobilized with the assigned USCG air asset.

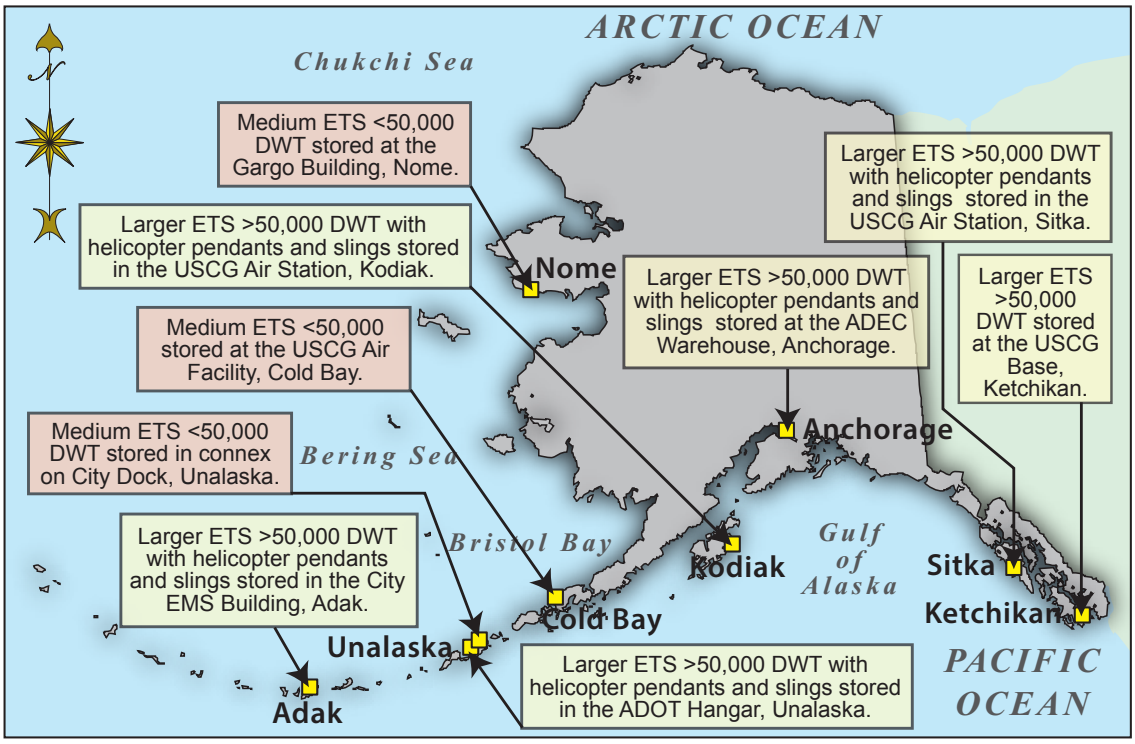


Illustration sl-1. Approximate locations of ETS components in Alaska.

This page is intentionally blank.

PROCEDURES

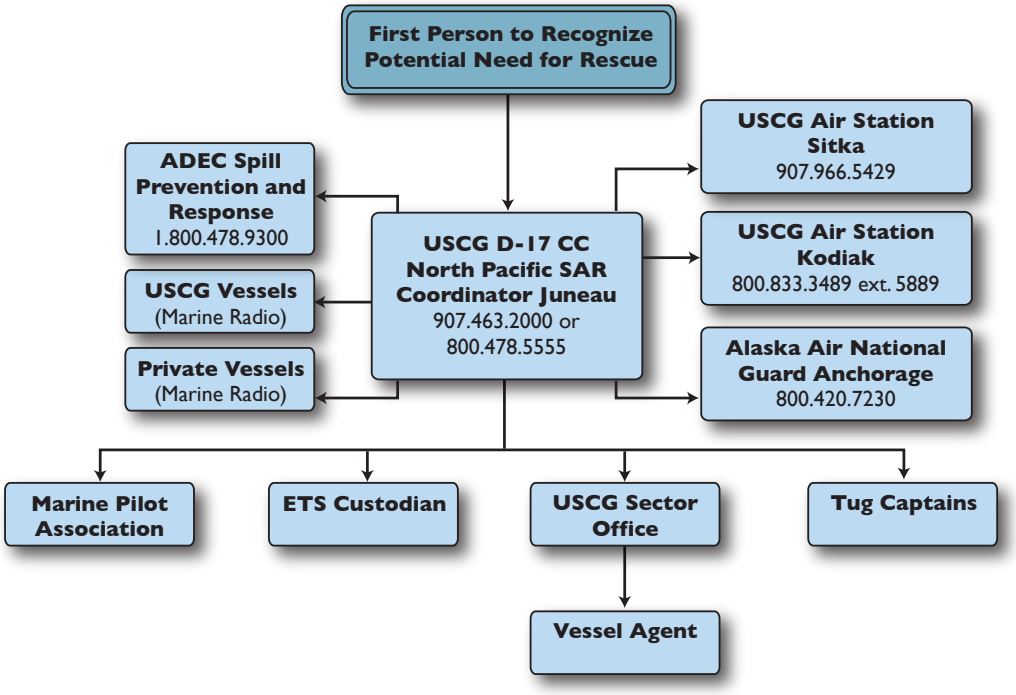
ACTIVATION, CALL-OUT

Overview

There are two ETS maintained for immediate deployment from the Port of Dutch Harbor, one ETS each staged at USCG Air Station Kodiak and Sitka, one ETS staged at the Navy Supervisor of Salvage equipment warehouse at Fort Richardson, and one 10" system staged in the City of Adak.

While the distressed ship's master is usually the first person to identify the problem, others may be the first to report the situation, including marine pilots, City/ Ports personnel, other mariners, the AMX, or the USCG. Once the potential need for an ETS is identified, the system must be activated in anticipation of mobilization. Activation involves the immediate notification and coordination of all the parties involved in ETS mobilization and deployment. (See Illustration ac-1)

The USCG has jurisdiction over the movement of vessels in US waters and the responsibility to assume command and control of any search and rescue operation. However, there is a long tradition that requires any mariner to aid another mariner in distress. Prior to the establishment of a formal incident command, the USCG encourages all parties to take any actions that they deem safe and appropriate to aid a distressed ship.



- Verify initial notifications have all been made
- Coordinate with involved parties to size-up situation and inventory rescue assets
- Develop plan of action
- Make secondary notifications

Illustration ac-1. Initial activation and call-out of the ETS.

Detailed Procedures

1. The **first person** to recognize that a ship is in distress and may need towing assistance should make initial notification of the incident to:

   - USCG District 17, Command Center Juneau, North Pacific SAR Coordinator (NPSC)

   They may also notify the following parties:

   - Local Government/Port and Harbor Office (Harbormaster)
   - ETS Custodian
   - Captains of Rescue Vessels

   The contact numbers for each of these organizations are listed in Appendix A of this manual.

2. The **NPSC** should take the following actions

   a. Establish an On Scene Coordinator and utilize the "Alaska Federal/State Preparedness Plan for Response to Oil & Hazardous Substance Discharges/ Releases (Unified Plan)", Annex P – Marine Firefighting, Vessel Salvage & Lightering to begin preparing the Incident Action Plan.

   b. Verify that the parties listed in #1(above) have been notified and make additional notifications to:
      - USCG, Sector Anchorage and/or Juneau
      - ADEC
      - USCG, MSD, Detachment Commander (USCG Detachment Commander)
      - USCG, Air Station Kodiak
      - USCG, Air Station Sitka
      - Alaska Air National Guard
      - Coast Guard Vessels and Private Vessels of Opportunity
      - Ship's agent (if any)

   c. Attempt to contact the distressed ship and ascertain the ship's situation, the master's intentions, and means to maintain regular contact with the ship's master. (VHF or satellite telephone).

   d. Determine the distressed ship's position, direction and rate of drift, and distance and estimated time to any possible grounding location.

   e. Determine the weather and sea conditions at the scene and the transit route to a safe harbor/place of refuge.

   f. Determine the short and long term marine forecast for the area of the incident.

   g. Determine the location and identification of potential rescue tugs in the vicinity of the distressed ship.

   h. Determine the capabilities of potential rescue tug(s).

   i. Coordinate search and rescue operation

   j. Coordinate requests for other resources

   k. Establish an incident log and ICS 201 briefing form

3. The **ETS Custodian** may consider taking the following actions:
    a. Verify that the parties listed in #1 (above) have been notified and make additional notifications as necessary.
    b. Callout additional support personnel, if needed.
    c. Ensure ready access to the ETS storage location. Remove snow and ice as necessary.
    d. Determine the availability of dock and crane space in the Port and make any necessary arrangements for possible delivery of the ETS to a rescue tug.
    e. Arrange for a forklift and flatbed truck to mobilize the ETS to dock or airport.
    f. Notify the City Manager or local authorities of the incident.
    g. Begin logging all activities and actions.
4. The **ADEC** may consider taking the following actions:
    a. Make notifications and develop contingencies for a possible oil spill.
    b. Determine the amount and type of oil onboard the stricken vessel.
    c. Begin logging all activities and actions.

Safety Considerations

- Determine current and forecasted weather and sea state at the scene and between the scene and a safe harbor.
- Assess the visibility, wind, and icing situation that may impact helicopter mobilization.
- Determine what personal protective equipment (PPE) is available to the deck crews on the distressed ship and potential rescue tugs.
- Indicate safety hazards (i.e. hypothermia, falling overboard, ice, visibility, slips-trips-falls) to all personnel involved in the response.
- Consider developing an incident safety plan.

Operational Considerations

- Assess the availability of potential rescue tugs and helicopters.
- Determine the mobilization times for each option**.**
- Determine the following information for the distressed vessel:
    - Size of vessel and appropriate ETS to mobilize,
    - Location,
    - Rate of drift, and
    - Distance and time to grounding.
- Vessels under 2000 DWT may be towed using the Messenger Line only.
- Determine the following information for any potential rescue tug:
    - Tug length
    - Horse power
    - Bollard pull
    - Number of crew onboard
    - Is the tug currently towing a barge?

- Is there a line gun onboard?
- Is there a crew member onboard that is trained to use the line gun?
- Towing Wire and Eye size
- Towing Shackle size
- Maximum safe speed in current conditions

MOBILIZATION VIA HELICOPTER

Overview

The ETS may be airlifted to the distressed ship via USCG helicopter or an available private helicopter with adequate sling capabilities.. USCG aircrews are highly trained to execute this type of aerial lifting operation. This manual describes procedures relevant to the other parties involved in mobilization. To increase operating range and facilitate rapid response, consider transporting the ETS via fixed wing airplane to an airport nearer the stricken vessel. Helicopter deployment can be initiated from the closer location. The USCG aircrew will provide specific directions once on scene.

The ETS Custodian will be responsible for mobilizing the appropriate ETS system from its storage location to the airport. The smaller system is rated for vessels under 50,000 DWT. The larger system is for ships greater than 50,000 DWT. The Messenger Line has the capability of towing vessels less than 2,000 DWT. In addition to the ETS and helicopter, aerial mobilization requires:

- Cargo pendant and sling (stored with the ETS)
- Cargo net with tag lines (ETS is stored in a tote/cage lined with a cargo net for quick deployment)
- ETS Manual and Placard (stored with ETS)

The primary goal of load preparation is to create a load that is safely transported and arrives at the destination undamaged. Consider the following:

- External loads are subject to extremely high winds during transportation, and shall be prepared accordingly.
- Delivery of the ETS to the distressed ship requires a 15-ft. obstruction clearance at all times.
- These operations should not normally be conducted above Sea State 4 (winds of 18-20 knots and waves of 5-8 ft.).

Detailed Procedures

1. Review *Activation, Call-out* procedures, if necessary.
2. Review *System Components and Nomenclature*, if necessary.
3. See Appendix A of this manual.
4. Once it is decided to mobilize the ETS via helicopter, the ETS Custodian coordinates with the USCG Sector and/or Detachment Commander to determine the ETA of the helicopter at the nearest usable airport. They will then consult with a marine pilot, rescue tug captain, or ship's agent to choose the most appropriate ETS and select a helipad location at the airport.
5. The ETS Custodian will arrange to move the ETS Tote/cage, pendants and cargo hook to the staging location by truck. A forklift will be needed at the helipad location to unload the truck. Use the ETS Mobilization Checklist - Helicopter on page 24 to insure all necessary equipment is mobilized. The ETS Custodian should coordinate with the tug master to establish the availability of a shackle onboard the tug with a minimum SWL of 85 tons. Use of a pre-positioned shackle can reduce the weight by 88 lbs. (40 kg.).

6. The ETS Custodian should confirm the ETS weight and that the tamper-proof band is intact. Prior to airlift operations, this band and the ETS tote lid must be removed.
7. Conduct a Foreign Object Damage (FOD) walk-around at the helipad. Consider sweeping loose dust or snow from the staging location to reduce blowing debris from rotor wash. All vehicles should be removed from 500 yard safety zone surrounding the helicopter landing site.
8. Once the helicopter arrives at the helipad, the ETS Custodian should communicate the weight of the ETS (not including the Tote/cage) to the aircraft pilot. The pilot is responsible for calculating the range, time-aloft, and fuel requirements for the flight. See matrix on page 23 for helicopter capabilities.
9. USCG aircrew normally attaches the reach pendant to the helicopter. All other personnel should stay back at least 200 ft. If other personnel are requested to perform this hook-up operation, they will be given specific instructions by the aircrew.
10. Before any ETS delivery operations, the distressed ship's master should be briefed on the following items, at a minimum:
    a. The drop off area must be agreed to by both the ship's master and the aircraft commander. The optimal area is the bow or forepeak. The crew should mark the target area with high visibility tape or paint.
    b. The ship's master shall ensure that a FOD walk-around is conducted as thoroughly as possible before commencing operations. This should include examining the drop off area and removing or securing lightweight and small items.
    c. Procedures to follow in the event of an emergency.
    d. Relative wind direction for drop off.
    e. The helicopter's approach will be announced to the ship's deck crew, as feasible.
    f. Only personnel needed to conduct ETS delivery operations should be allowed on deck. If Tag Lines are attached to the ETS, the ship's master should be informed of procedures for their use.
    g. The helicopter shall be clear of the disabled ship before the deck crew moves in to unpack the ETS.
    h. The ship's crew must be warned of the danger associated with static discharge, and instructed not to touch the load until the helicopter has released the cargo hook and the ETS is safely on deck.
    i. Radio communications with the helicopter will likely take place on VHF Channel 21A. While the helicopter is in a hover over the ETS delivery zone, restrict all radio traffic with the helicopter to urgent communications only. All other communications should switch to working VHF Channel 66.
    j. No flash photography or spotlights during delivery operations.
11. The helicopter will normally complete the approach into the wind, arriving in a hover just off the disabled ship.
12. When the helicopter's approach is announced, all ship's personnel must clear the ETS delivery area unless Tag Lines are used and then only the necessary personnel should remain to guide the load onto the deck of the ship.

13. The pilot transmits to the disabled vessel via radio: “Request permission to hover for ETS delivery.”
14. The ship’s master answers: “Roger, you are cleared to hover for ETS delivery.”
15. The pilot, guided by commands from the designated helicopter crewman, maneuvers the helicopter over the ETS delivery area.
16. The designated helicopter crewman gives directions for spotting and lowering the load. As soon as the load is on deck, the crewman informs the pilot.
17. When the pendant slackens, the pilot or crewman (as briefed) releases the cargo hook.
18. In extreme winds or sea states, as a last resort, the ETS may be released from above the ship and allowed to fall onto the deck of the disabled ship.

Photographs

Photograph mh-1. ETS (less than 50,000 DWT system) in cargo net lined prepared for helicopter deployment.

Photograph mh-2. Aircrew member demonstrates attaching the pendant to the cargo release hook.

Photograph mh-3. USCG H65 helicopter and ETS prepared for deployment.

Photograph mh-5. Helicopter pendants and slings stored with large ETS at the DOT Airport Hangar.

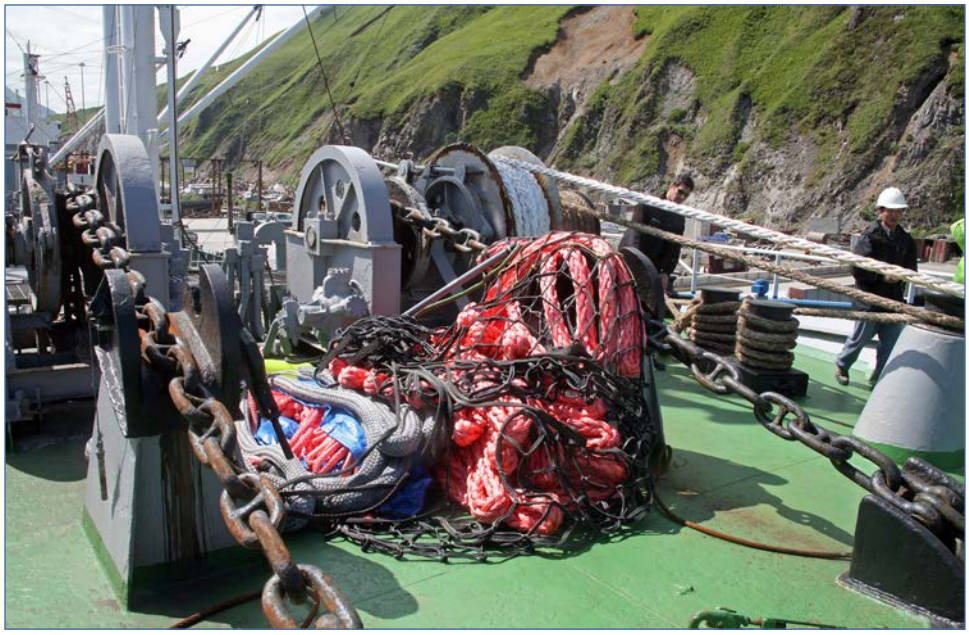
Photograph mh-4. USCG ground crew hooking ETS MK 105 pendant to hovering helicopter.

Photograph mh-5. USCG helicopter lifting ETS and cargo net from storage tote/cage.

Photograph mh-6. USCG helicopter delivering ETS to the ship's bow; no deck crew on bow of ship.

Photograph mh-7. Extreme winds caused by helicopter prop-wash.

Photograph mh-8. 15-ft. clearance to obstacles and a deck free of debris are required.



Photograph mh-9. ETS in cargo net immediately after helicopter delivery.

Safety Considerations

- Personnel will follow established safety procedures.
- Everyone should be alert for slips, trips, and fall hazards. The ground crew should have radio communications available, a headset preferred, to coordinate the lift with the helicopter pilot.
- Anyone within 50 ft. of lifting operations must have a hard hat and steel toe shoes.
- Beware of backing equipment and aircraft movements.
- Anyone at the airport staging area should be aware of helicopter noise and rotor wash. Hearing and eye protection are required. Observers should stay at least 200 ft. from the helicopter during lifting operations.
- Do not use pendants greater than 50 feet for vessels 175 feet or less.
- At the ship, once the helicopter has been cleared to hover, only personnel required to man the Tag Lines should be allowed in the ETS delivery area. If Tag Lines are *not* used, personnel should not attempt to steady the load until it has been released and is safely on board.
- At the ship, once the helicopter has been cleared to hover, personnel shall not enter the ETS delivery area until after the load is on deck. Personnel should *not* attempt to steady the load until it has been released and is safely on board.
- Personal Flotation Device (PFD), hearing protection, safety glasses, and hard hats with chinstraps are required for anyone on deck of the distressed ship.
- Under no circumstance shall flash pictures be taken during night ETS delivery, as the flash will temporarily blind the pilot.
- Lightweight loads can be blown up into the bottom of the helicopter, or fly up into the rotor blades.

- Never attach the pendant to any point other than the Cargo Release Hook. Never connect a load in any way other than directly to the safety hook. Kinking and chafing will damage the lifting equipment.
- The deck crew on the distressed ship should be stationed well clear of the ETS delivery area. Ideally, the helicopter pilot will maintain direct visual contact with the designated crewman at all times; however, the pilot can request the aircrew to relay signals if necessary.
- The pilot shall maneuver the helicopter to see and avoid all obstructions.
- Releasing the load before there is slack in the pendant can cause damage to the aircraft, vessel, load, and/or injury to personnel.
- The sling may not immediately release from the aircraft cargo hook. If the sling hangs up, the pilot shall initiate a slow vertical climb, gradually applying tension until it separates from the hook.
- Never cut nets, beckets, or cargo wrap-around straps.

Operational Considerations

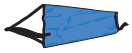
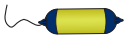
- A 15-ft. obstruction clearance must be maintained throughout delivery of the ETS.
- These operations should not normally be conducted above Sea State 4 (winds of 18 to 20 knots and seas of 5 to 8 feet). The USCG will grant exceptions on a case-by-case basis.
- Verify the weight of the ETS and notify the aircraft pilot.
- The following items should be considered when deciding to mobilize the ETS via helicopter.
    - Availability of helicopter and ETA at the selected airport.
    - Distance from airport to distressed ship.
    - Distance and time the distressed ship has before grounding.
    - Ability to utilize fixed wing aircraft to transport the system to an airport closer to the vessel in distress for helicopter or tug mobilization.
    - Weather, visibility, and sea state at the selected safe harbor, the route of flight, and the distressed ship's location.
    - Availability of other means of mobilization, such as rescue tug or other vessel.
    - See following page for helicopter capability matrix.
    - Is the towing shackle necessary? If not, removing the shackle will lighten the sling load by 88 lbs. (40 kg.).

Helicopter Capability Planning Matrix

	HH-60 Jayhawk	HH-65 Dolphin	HH-60G Pave Hawk	Eurocopter AStar
				
Air speed, unladened	Max Airspeed 140 kts. Cruise 125 kts.	Max Airspeed 140 kts. Cruise 120 kts.	Max Airspeed 140 kts. Cruise 125 kts.	Max Airspeed 137 kts.
Endurance *(hours between refueling)*	6 hours	3 hours	3.5 hours	4.2 hours
Lift capacity *Sling weight is limited by the amount of fuel that must be carried to complete the mission*	Sling Weight – 2000 lbs. Fuel Weight – 4460 lbs. Hoist Capacity – 600 lbs.	Sling Weight – 1000 lbs. Fuel Weight – 900 lbs. Hoist Capacity – 600 lbs.	Sling Weight – 2000 lbs. Fuel Weight – 2500 lbs. Hoist Capacity – 600 lbs.	Sling Weight – 3086 lbs. Fuel Weight – 939 lbs.
Air speed with ETS	To be determined, each load is unique depending on winds, weather, sling length and load configuration. For planning purposes 50-70 kts.	To be determined, each load is unique depending on winds, weather, sling length and load configuration. For planning purposes 50-70 kts.	To be determined, each load is unique depending on winds, weather, sling length and load configuration. For planning purposes 50-70 kts.	To be determined, each load is unique depending on winds, weather, sling length and load configuration. For planning purposes with ETS - Max. 80 kts. - best range at 60 kts.
Max winds for swing load	Aircraft is only limited by winds when engaging the rotor head which is 60 kts. Max.	Aircraft is only limited by winds when engaging the rotor head which is 55 kts. Max.	Aircraft is only limited by winds when engaging the rotor head which is 45 kts. Max.	

ETS Mobilization Checklist – Helicopter

Vessel Name:	Vessel Call Number	Date/Time of Notification:
Vessel Length:	**Vessel DWT:**	**Position/Latitude/Longitude:**
Nature of Distress/Casualty:	**Actions Taken Toward Casualty:**	
Vessels of Opportunity Available to Respond (Name and Call Number):		
1)	2)	3)
Helicopter Available to Respond (Type and Call Sign):	**Helicopter ETA at location of ETS Pick Up:**	
Other Notes:		

ETS Equipment Mobilized by Helicopter	Weight if Applicable
ETS System ☐ Tow Line (500 ft./152 m. or 350 ft./106.7 m.):  ☐ Messenger Line:  ☐ Cargo Net:  ☐ Sea Anchor:  ☐ Lighted Buoy:  ☐ Thimble Buoys (2):  ☐ 7/8 in. (2.2 cm.) Safety Shackles (4) with cotter pins: 	Larger ETS @ 1,400 lbs./645.03 kg. Smaller ETS @ 932 lbs./423 kg.
Optional Shackle for Tugs w/o One (to be mobilized only when necessary) ☐ 2.5 in. (6.35 cm.) Towing Shackle 	88 lbs (39.9 kg.)
Pendant and Sling: ☐ 50 ft. (15.24 m.) Sling*:  ☐ 100 ft. (30.48 m.) Sling*:  ☐ Reach Pendant:  ☐ 16 ft. 2 in. Wide Container Hoisting Straps (2):  *Discuss options with Helicopter Pilot	Slings @ 44 lbs per 50 ft. (20 kg. per 15.2 m.) Hoisting Straps - basket lifting weight 12,800 lbs. (5,805.98 kg.)
Miscellaneous Equipment ☐ Instruction Manual:  ☐ Instruction Placard: 	Instruction Manual @ 2 lbs. (0.9 kg.)

MOBILIZATION VIA TUG

Overview

The ETS may be mobilized to the rescue tug for tug-to-ship deployment. Tug crews are highly trained and experienced in towing operations. Due to the nature of the emergencies and situations that may arise, additional crew members maybe required. During training exercises, 4-5 crew on board a tug were most effective in handling the ETS safely. The manual covers mobilizing all of the necessary equipment to the tug and gives guidance based on past exercises and the experience of the ETS Workgroup members.

The ETS Custodian will coordinate with the rescue tug captain to choose a dock for transferring the ETS. The ETS Custodian will be responsible for mobilizing the appropriate ETS system from its storage location to the dock. In addition to the ETS Tote/cage the following items must be mobilized to the tug:

- Ratchet-straps (stored with the ETS) for lashing the ETS to the deck.

The primary goal of load preparation is to create a load that is safely transported and arrives at the destination undamaged. Consider the following:

- The tug may experience heavy seas with decks awash during the transit to the scene.
- Delivery of the ETS to the rescue tug requires a dock with ample depth and a suitable crane for lifting the ETS. A list of available docks with contact information is maintained by the Harbormaster.
- Lighting may also be required during darkness.

Detailed Procedures

1. Review Activation, Call-out procedures, if necessary.
2. Review System Components and Nomenclature, if necessary.
3. See the Storage Locations Appendices in this manual for specific contact information and location details.
4. Once it is decided to mobilize the ETS via rescue tug, the ETS Custodian coordinates with the tug master to choose a dock for transferring the ETS. The dock face must have water depth to accommodate the tug, a crane or boom is required, and adequate lighting should be provided. In some cases, vessels already at the dock may have to be moved. The ETS Custodian and tug master may establish an ETA for the tug at the dock.
5. The ETS Custodian will consult with a marine pilot, rescue tug captain, or ship's agent to choose the most appropriate ETS.
6. The ETS Custodian will arrange to move the ETS Tote/cage (with ratchet-straps for lashing) to the transfer dock by truck.
7. Use the ETS Mobilization Checklist - Tugboat on page 28 to insure all necessary equipment is mobilized.
8. The ETS will be transferred to the rescue tug using the normal hoisting procedures by experienced personnel properly trained with the correct personal protective equipment. Two 16 ft. by 2 in. hoisting straps will be provided to assist with the transfer to the rescue tug.

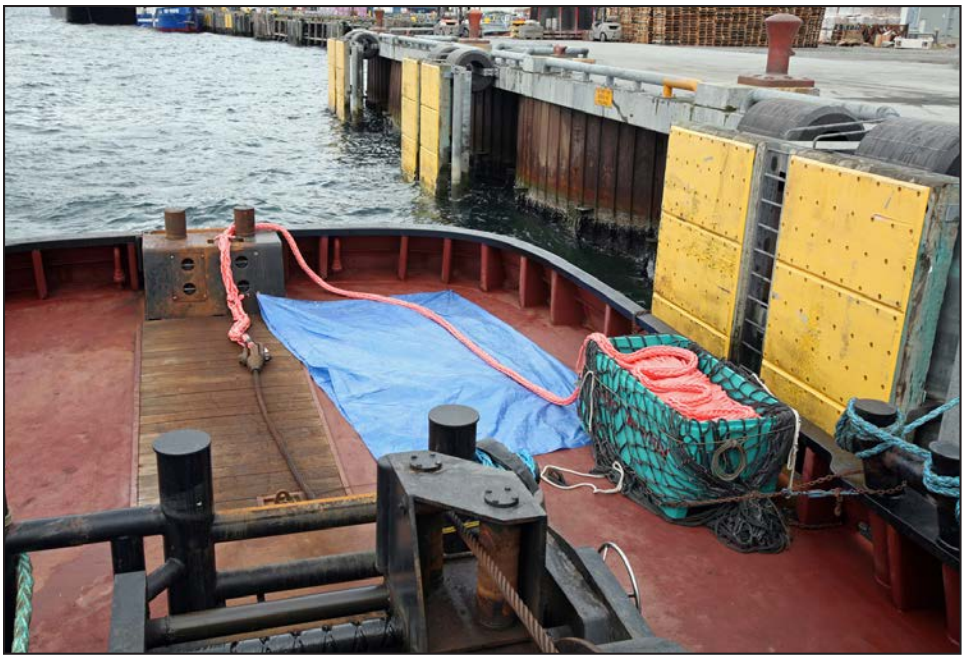
9. Once the ETS is on the deck of the rescue tug, the tug's crew will lash the ETS Tote/cage on deck with the "Deploy From Here" labeled corner to the aft and inboard. The tote/cage will be secured for heavy seas.
10. The ETS Custodian and tug master will confirm that the following necessary equipment is onboard in a final shoreside briefing before the tug departs:
    - ETS, including Pick-up Buoy
11. The Rescue Tug Captain with also verify before departure that he has the proper shackle to attach the ETS thimble to his tow-wire.
12. Consider taking a marine pilot to facilitate communications at the scene.

Photographs

Photograph mt-1. ETS delivered to rescue tug at dock and lashed to deck with "Deploy From Here" corner to the aft and inboard.

Safety Considerations

- Port personnel will follow established safety procedures.
- Everyone should be alert for slips, trips, and fall hazards.
- Anyone within 50 ft. of lifting operations must have a hard hat and steel toe shoes.
- Beware of backing equipment and vehicle movements.
- PFD, hearing protection, safety glasses, and hard hats with chinstraps are required for anyone on deck of the rescue tug.



Photograph mt-2. ETS Tow Line shackled to tug's tow wire.

Operational Considerations

- Verify the ETS thimble can be shackled to the rescue tug's tow wire. The large ETS requires a minimum shackle size of 2.5 in. with a SWL of at least 71 tons.
- The following items should be considered when deciding to mobilize the ETS via tug.
  - Tugs with low free-board and wet decks will have difficulty deploying the ETS in high seas. Consider the alternative of a ship to tug deployment.
  - Distance from Port of mobilization to distressed ship
  - Distance and time the distressed ship has before grounding
  - Weather, visibility, and sea state at the selected safe harbor/place of refuge, the route to, and the distressed ship's location
  - Availability of other means of mobilization, such as a helicopter or other vessel

ETS Mobilization Checklist – Tugboat

Vessel Name:	Vessel Call Number	Date/Time of Notification:
Vessel Length:	**Vessel DWT:**	**Position/Latitude/Longitude:**
Nature of Distress/Casualty:	**Actions Taken Toward Casualty:**	
Vessels of Opportunity Available to Respond (Name and Call Number)		
Dock Where ETS Will Be Loaded:	**Time ETS Will Be Loaded:**	
Other Notes:		

ETS Equipment Mobilized by Tugboat	Weight if Applicable
ETS System ☐ Tow Line (500 ft./152 m. or 350 ft./106.7 m.):  ☐ Messenger Line:  ☐ Cargo Net:  ☐ Thimble Buoys (2):  ☐ 7/8 in. (2.2 cm.) Safety Shackles (4) with cotter pins:  ☐ Tote/Cage:  ☐ Ratchet Straps (4):  ☐ 2.5 in. (6.35 cm.) Towing Shackle:  ☐ 2 - 16 ft. 2 in. Container Hoisting Straps:	Larger ETS @ 1,400 lbs./635.03 kg. Smaller ETS @ 932 lbs./423 kg. Shackle @ 86 lbs. (39.0 kg.) Hoisting Straps maximum lifting weight: 12,800 lbs. (5805.98 kg.)
Miscellaneous Equipment ☐ Instruction Manual:  ☐ Instruction Placard: 	Instruction Manual @ 2 lbs. (0.9 kg.)

SHIP-TO-TUG DEPLOYMENT

Overview

The ETS can be mobilized to the distressed ship and deployed from the ship to the rescue tug. This is most likely done by dropping the ETS onto the deck of the distressed vessel via helicopter. (This procedure is covered in Mobilization via Helicopter). Once the ETS is dropped onto the deck of the ship, the ship's crew must unpack the ETS and arrange it on the deck of the ship for deployment according to instructions given via radio and the illustrated placard included with the ETS. After the ETS is arranged and the rescue tug is in the general vicinity of the distressed ship, the ship's master may order the ETS to be deployed by throwing the Lighted Pick-up Buoy overboard. The ship will drift away from the ETS so the Pick-up Buoy, Sea Anchor, Messenger Line, and Tow Line will trail up-wind. The rescue tug will catch the Messenger Line and haul it in to retrieve the Tow Line. When the Tow Line is made up to the tug's tow wire, towing can commence.

Detailed Procedures

1. Review *Mobilization via Helicopter* if applicable.
2. Review *System Components and Nomenclature*. (Illustration st-1)
3. Once the ETS is delivered to the distressed ship (Illustrations st-2, st-3, & st-4), instruct the ship's crew to find and review the Instructions placard delivered with the ETS.
4. Reconfigure the ETS for ship-to-tug deployment. (The ETS will be packed for tug-to-ship deployment.) Remove components from the cargo net and organize as follows.

   First determine if the Tug's Thimble will fit through the ship's bullnose (the Tug's Thimble on the smaller ETS is 10 in. (25.4cm.) long x 12.25 in. (31.1cm) wide x 4 in. (10.2 cm.) thick and weighs 20 lbs. (9.1 kg.), on the larger ETS it is 18 in. (45.7cm.) long x 14 in. (35.6cm) wide x 6 in. (15.2cm.) thick and weighs 45 lbs.(20.4kg.). If the thimble will fit through the bullnose use procedure 4a, if not use 4b.

   4a. Shipboard ETS configuration if Tug's Thimble will fit through the ship's bullnose.
   - i. 6 ft. (1.83 m.) Ship's Eye end of the Tow Line secured to the ship's bit or anchor chain,
   - ii. Tow Line (500 ft./152 m. or 350 ft./106.7 m.) faked on the ship's deck to allow it to run freely,
   - iii. 600 ft. (182.88 m.) Messenger Line shackled to the Tug's Thimble,
   - iv. Thimble Buoy tied to the Tug's Thimble,
   - v. 600 ft. (182.88 m.) Messenger Line faked on the deck to allow it to run freely,
   - vi. Buoy end of the 600 ft. (182.88 m.) Messenger Line run out through the ship's bullnose and back over the rail,
   - vii. Lighted Pick-up Buoy secured to the Buoy end of the Messenger Line. (Illustration st-5), and
   - viii. Activate the lamp on the Lighted Pick-up Buoy before deployment.

   4b. Shipboard ETS configuration if Tug's Thimble will not fit through the ship's bullnose.
   - i. Run the 6 ft. (1.83 m.) Ship's Eye end of the Tow Line through the bullnose from the outboard side and secured to the ship's bit or anchor chain,

ii. Tow Line (500 ft./152 m. or 350 ft./106.7 m.) faked on the ship's deck to allow it to run freely,
iii. 600 ft. (182.88 m.) Messenger Line shackled to the Tug's Thimble,
iv. Thimble Buoy tied to the Tug's Thimble,
v. 600 ft. (182.88 m.) Messenger Line faked on the deck to allow it to run freely,
vi. Lighted Pick-up Buoy secured to the Buoy end of the Messenger Line. (Illustration st-5), and
vii. Activate the lamp on the Lighted Pick-up Buoy before deployment.

5. Once the ship's master has determined that the ETS is correctly configured and the rescue tug is close enough, the ETS can be deployed. (Illustration st-6) Deploy the ETS by throwing the Lighted Pick-up Buoy and Sea Anchor over the ship's windward rail and allowing the Messenger Line to pay out through the ship's bullnose. The ship should drift faster than the line in the water, causing the line to trail to the windward side of the ship. (Illustration st-7)
6. Once the Messenger Line is stretched out, feed the Tug's Thimble and Thimble Buoy through the bullnose and pay out the Tow Line.
7. The ship's crew must avoid letting the lines pay out too quickly. This may cause the lines to tangle so they do not trail away from the ship.
8. Once the lines are deployed, the ship's master must notify the rescue tug's master that the ETS has been deployed and the ship is ready for towing. VHF radio communication between the ship and rescue tug should be on Channel 21A. All other vessel communication should switch to a working channel.
9. The tug should approach the distressed ship from the windward and maneuver to retrieve the Messenger Line. In most cases this can be done by pointing into the wind and drifting or backing down alongside the Pick-up Buoy. (Illustration st-8)
10. The tug's crew will catch the Messenger Line with a flying gaff. (Illustration st-8)
11. The tug's crew will pull in the Messenger Line to retrieve the Tug's Thimble end of the Tow Line. The tug's master must maneuver to keep the Messenger Line from tightening during the retrieval process. The Messenger Line must not be tied off, but handled so it can be slipped if the line does tighten. Failure to allow slippage in heavy seas may result in loss of the tow line over board, damage to the equipment/vessel, and/or serious injury to crew members.
12. Once the Tug's Thimble is onboard the tug, the tug's crew shackles the thimble to the tug's tow wire. Use caution to ensure that the Tow Line does not tighten during this procedure. The Messenger Line should remain attached to the Tow Line until the Tow Line is secured to the tug's tow wire. A stopper line may be rigged to the Tow Line to prevent strain on the Tug's Thimble during the shackling procedure. (Illustration st-9)
13. Once the Tow Line is made-up to the tug's tow wire, no crew should be on the tug's aft deck or the ship's bow.
14. The tug's master then coordinates with the distressed ship's master and commences towing operations suitable to the circumstances of the incident. (Illustration st-10)

Illustrations

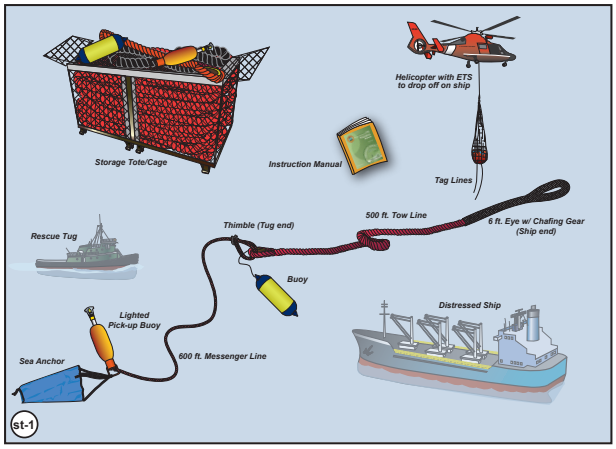


Illustration st-1. System components and configuration for deployment from ship to tug.

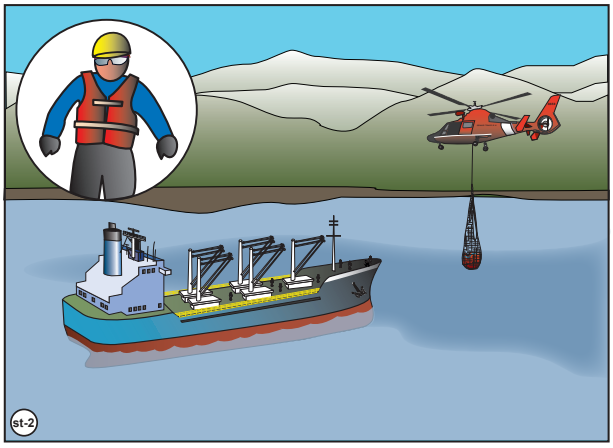


Illustration st-2. ETS being mobilized to distressed ship via helicopter.

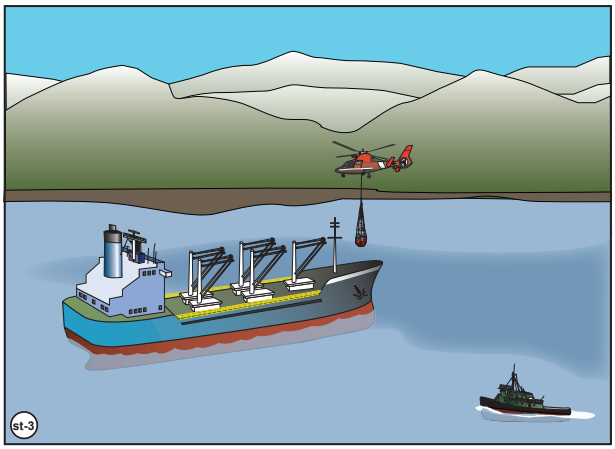


Illustration st-3. ETS landing on distressed ship via helicopter.

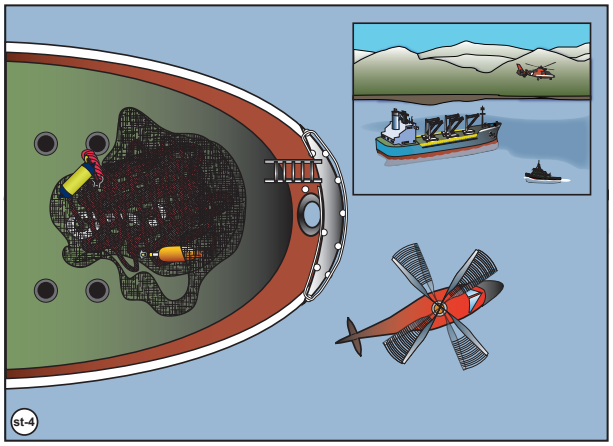


Illustration st-4. ETS in cargo net on the bow of the distressed ship.

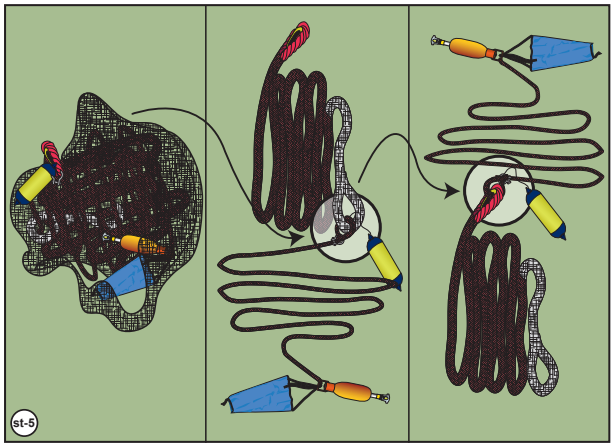


Illustration st-5. Unpacking and reconfiguring ETS for ship to tug deployment. Detach Messenger Line and buoy from the Ship's Eye and reattach the Messenger Line and buoy to the Tug's Thimble end of the Tow Line.

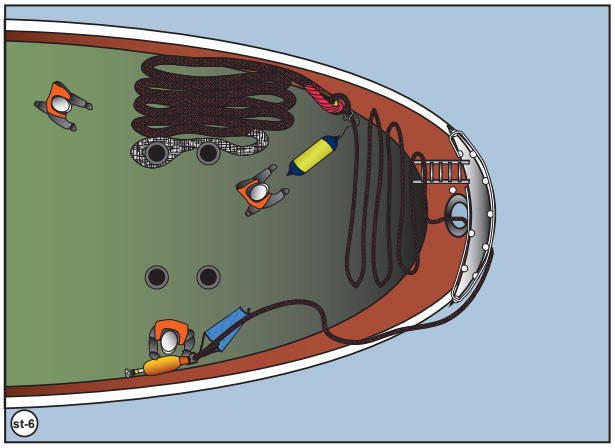


Illustration st-6. ETS arranged on distressed ship ready for deployment.

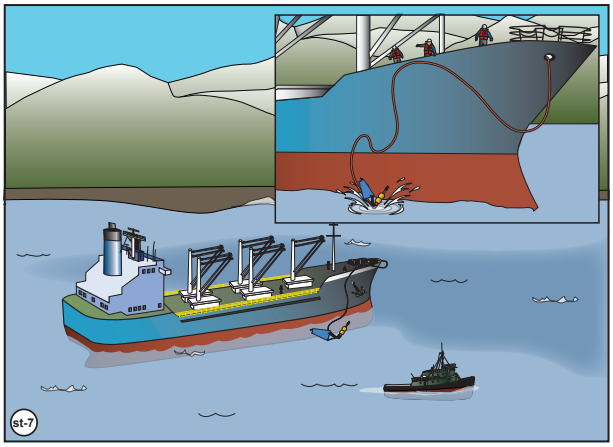


Illustration st-7. Launching Pick-up Buoy and Messenger Line from the distressed ship.

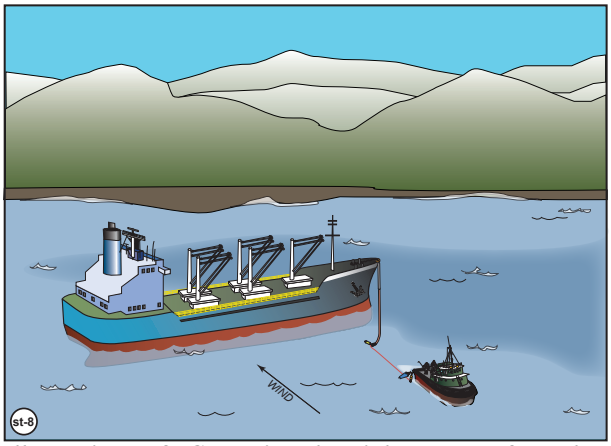


Illustration st-8. Capturing the Pick-up Buoy from the rescue tug.

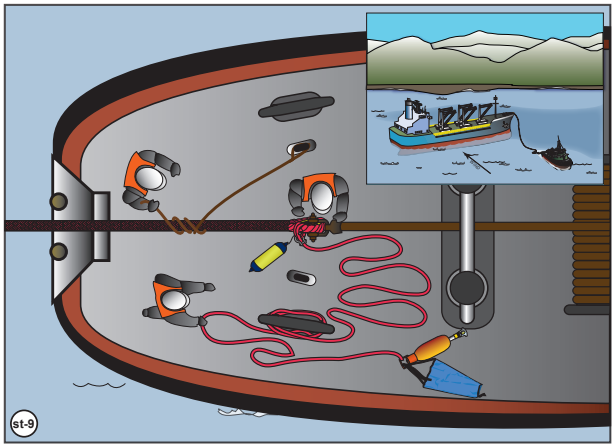


Illustration st-9. Shackling the Thimble end of the Tow Line to the rescue tug's tow wire.

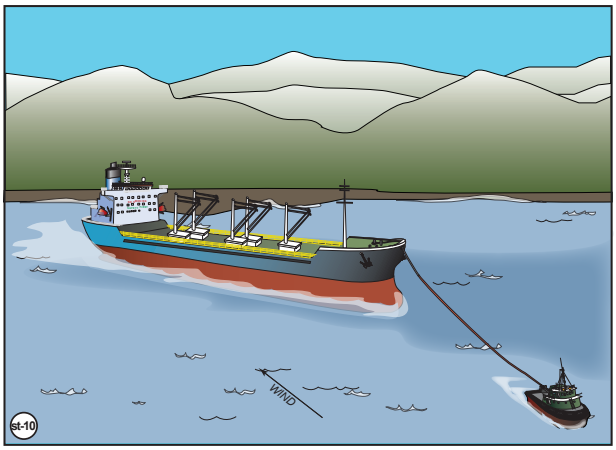


Illustration st-10. Rescue tug towing distressed ship.

Safety Considerations

- Both the vessel and tug crews should wear proper PPE while on deck, including:
  - PFD
  - Hard hat
  - Eye protection
  - Hypothermia protection (as appropriate)
- Good communication is essential between the masters of the vessels and between the master of each vessel and the vessels' deck crews. If possible, one crew member on each bridge should be assigned just to handle radio and/or satellite telephone communications.
- Take extreme care to ensure that the Tow Line and Messenger Line do not tighten until the Tow Line is made-up to the tug's tow wire. The Messenger Line should not be made fast. Consider using a "stopper line" on the Tow Line and tailing the Messenger Line during the haul-in and shackling process.

- No one should be allowed on the aft deck of the rescue tug or on the bow of the ship during towing operations.

Operational Considerations

- Positive aspects of the ship-to-tug deployment are:
  - The ETS can be mobilized long distances quickly via helicopter and the rescue tug does not have to come to a dock to receive the ETS.
  - Working with the ETS on-deck in adverse weather and sea state is generally safer on a ship than on a tug.
  - Once the ETS is deployed by the distressed ship's crew, they can move to the safety of the ship's wheelhouse.
  - The rescue tug can maintain a head into the weather orientation throughout the hook-up process, thus affording maximum protection for the tug's aft deck.
- Negative aspects of the ship-to-tug deployment are:
  - A helicopter may not be available to mobilize the ETS to the ship.
  - Dropping the ETS to the ship via helicopter is a dangerous operation for the helicopter crew and may be limited by weather/visibility.
- Tugs with low free-board and wet decks will have difficulty deploying the ETS in high seas. Consider the alternative of a ship to tug deployment.
- Multiple crew members should handle lines in a manner that allows for control during surges caused by seas.
- If possible, consider mobilizing a satellite telephone to the ship with the ETS and dedicating this device to communications between the ship's master, tug's master, and USCG.
- If possible, consider placing a marine pilot onboard the distressed vessel to assist the master and crew.
- Rescue tug may consider towing distressed vessel stern first if the distressed vessel is laying stern to the wind.
- Distressed vessel should inspect chafing gear on a regular basis and replace as necessary.

This page is intentionally blank.

TUG-TO-SHIP DEPLOYMENT

Overview

The ETS can be mobilized first to the rescue tug then deployed from the tug to the distressed ship. This is most likely done by placing the ETS on the deck of the rescue tug at a dock. (This procedure is covered in Mobilization via Tug.) The tug's crew must lash the ETS Tote/cage onto the deck of their vessel in preparation for at-sea operations. Once the rescue tug is in the vicinity of the stricken vessel, the tug's master will coordinate operations with the ship's master. The communications between the tug master and the master of the stricken vessel are critical to the safety and effective use of the ETS. Tug crews are experienced in the use of Line guns and often have their own onboard. The rescue tug's crew will shoot a Line-gun projectile across the deck of the distressed ship. The ship's crew will haul in the Line-gun Line, once it is attached to the 600 ft. (182.88 m.) Messenger Line. The Messenger Line is then fed through the bullnose of the ship and hauled in to bring the Ship's Eye of the Tow Line aboard. The distressed ship's crew secures the Ship's Eye to a towing point on the bow. Once the ETS is secured to both tug and ship, the vessel masters will coordinate to commence towing operations.

Detailed Procedures

1. Review *Mobilization via Tug* if applicable.
2. Review *System Components and Nomenclature*. (Illustration ts-1)
3. Ensure that the ETS Tote/cage is securely lashed to the deck of the rescue tug in the proper orientation, with the "Deploy From Here" labels pointed to the aft and inboard. Remove the lid from the ETS Tote/cage, pull out the top of the cargo netting and secure it to the sides of the Tote/cage. (Illustration ts-2)
4. The ETS is always packed for tug-to-ship deployment, so the system should be configured as follows:
    a. A 50 ft. (15.24 m.) tail of the Tow Line, terminating in the Tug's Thimble, is fed up from the bottom of the ETS Tote/cage and lies on top. This tail is shackled to the tug's tow wire.
    b. The remainder of the 500 ft./152 m. or 350 ft./106.7 m. Tow Line is stacked on the bottom of the ETS Tote/cage and is shackled at the Ship's Eye to a 600 ft. (182.88 m.) Messenger Line stacked on top. An Eye Buoy is also attached at this juncture.
    c. The Messenger Line ends in an eye that is attached to the Line-gun Line once it has been fired and recovered by the ship's crew. (Illustration ts-2)

    [NOTE: The Lighted Pick-up Buoy and Sea Anchor will also be in the ETS Tote/cage, but is generally used only in ship-to-tug deployment.]
5. Once the tug's master has determined that the ETS is correctly configured and secured for heavy seas, the tug departs to intercept the ship.
6. Once the tug is in the vicinity of the ship, a dedicated communication channel should be established and the tug's master must coordinate with the ship's master in preparation for ETS operations.
7. If the distressed ship is adrift, she will probably be laying in the trough, abeam the wind. The rescue tug should approach the distressed ship from the windward and maneuver to

within 300 ft. (100 m.) in preparation for a Line-gun shot. In most cases this can be done by pointing into the wind and drifting or backing down on the ship. (Illustration ts-3)

8. The ETS is deployed by shooting a Line-gun projectile across the deck of the ship. Note that a Line-gun is not supplied as part of the ETS. Either the rescue tug will have a Line-gun, or one will have to be mobilized to the tug. The tug's master should give adequate warning and receive confirmation prior to firing the launcher. VHF radio communication between the ship and the rescue tug should be on Channel 21A. All other vessel communication should switch to a working channel. The following information should be relayed to the distressed ship's master via VHF radio or satellite telephone:
    a. *Make Ready for Line-gun Shot*
    We intend to shoot a Line-gun projectile to the deck of your ship amidships, once you are prepared to receive it. Have your deck crew wear hard hats and be stationed amidships to receive the line. Instruct your crew not to tie off the Line-gun line or pull on it until we signal that it is secured to the Messenger Line. Acknowledge.
    b. *Standby for Line-gun Shot*
    We are prepared to shoot and assume that you are prepared to receive. Your deck crew should take cover until the projectile is fired. Acknowledge by radio or with two whistles that your crew is prepared.
    c. *Line-gun Shot to Follow Immediately*
    The Line-gun will fire immediately after this signal. Three whistles.
9. The ship's master should have a crew on deck, along the windward rail near the center of the ship. The deck crew must be alert for the Line-gun shot and should duck behind suitable cover until the projectile passes overhead.
10. The Line-gun should be shot over the ship's deck, between the bow and the center deck of the ship. This ensures the best chance of successfully getting the line across the deck in high winds and seas while allowing the rescue tug to stay in position near the ship's bow. The Line-gun operator must aim high over the deck, away from the crew, with the objective of putting the line across the deck. (Illustration ts-4)
11. Once the Line-gun Line is fired across the deck, the ship's deck crew must grab and handle the line to control any surge caused by heavy seas. They should not tie the Line-gun Line off or make it fast, as this creates the possibility of injuring the tug crew or parting the line. The ship's crew should not pull on the line until instructed by the tug's master, as the tug's crew must first tie it to the Messenger Line. (Illustration ts-5)
12. Once the Line-gun Line is captured by the ship's deck crew, the tug's deck crew must attach it to the Messenger Line. One crew member should be assigned to control the line running to the distressed ship, while others tie or shackle the line into the eye in the Messenger Line. (Illustration ts-6)
13. Once the Line-gun Line is secured to the Messenger Line, the ship's crew will pull the Messenger Line onboard and run the eye-end through the ship's bullnose. One or more crew members should control the line running to the tug, while others feed the line through the bullnose. The Line-gun Line should remain attached to the Messenger Line during this operation. (Illustration ts-7 and ts-8)
14. The 600 ft. (200 m.) Messenger Line is hauled aboard the distressed ship through the bullnose, by hand or with power assist. Care must be taken by the deck crew to allow for

line surge. The master of the rescue tug must maneuver to prevent line surge as much as possible.

15. The Ship's End of the Tow Line is hauled through the bullnose and made fast to a towing point, usually a bit. An 8-foot lashing pennant secured to the throat of the eye can be used to control the Tow Line. (Illustration ts-9) Given time, the ship's master may also consider securing the Tow Line to the anchor chain.
16. Once the Tow Line is secured to the ship, the ship and tug deck crews should move inside to safety.
17. The rescue tug's master will coordinate with the ship's master and commence towing operations suitable to the circumstances of the incident. (Illustration ts-10)

Illustrations

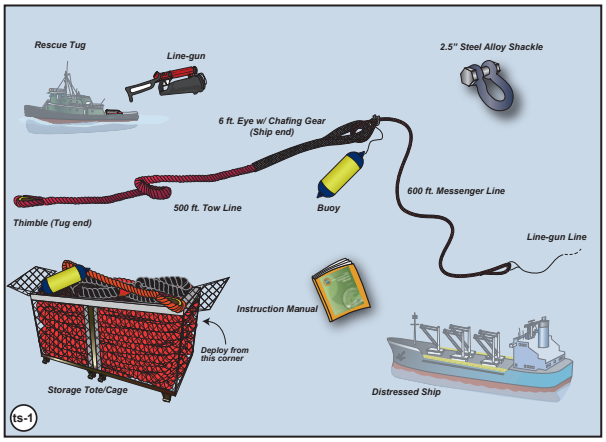


Illustration ts-1. System components and configuration for deployment from tug to ship.

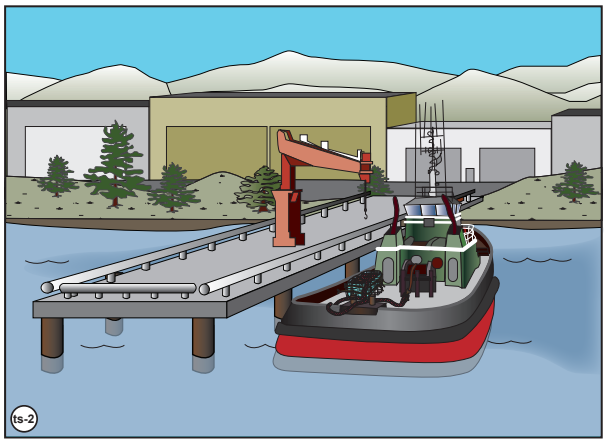


Illustration ts-2. ETS mobilized to rescue tug, lashed to the deck, and shackled to the tow wire.

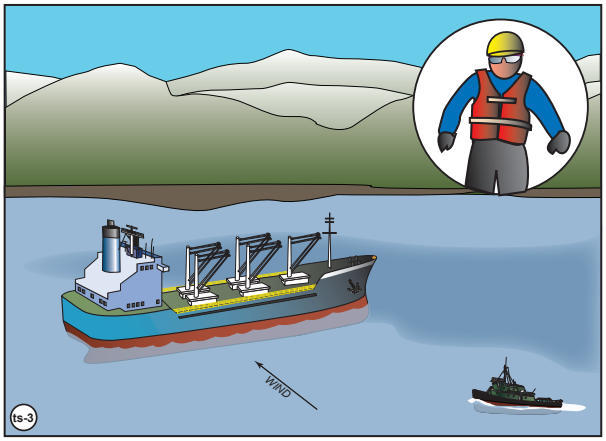


Illustration ts-3. Rescue tug with ETS approaching distressed ship. Deck crews on the ship and tug don proper hard hats, safety glasses, and PFDs.

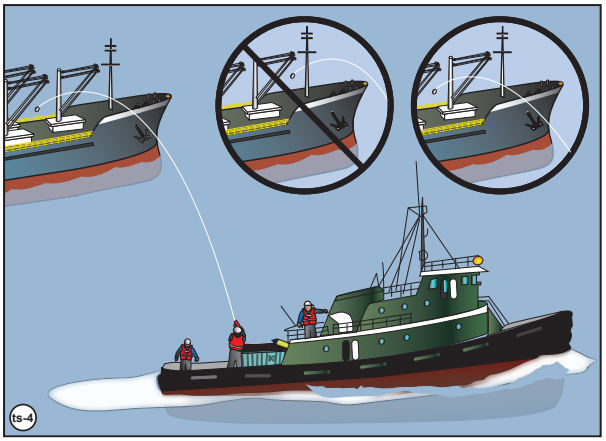


Illustration ts-4. Rescue tug firing Line-gun to distressed ship. Line-gun projectile is fired amidships, not across the bow.

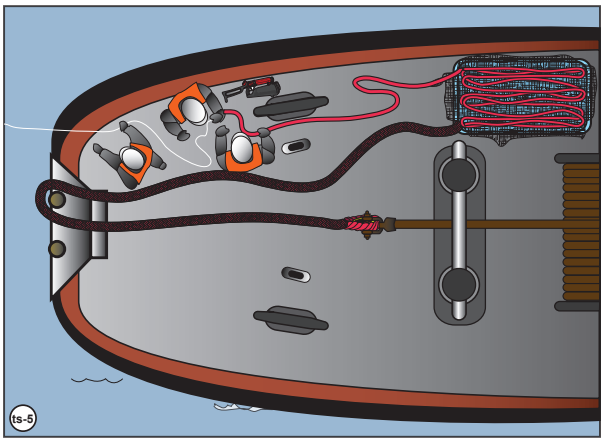


Illustration ts-5. Deck crew on rescue tug attaching Line-gun Line to Messenger Line.

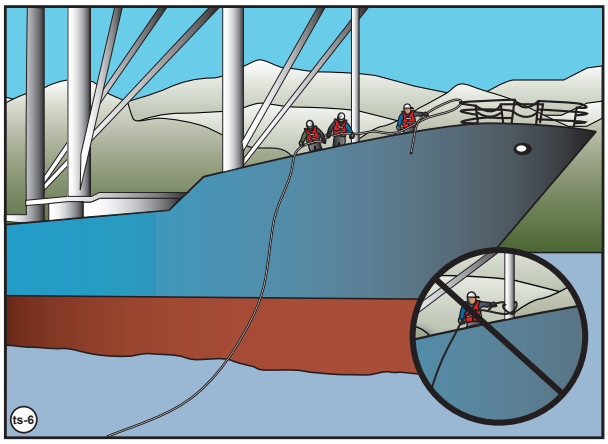


Illustration ts-6. Deck crew on disabled ship captures the Line-gun Line and waits until the tug crew secures it to the Messenger Line before hauling it in. Do not tie-off Line-gun line or Messenger Line.

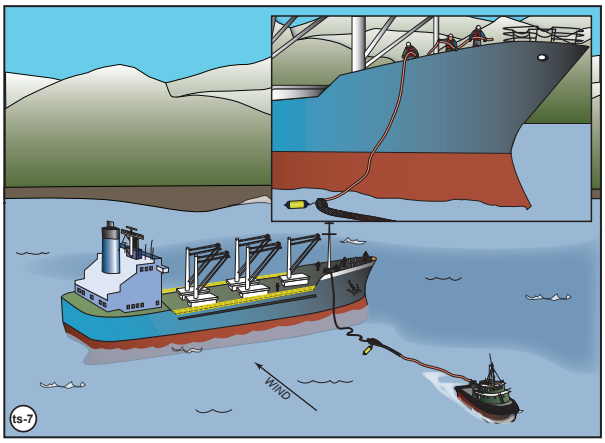


Illustration ts-7. Distressed ship's deck crew moving Messenger Line to bullnose.

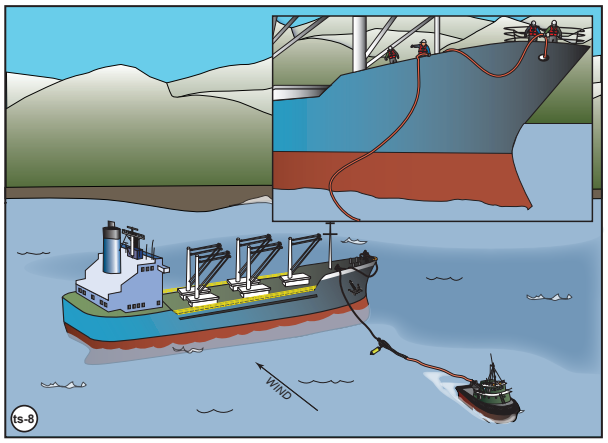


Illustration ts-8. Distressed ship's deck crew feeding Messenger Line through bullnose before hauling in.

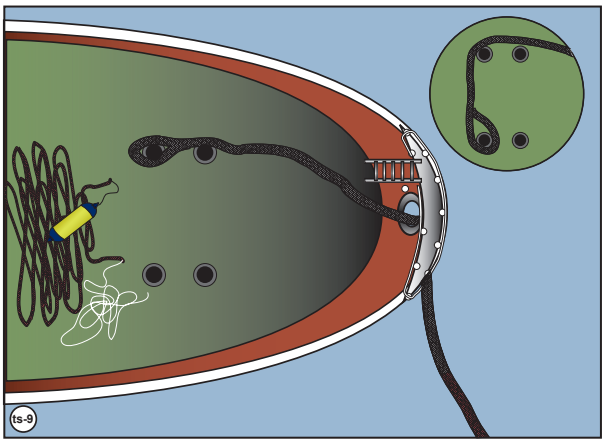


Illustration ts-9. Tow Line secured to towing point on disabled ship.

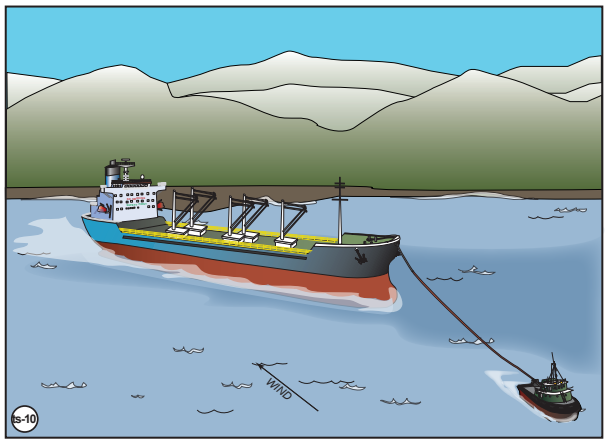


Illustration ts-10. Rescue tug towing distressed ship.

Safety Considerations

- Both the vessel and tug crews should wear proper PPE while on deck, including:
  - PFD
  - Hard hat
  - Eye protection
  - Hypothermia protection (as appropriate)
- Good communication is essential between the masters of the vessels and between the master of each vessel and the vessel deck crew. If possible, one crew member on each bridge should be assigned just to handle radio and/or satellite telephone communications.
- Take extreme care to ensure that the Tow Line and Messenger Line do not tighten until the Thimble is made-up to the tug's tow wire. Neither the Messenger Line nor the Line-gun Line should be made fast. Consider using an 8 ft. lashing pennant at the throat of the thimble eye on the Tow Line to help control any surge of the towline during the connection process.
- No one should be allowed on the aft deck of the rescue tug or on the bow of the ship during towing operations.

Operational Considerations

- Positive aspects of the tug-to-ship deployment are:
  - The ETS can be mobilized quickly to a dock where a rescue tug or tug-of-opportunity is available or has been mobilized for ETS delivery.
- Negative aspects of the tug-to-ship deployment are:
  - Working with the ETS on-deck in adverse weather and sea state is generally more dangerous on a tug than on a ship.
  - Line-gun operations during heavy weather and seas are risky and unreliable.
- If a Line-gun is needed, be sure that the tug has one onboard and there is a crew member trained to use it.
- If necessary and possible, consider mobilizing a satellite telephone to the ship with the ETS and dedicating this device to communications between the ship's master, tug's master, and USCG.
- Both deck crews should have radio contact and be familiar with basic hand signals. Hand signals should be confirmed with radio contact whenever possible.
- If possible, consider placing a marine pilot onboard the tug or distressed vessel to assist in communications with the master and crew.
- Multiple crew members should handle lines in a manner that allows for control during surges caused by seas.
- Rescue tug crew should consider lashing across the open ETS Tote/cage to secure the ETS during transit in heavy seas.
- Rescue tug may consider lashing ETS to its boat deck. Deployment from the boat deck will minimize crew time on the back deck in rough seas. Care must be taken to insure Tow Line does not foul on towing bits or other obstructions.

- Rescue tug may consider towing distressed vessel stern first if the distressed vessel is laying stern to the wind.
- Distressed vessel crew should inspect chafing gear on a regular basis and replace as necessary.

MULTIPLE TUG-TO-SHIP DEPLOYMENT

Overview

When two vessels of opportunity, each equipped with an ETS, are available to assist the distressed ship, a multiple tug tow can be considered if the weather conditions permit. This can be accomplished using either two Tug-to-Ship Deployments or a combination of a Ship-to-Tug Deployment and a Tug-to-Ship Deployment. Once the primary rescue tug has taken the distressed ship in tow, the tug's master should station the tug to windward of the distressed vessel and with a slack Tow Line. The secondary rescue tug should execute a Tug- to-Ship Deployment from the distressed vessel's leeward bow, insuring that the two tugs maintain a safe distance from each other. Once the second tug has the distressed vessel under tow, the tug's master should proceed to a position to windward of the distressed vessel and parallel to the primary tug, maintaining a safe distance between the two towing vessels. The two towing vessels should then slowly increase towing speed until the distressed vessel is towing astern and making way.

Detailed Procedures

1. Review Ship-to-Tug Deployment if applicable.
2. Review Tug-to-Ship deployment
3. A towing master should be identified to determine who will have the responsibility for coordinating the activities of the two towing vessels.
4. A thorough towing plan should be developed between the masters of the two towing vessels and the master of the distressed ship which includes among other things: a discussion of the towing capabilities of the two towing vessels; the order in which the two towing vessels will make up to the ship; the position of the primary towing vessel while the secondary tow is made; the communication procedures; and the abort procedures.
5. The safety of the towing vessels and crew should not be compromised to execute a multiple tug tow.
6. Consideration should be given to allowing the towing vessel with the greater towing capacity to engage the distressed vessel first. The ETS-900 has a minimum breaking strength of 4,000 kN (900,000 lbs) and should be attached prior to the ETS-450 which has a minimum breaking strength of 2,000 kN (450,000 lbs). If a Ship-to-Tug Deployment is executed, the ETS-900 should be used for the primary tow.
7. The primary towing vessel should hook up to the distressed ship as described in the Tug-to -Ship Deployment section or the Ship-to-Tug Deployment section of this manual.
8. The primary towing vessel will then let out its Tow Wire to the proper towing length and maintain a position to windward of the distressed vessel while keeping slack in the towing system.
9. Once the primary tug is secured to the distressed vessel and its Tow Wire has been paid out, the secondary towing vessel can approach the ship from the leeward side and execute the Tug-to-Ship Deployment procedure using the line gun. The drift of the distressed vessel will likely be slower than the drift on the secondary towing vessel, making this approach more difficult. However, the secondary tug should not place itself to windward of the ship and in the bight of the primary towing vessel's Tow Line.

10. When the secondary tug has completed making tow, it should let out its tow wire and proceed to take a position parallel to but separated from the primary towing vessel. The two Tow Lines should maintain an approximate angle to the ship of 30 to 40 degrees.
11. Tension on the Tow Lines should then be applied gradually by both towing vessels until the distress vessel has either been held in place or is making way to windward, depending on the objectives and the conditions.

Illustrations

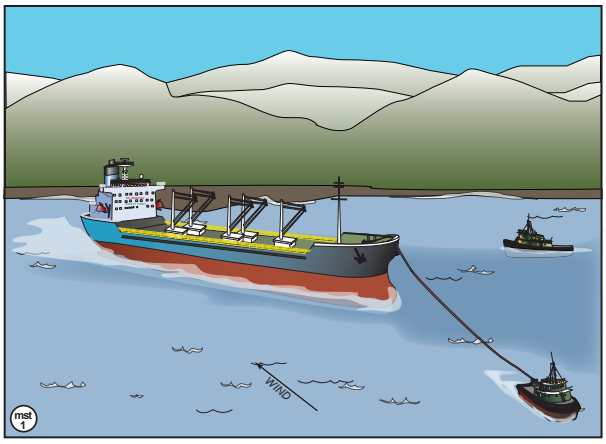


Illustration mts-1. Primary vessel on tow with Secondary tug approaching the leeward bow of the distressed vessel.

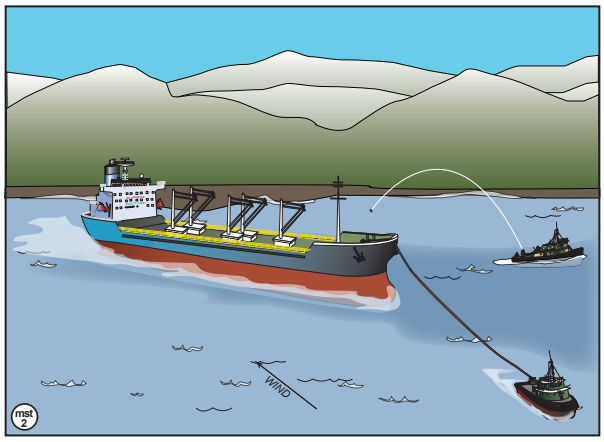


Illustration mts-2. Secondary vessel firing line gun from leeward side.

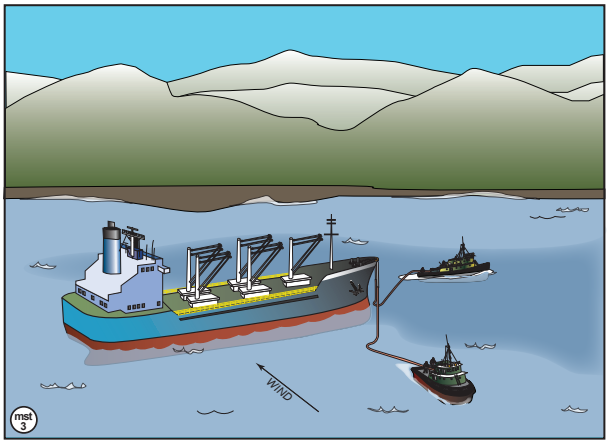


Illustration mts-3. *Two towing vessels maneuvered to windward with slack Tow Lines.*

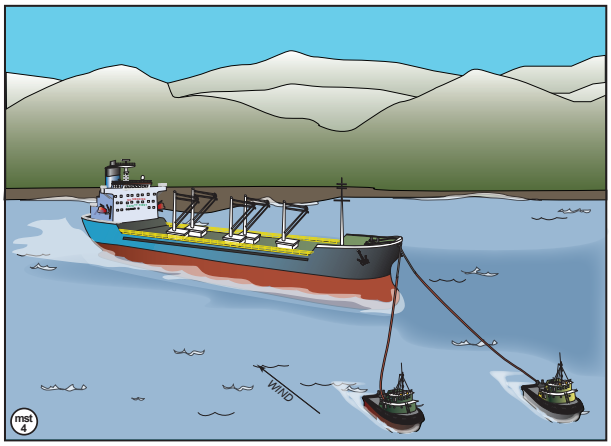


Illustration mts-4. Two towing vessels with distressed vessel under tow.

Safety Considerations

- Review safety considerations for Ship-to-Tug and Tug-to-Ship deployment
- Multiple tug tows should only be attempted if the weather conditions permit

Operational Considerations

- Positive aspects of the multiple tug tow are:
  - Once under tow by two vessels, the distressed ship may be moved at a greater speed and thus gain more distance from a lee shore.

- Should one towing system fail, the distressed ship will remain under control by the other rescue tug.

- Negative aspects of the multiple tug tow are:
  - Risk of towline entanglement between the two rescue tugs.
  - Risk of collision between the two rescue tugs.
  - Additional time required to make up two towing vessels.
- Consider using the multiple tug tow if a window of opportunity exists between weather fronts and the greater towing speed will result in additional distance made off-shore prior to the next weather system.

This page is intentionally blank.

DECONTAMINATION AND PACKING

Overview

The ETS is always packed for deployment from a rescue tug, so it is immediately deployable for incidents. However, the ETS is placed inside of a cargo net within the Tote/cage, so it also may be quickly mobilized via helicopter. The purpose of this procedure is to ensure the ETS is packed in a standardized way so either deployment can be accomplished easily and quickly. After any use, the ETS must be taken ashore and decontaminated, dried, and inspected according to the manufacturer's recommendations.

Detailed Procedures

1. Review *System Components and Nomenclature*
2. If the ETS has been used and contaminated with significant amounts of oil or other petroleum product, it must be decontaminated according to a plan approved by ADEC. If it is only lightly contaminated, it can be washed with a mild detergent and water, rinsed with low pressure water, and dried. Do not use a citrus-based detergent (anything containing d'Limonene) as this can rapidly deteriorate Plasma line. See Appendix C. Inspection Guidelines for Plasma® Synthetic Ropes.
3. In preparation for packing, select an area on shore with enough room to spread out the ETS and place a tarp or sheet of plastic to protect the system components during packing.
4. Inspect all the components of the ETS for signs of damage or wear. See Appendix C for inspection guidelines. If either is noted, contact the component's manufacturer to determine if the component should be taken out of service for repair or retired. Check operability of shackles and connectors. Check battery for the Lighted Pick-up Buoy, replace as necessary.
5. Arrange components on the tarp in the follow order: (see Illustration p-1)
    a. Helicopter Pendant
    b. Pick-up and Eye buoys and Sea Anchor
    c. 600 ft. x 7/8 in. (182.88 m x 2.2 cm.) Messenger Line
    d. Thimble end of the Tow Line
    e. 500 ft. (152 m.) Tow Line
    f. 6 ft. (1.83 m.) Ship's Eye end of the Tow Line
    g. ETS Tote/cage lined with the cargo net.
6. Attach the eye at the end of the Messenger Line to the Ship's Eye on the end of the Tow Line. Also secure the Eye Buoy to the Ship's Eye. During deployment, the Eye Buoy will provide a visual marker for the Messenger/Tow Line junction when the lines are in the water.
7. There is a black line-marker 50 ft. (15.24 m.) from the Thimble end of the Tow Line. This 50 ft. (15.24 m.) tail will be left outside of the Tote/cage until the end of the packing process. This tail is removed from the top and secured to the rescue tug's tow wire prior to deployment at sea. (Illustration p-2)
8. Start packing from the corner of the ETS Tote/cage labeled "Deploy From Here." Begin faking the Tow Line into the bottom of the tote/cage. First length-wise, then cross-wise.

Stack the line tightly but in a fashion that will allow it to deploy smoothly. (Illustration p-3 & p-4)

9. Stack the Tow Line into the ETS Tote/cage until the gray chafing gear-covered Ship's Eye is packed into the ETS Tote/cage. Consider having someone work inside the Tote/cage to compact the Tow Line. (Illustration p-5)
10. Stack the Eye Buoy, which is attached to the Ship's Eye, at the end of the last layer of Tow Line. It should be placed on the end of the Tote/cage opposite the deployment corner.
11. Place a sheet of Separation Layer (plastic, cardboard, or burlap cut to fit the dimensions of the Tote/cage) over the Tow Line layer. This separates the smaller Messenger Line from the Tow Line ensuring that the smaller line does not fall between the coils of the larger line and become tangled. (Illustration p-6)
12. Fake the Messenger Line into the ETS Tote/cage on top of the Separation Layer in layers with each successive layer cross-wise to the previous. (Illustration p-7)
13. Place another Separation Layer on top of the Messenger Line and fake the Tow Line tail (ending in the Thimble) on top. (Illustration p-8 and p-9)
14. Place the Lighted Pick-up Buoy and Sea Anchor into ETS Tote/cage unattached to the rest of the ETS.
15. Fold into the Tote/cage the portion of the cargo net left hanging out. (Illustration p-10)
16. Place the lid on the Tote/cage and secure it with the attached elastic loops.
17. Place a nylon band around the Tote/cage to secure the lid and prevent tampering.
18. If the weight of the ETS is not known, have it weighed and attach a tag on the outside of the ETS Tote/cage with the following information:
    a. Date Packed
    b. Names of Packers
    c. Weight of the ETS including the Tote/cage
    d. Weight of the ETS and cargo net, without the Tote/cage
19. Place the ETS Tote/cage into the secure storage indicated in the *Storage Locations* section of this manual. Store the Helicopter Pendant in the airport location, but outside the Tote/cage. Store the ratchet straps at the Port storage location, but outside the Tote/cage.

Illustrations

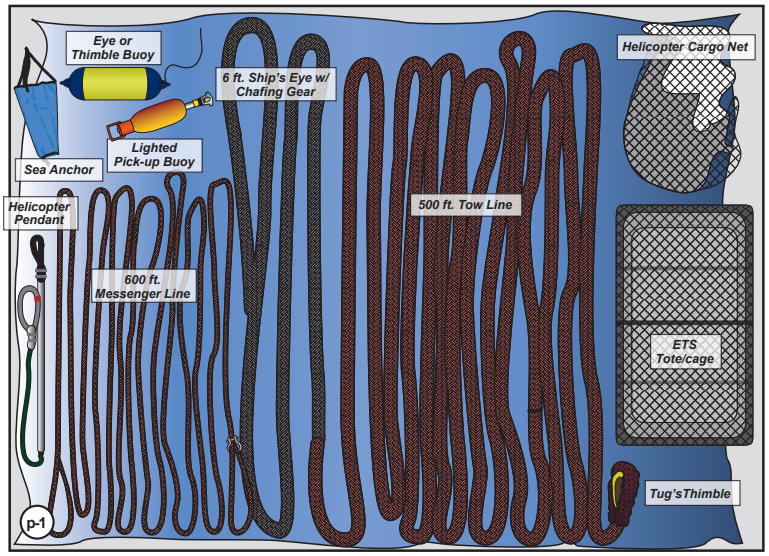


Illustration p-1. ETS components ready to pack.

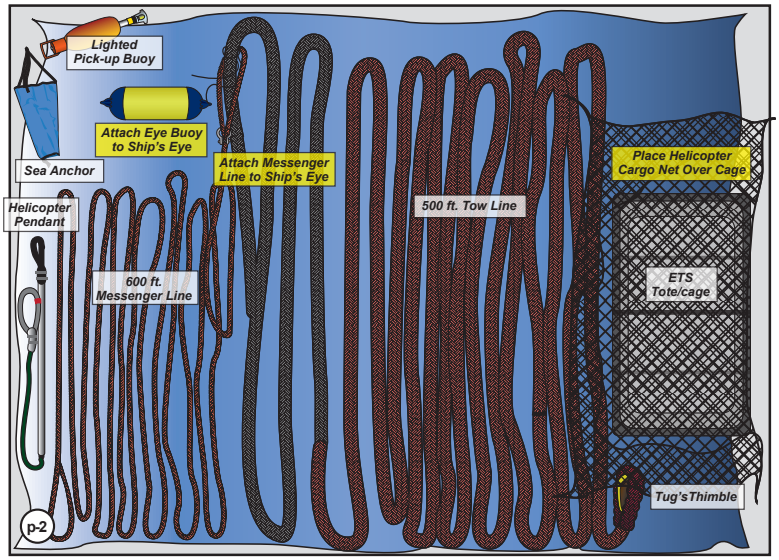


Illustration p-2. Line ETS Tote/ cage with the Cargo Net; attach the Eye Buoy and Messenger Line to the Ship's Eye on the Tow Line.

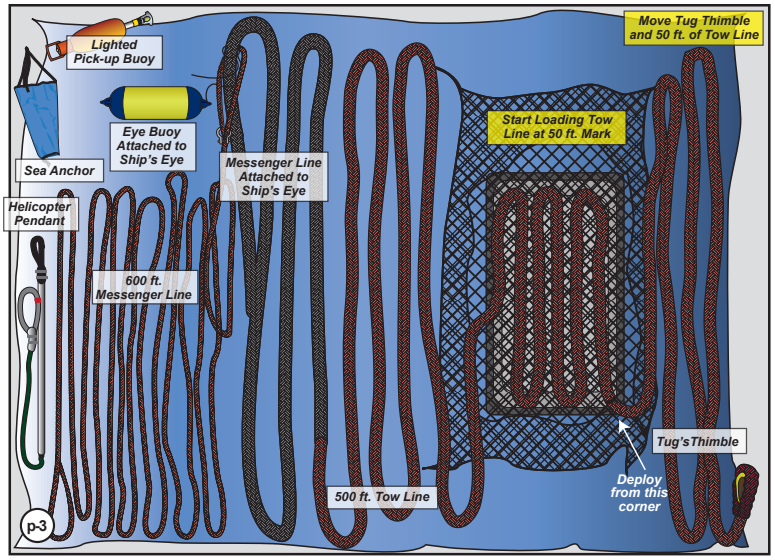


Illustration p-3. Leaving the 50 ft. tail on the tug end of the Tow Line outside the Tote/cage, start faking the Tow Line into the bottom of the ETS Tote/cage.

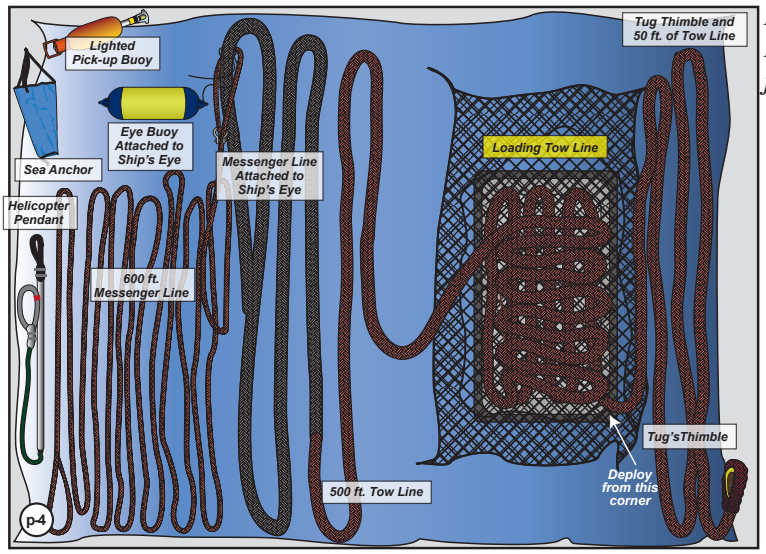


Illustration p-4. Fake the Tow Line into the ETS Tote/cage, first length-wise then cross-wise.

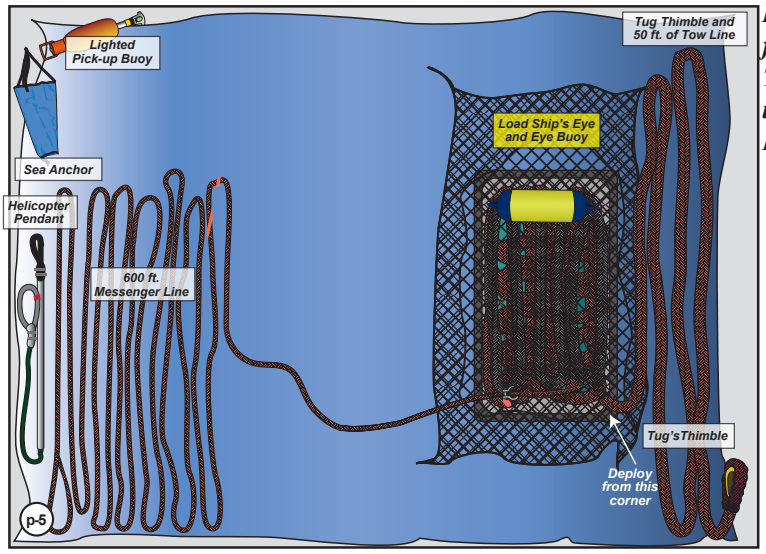


Illustration p-5. Continue to fake the Tow Line into the ETS Tote/cage until the Ship's Eye is inside the tote; also place the Eye Buoy into the Tote/cage.

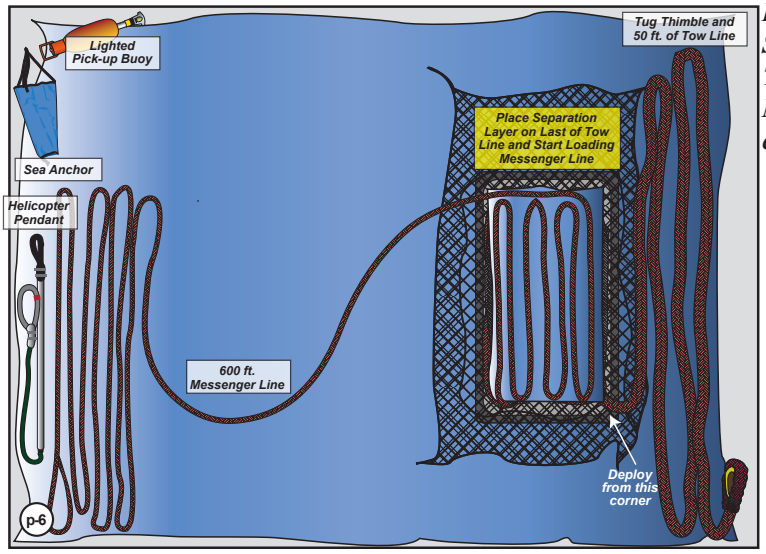


Illustration p-6. Place a Separation Layer on top of the Tow Line and begin faking the Messenger Line into the Tote/cage.

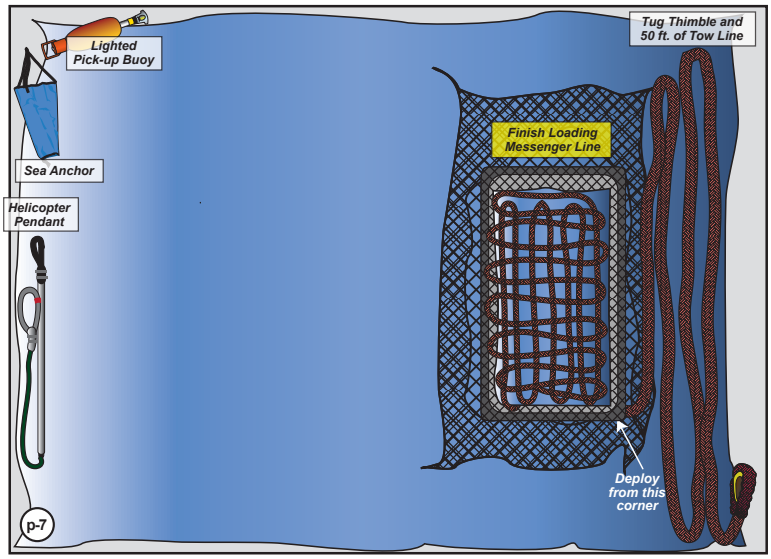


Illustration p-7. Continue faking the Messenger Line into the ETS Tote/cage, first length-wise then cross-wise.

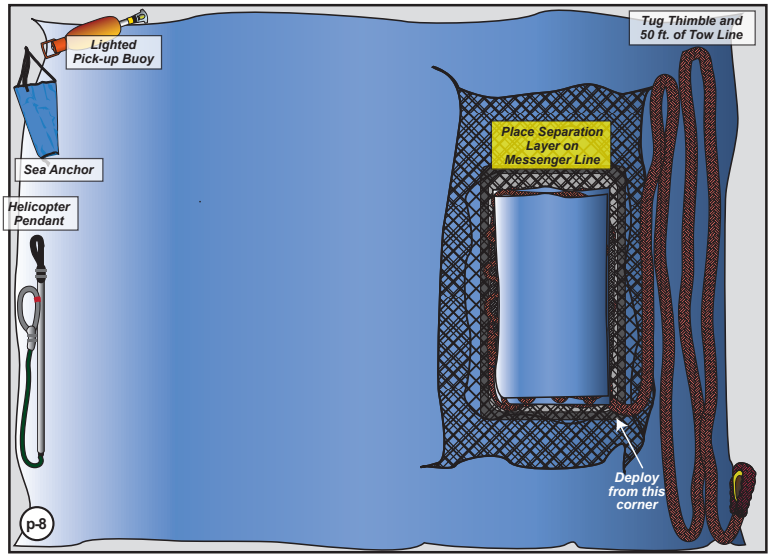


Illustration p-8. Once the Messenger Line is completely loaded in the Tote/cage, place another Separation Layer on top.

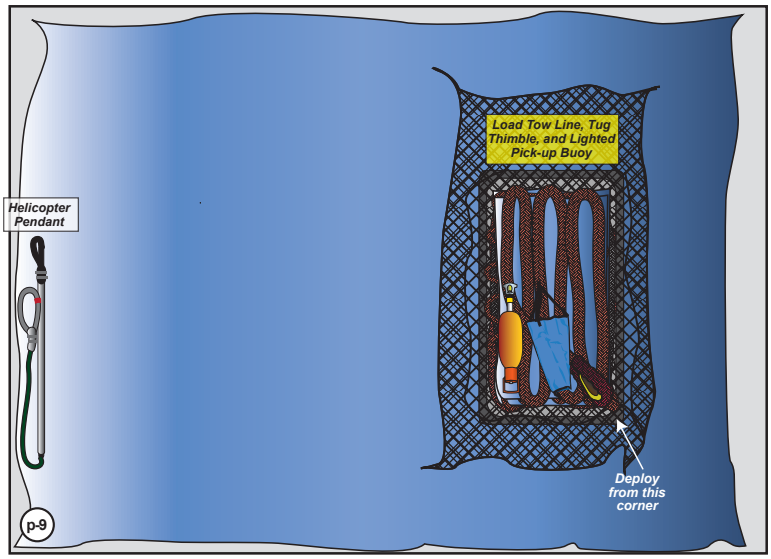


Illustration p-9. Fake the tail of the Tow Line on top of the Separation Layer; place the Lighted Pick-up Buoy and Sea Anchor inside the Tote/cage without attaching it to the Tow Line. The Helicopter Pendant does not go inside the Tote/cage.

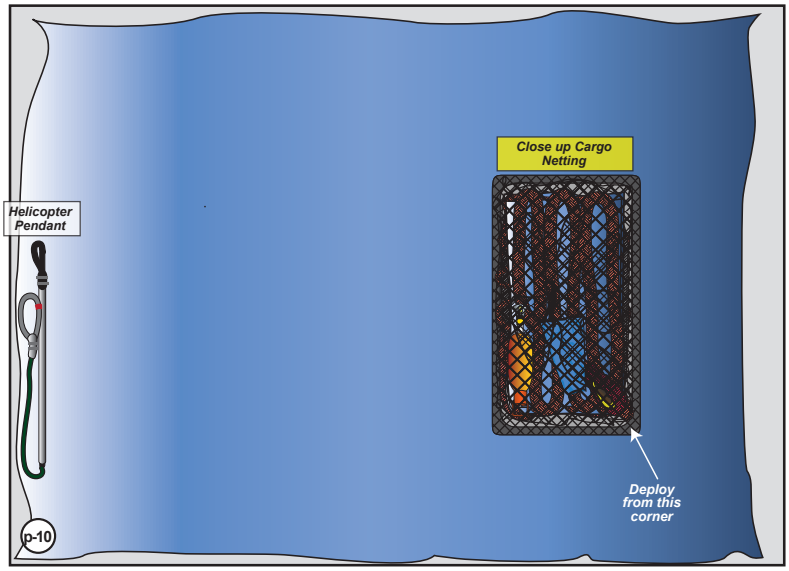


Illustration p-10. Fold the remainder of the Cargo Net inside the Tote/cage; place the Tote/cage lid on the Tote/cage, and secure the lid with the elastic straps.

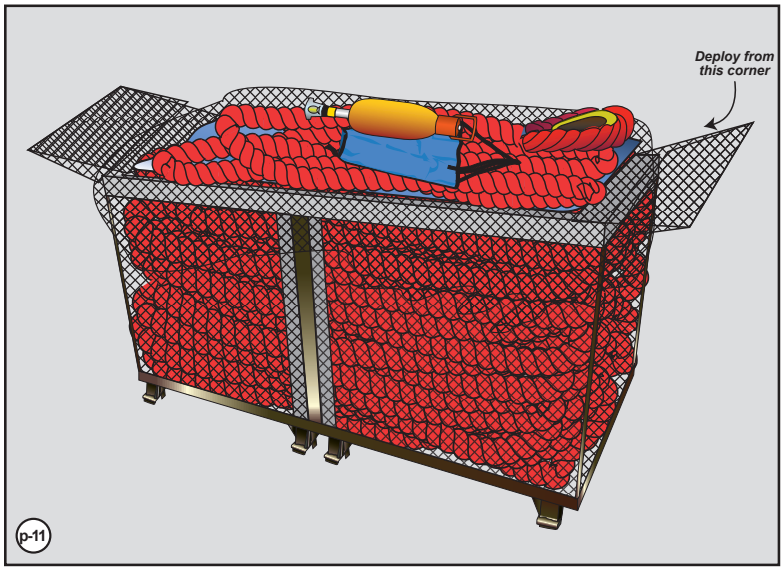


Illustration p-11. ETS packed into Tote/cage, ready for deployment.

Safety Considerations

- Beware of slip, trip, and fall hazards while packing the ETS.
- Beware of machinery used to move the system and Tote/cage.

Operational Considerations

- Consider the repacking process as a training opportunity. Invite tug crews, marine pilots, ship's masters and agents, and USCG personnel to participate and discuss the use and care of the ETS.

MAINTENANCE

Overview

Proper maintenance is vital to ensure the reliability of every component of the ETS. This manual is not intended to replace the equipment manufacturer's maintenance procedures and schedule. Always follow the equipment manufacturer's maintenance procedures and schedules if they conflict in any way with the information summarized here. Contact the manufacturer directly with questions on proper maintenance or repair procedures. (See Appendix A. Contacts)

Ultimately, maintenance responsibility rests with the owner of the equipment. The USCG is responsible for the maintenance of the helicopter Cargo Release Hook. This manual and associated instructional video are also important system components and should be reviewed by each of the workgroup organizations annually. Corrections should be reported to the ETS Procedures Manual Administrator.

Maintenance Procedures

The Table MS-1 summarizes the routine maintenance procedures for the ETS system.

Maintenance Log

The Table MS-2 can be photocopied and used as a maintenance log for the ETS system. The Maintenance log should be kept by the ETS Custodian with a master copy of the procedures manual.

Table MS-1. Routine maintenance procedures for ETS components.

ETS Component	Maintenance Procedure	Responsibility	Frequency
Procedures Manual & Instructional Video	1. This procedures manual and associated instructional video should be reviewed periodically to ensure that the information presented is current and accurate. Particular attention should be given to the contacts information in Appendix A.	ETS Custodian, Marine Pilot Association, USCG MSD, potential rescue tug captains, potential distressed ship captains, marine agents. Send edits to the manual administrator.	Annually or whenever any system component is added, replaced, or retired
Smaller ETS (<50,000 DWT) Stored in a 20 ft. connex at the Port.	2. Inspect storage location and ETS Tote to verify: • There are no obstructions to entry. The area is free of snow and debris. • The tamper-proof band on the ETS is intact. • The ETS Tote/cage appears to be in good condition and nothing has changed that would alter the contents in any way. • There are lifting straps and ratchet straps with the Tote/cage. Notify the ADEC ETS Coodinator and correct any problems.	ETS Custodian	Quarterly
	3. Completely unpack the ETS; inspect all components; replace batteries in the Lighted Pick-up Buoy; check all lights, buoys, and shackles for functionality; repack according to the *Decontamination and Packing* procedure; replace tamper-band; and verify the weight of the system both with and without the Tote. This is also an opportunity for training, so other organizations should be invited and encouraged to participate. Notify the ADEC ETS Coordinator and consult with the manufacturer if any problems are noted.	ETS Custodian	Annual basis so any repairs/ replacements are in place prior to the winter storm season
	4. Open the ETS Tote/cage and replace the batteries in the Lighted Pick-up Buoy, replace the Tote/cage lid and tamper-proof band.	ETS Custodian	Annual basis so any repairs/ replacements are in place prior to the winter storm season
Larger ETS (>50,000 DWT) Stored at the DOT hangar at the airport.	5. Inspect storage location and ETS Tote to verify: • There are no obstructions to entry. The area is free of snow and debris. • The tamper-proof band on the ETS is intact. • The ETS Tote appears to be in good condition and nothing has changed that would alter the contents in any way. • The helicopter cargo pendant is with the Tote/cage. Notify the ADEC ETS Coordinator and correct any problems.	ETS Custodian	Quarterly

ETS Component	Maintenance Procedure	Responsibility	Frequency
Larger ETS (>50,000 DWT) (continued)	6. Completely unpack the ETS; inspect all components; replace batteries in the Lighted Pick-up Buoy; check all lights, buoys, and shackles for functionality; repack according to the *Decontamination and Packing* procedure; replace tamper-band, and verify the weight of the system both with and without the Tote/cage. This is also an opportunity for training, so other organizations should be invited and encouraged to participate. Notify the ADEC Coordinator and consult with the manufacturer if any problems are noted.	ETS Custodian	Annual basis so any repairs/ replacements are in place prior to the winter storm season
	7. Open the ETS Tote/cage and replace the batteries in the Lighted Pick-up Buoy, and replace the Tote/cage lid and tamper-proof band.	ETS Custodian	Annual basis so any repairs/ replacements are in place prior to winter storm season
Pendants and Slings Stored with the Larger ETS	8. Coordinate inspection with USCG, Air Station Kodiak, and Air Station Sitka.	ADEC ETS Coordinator	Annually or after use

Table MS-2. Maintenance log for ETS.

Date	Person Completing Procedure	Procedure (reference procedure number from Table MS-1)	Notes: Comments, problems noted, or notifications made

TRAINING

Regular training is critical to maintaining proficiency in any rescue procedure. Successful use of the ETS depends on the correct implementation of procedures by several different organizations (i.e. the crews of the rescue tug, ship, the USCG helicopter, etc.). The ship's crew may have no training or experience in deploying an ETS and may not even speak English. Other organizations regularly perform some of the required tasks; for example, the USCG helicopter crews regularly practice aerial sling deliveries and the tug crews regularly tow ships. Still, mobilizing and deploying the ETS is not a common event, so routine training and practice is important. While training is voluntary, it is highly recommended to maintain proficiency.

Three methods of training are available:

- Watching the instructional videos (ETS deployment).
- Reviewing this Procedures Manual.
- Conducting an actual deployment exercise.

It is hoped that the entire system can be exercised through a drill annually. The ETS Workgroup recommends the following training schedule for each organization.

POTENTIAL RESCUE TUG CREWS

The resident tug captain(s) should walk the crew through the procedures unique to their vessel such as lashing points and shackling the ETS to the tow wire every six months. Each crewmember should review the instructional video and the procedures manual annually.

POTENTIAL DISTRESSED SHIP'S CREWS

Ship's agents should make every vessel aware of the ETS. Ship's masters should be encouraged to read the procedures manual, view the instructional video, and discuss the ETS procedures with the marine pilots and tug captains. Whenever a qualified person repacks an ETS Tote/cage, ship's masters in port should be invited to observe and discuss.

ETS CUSTODIANS

Designated personnel should review the instructional video and procedures manual annually. One of the ETS totes/cages should be open unpacked, inspected, and re-packed each year. Potential users of the ETS should be invited to participate in this event. At that time the ETS Custodian, a marine pilot, and a tug captain should lead a discussion on mobilizing and deploying the system.

USCG, MARINE PILOTS ASSOCIATIONS, AND ADEC

The USCG, Marine Pilots Associations, and ADEC should also review the instructional video and procedures manual annually. These organizations are encouraged to hold a tabletop exercise annually to work through the activation, callout, and coordination issues associated with implementing the ETS.

This page is intentionally blank.

COST RECOVERY

REIMBURSEMENT OF COSTS

The Oil Spill Liability Trust Fund (OSLTF or Fund) is a billion-dollar fund established as a funding source to pay removal costs and damages resulting from oil spills or substantial threats of oil spills to navigable waters of the United States. The OSLTF is used for costs not directly paid by the polluter, referred to as the responsible party (RP). Responding to oil spills involves coordinated efforts by the Federal On-Scene Coordinator (FOSC), other federal agencies, state and local governments; the RP and oil spill response organizations. All FOSC's obtain immediate access to a funding account and ceiling for incident response. Other Federal, state, local and tribal government agencies assisting the FOSC may request reimbursable funding authority via a FOSC approved Pollution Removal Funding Authorization (PRFA).

Guidance for seeking cost recovery can be found in the Compliance Guide for Submitting Claims under the Oil Pollution Act of 1990. A link to the Claimant's Guide and Claims Form can be found at: http://www.uscg.mil/npfc/Claims/claims_docs.asp. An example of the claims form can be found at the end of this section. The ADEC is required by law (AS 46.08.070) to seek reimbursement of costs incurred in response to a release or threatened release of oil or hazardous substances. Cost include personnel, travel, lodging, meals, equipment provided to the RP that is lost or damaged during the response and any other direct costs. Claims will first be submitted to the RP. If the RP denies responsibility, or if 90 days passes without a settlement, claimants (state, local, other federal and tribal government agencies) can submit the claim to the National Pollution Funds Center. ADEC will seek cost recovery for:

- Mobilization,
- Replacement of ETS components lost, damaged and/or determined to no longer be fit for use,
- Inspection of component items used to respond to a distressed vessel,
- And decontamination and repacking of the ETS.

The replacement cost of each ETS component may vary. The cost per component in the following Table represents monetary values for the year 2011.

Table CR-1. Cost per component.

Component	Cost
10 in. PlasmaTow Line	$33,600.
7/8 in. Messenger Line	$3,542.00
Lighted Pick-up Buoy	$1095.00
Lighted Pick-up Buoy	$150.00
Cargo Net	$1,137.50
Towing Shackle	$1,140.00
Reach Pendant	$1,160.00 + $30.00 for certificate of conformance
Storage Container	$2,530.00
Storage Container	$2,369.00

Component	Cost
Fender	$75.00
2 - 50 ft. x 1.5 in. Hoisting Pennants	($800.00 ea.) so $1,600.00
2 - 90 ft. x 1.5 in. Hoisting Pennants	($1,400.00 ea.) so $2,800.00
Ratchet Strap	$25.00
7/8 in. Safety Shackle	$55.00
50 ft. Chafe Guard	$2,600.00
15 ft. Chafe Guard (Replacement)	$831.00
Information Placards	$50.00

Department of Homeland Security U.S. Coast Guard ATTN: CLAIMS ADJUDICATION NATIONAL POLLUTION FUNDS CENTER US COAST GUARD STOP 7100 4200 WILSON BLVD STE 1000 ARLINGTON VA 20598-7100	**Optional OSLTF Claim Form** CG NPFC-CA1 (Rev. April 03)

PURPOSE: This form may be used for submitting claims to the U.S. Coast Guard, National Pollution Funds Center, for potential compensation from the Oil Spill Liability Trust Fund for uncompensated removal costs or damages resulting from an incident under the Oil Pollution Act of 1990 (OPA). You may use your own version of this form. PLEASE PRINT OR TYPE:

1. **Claimant Information:** Name: _____

Address: _____

_____

_____

Home Tel. #: _____ Work Tel. #: _____

Fax Number: _____ E-mail: _____

2. **Incident Information:** Date: _____ Time: _____ NRC Report #: _____

Name of vessel or facility causing damage: _____

Geographic location of incident: _____

Brief description of the incident: _____

_____

_____

_____

3. **Type(s) of claim(s) and total amount for costs and damage(s) claimed:**

$_____ Removal Costs

$_____ Subsistence Use $_____ Profits & Earning Capacity $_____ Public Services

$_____ Natural Resources $_____ Government Revenues $_____ Real or Personal Property

$_____ *Total Amount Claimed*

4. **Has claimant communicated with the responsible party?** ☐ No ☐ Yes

5. **Has the claim been submitted to the responsible party?** ☐ No ☐ Yes Date Submitted: _____

6. **If the claim has been submitted to the responsible party, what action has the responsible party taken?**

☐ No Action ☐ Denied ☐ Other – Explain:

_____

_____

7. **Has claimant commenced an action in court to recover costs which are the subject of the claim?**

☐ No ☐ Yes If yes, provide the name, address, phone number of your attorney, the court in which action is pending and the civil action number: _____

_____

_____

CG NPFC-CA1 (APR 03)
Previous edition can be used

Page 1 of 2

Initials/Date: /

Optional OSLTF Claim Form

CG NPFC-CA1

8. **Has claimant submitted or planned to submit the loss to an insurer?** ☐ No ☐ Yes Please provide the name, address, and phone number of your insurer, the policy number, and explain any compensation received:

_____

_____

9. **Description of the nature and extent of damages claimed** (Attach additional information as necessary): _____

_____

_____

10. **Description of how the incident caused the damage:** _____

_____

_____

11. **Description of actions taken by claimant/representative to avoid or minimize damages:** _____

_____

_____

12. **Witnesses:**

Name: _____ Tel. No.: _____

Address: _____

_____

Name: _____ Tel. No.: _____

Address: _____

_____

13. **List Documents or Attachments** (Attach additional information as necessary):

a. _____

b. _____

c. _____

d. _____

e. _____

I, the undersigned, agree that upon acceptance of any compensation from the Fund, I will cooperate fully with the United States in any claim or action by the United States to recover the compensation. The cooperation shall include, but is not limited to, immediately reimbursing to the Fund any compensation received from any other source for the same costs and/or damages and, providing any documentation, evidence, testimony, and other support, as may be necessary for the Fund to recover such compensation.

I, the undersigned, certify that, to the best of my knowledge and belief, the information contained in this claim represents all material facts and is true. I understand that misrepresentation of facts is subject to prosecution under Federal law (including but not limited to 18 U.S.C. 287 & 1001 and 31 U.S.C. 3729).

14. _____
Claimant's Signature Date

Printed Name of Signer: _____

15. _____
Legal Representative Date

Title/Legal Capacity: _____

CG NPFC-CA1 (APR 03)
Previous edition can be used

Page 2 of 2

PRIVACY ACT STATEMENT

AUTHORITY: 33 U.S.C. 2713. **PRINCIPAL PURPOSE:** To aid the Coast Guard in adjudicating claims for reimbursement of removal costs and damages from oil spills when the Responsible Party has not paid. **ROUTINE USES:** Information on reimbursements may be provided to the Internal Revenue Service for tax purposes and may be provided to the Department of Justice for litigation against the Responsible Party. **DISCLOSURE:** Decision to submit a claim is voluntary; but, if proper information is not furnished by the claimant, the Government may be unable to evaluate or pay a claim.

This information applies to all claims against the Oil Spill Liability Trust Fund, whether or not the Optional OSLTF Claim Form is used.

OPTIONAL OSLTF CLAIM FORM — INSTRUCTIONS

Please provide all information, evidence, and documentation that supports the removal costs and/or damage(s) claimed. **Use additional sheets or pages, as necessary,** to provide information, evidence, and documentation. The following numbered paragraphs correspond to the numbers on the optional claim form:

1. Complete name, street, city, state, ZIP and phone number of the claimant (party that incurred damage and is seeking reimbursement).

2. If known, provide the following incident information on the oil spill or threat of oil spill causing or suspected of causing the removal costs and/or damage(s) claimed:
   - The identity of the vessel, facility or entity causing or suspected of causing the incident.
   - Describe the geographic area and waterway directly affected by the oil spill or threat of oil spill.
   - Briefly describe any known information regarding the occurrence of the oil spill or threat of oil spill.

3. Indicate the amounts by the type of claim(s) being submitted. Provide the total amount claimed.

4. Indicate if claimant has had any communication (written or verbal) with the entity causing or suspected of causing the damage(s) claimed.

5. Has the claimant or the claimant's legal representative submitted the claim(s) to the entity causing or suspected of causing the damage claimed? If yes, include the date submitted.

6. If claim was submitted to the responsible party, indicate any response (written or verbal) or any payment you have received. Provide the date the claim was submitted.

7. Indicate if the claimant is pursing a claim(s) against the responsible party by legal representation in a court of law. If yes, provide all information that will enable us to contact your legal representative and identify your case.

* * **At the bottom of the first page of the form, please initial and date the page.** * *

8. Indicate if claimant is pursuing payment from an insurance carrier for costs that are included in the claim. If yes, provide all information that will enable us to contact the insurer and identify the claimant's policy.

9. Provide detailed information, evidence, and documentation that describes the extent of the damage(s) claimed. Attach copies, if necessary, of all pertinent information.

10. Provide any information, evidence, and documentation that will help describe how the oil spill, or threat of oil spill, caused the removal costs and/or damage(s) claimed.

11. Provide any information, evidence, and documentation that describe the actions of the claimant or any other person on the claimant's behalf to reduce or avoid the damage(s) claimed.

12. Provide the name, address and telephone number (if known) of any witness to the damage(s) claimed. On a separate page provide a summary of each witness's knowledge of the damage(s) claimed or the incident causing or suspected of causing the damage(s) claimed.

13. If you provide additional documents, please list them here or on a separate piece of paper.

14. If the claimant is an individual, that person must sign the claim. If the claimant is a corporation, an officer of the company must sign the claim. All signatures must be in ink to be valid.

15. If the claim is presented by a legal representative, that legal representative must also sign the claim. Provide the complete address and phone number of that legal representative.

Submit your claim, with any necessary information, evidence, and documentation to:

ATTN: CLAIMS ADJUDICATION
NATIONAL POLLUTION FUNDS CENTER
US COAST GUARD STOP 7100
4200 WILSON BLVD STE 1000
ARLINGTON VA 20598-7100

Claims for Natural Resource Damages or for Loss of Subsistence Use of Natural Resources may be addressed to "ATTN: NATIONAL RESOURCE DAMAGES CLAIMS DIVISION".

We recommend that you keep the Privacy Act Statement and a copy of the claim for your files.

APPENDICES

This page is intentionally blank.

APPENDIX A. Contacts Names, Positions, Telephone Numbers

STATEWIDE CONTACT INFORMATION

The following table represents statewide agency contact information:

Agency	Office Phone	24-hour Emergency Phone	Physical/Mailing Address
USCG, Rescue Coordination Center Juneau	907.463.2000	800.478.5555	PO Box 25117 Juneau, AK 99802-5517
USCG National Response Center	202-267-2180	800-424-8802	USCG (CG-3RPF-2)-Room 2111-B 2100 2nd St SW Washington DC 20593-0001
Alaska Marine Exchange	907.463.2607	907.463.2607	1000 Harbor Way Suite 204 PO Box 21714, Juneau, AK 99802
ADEC/SPAR/PERP ETS Coordinator	907.269.3063	800.478.9300	555 Cordova Street Anchorage, AK 99501
USCG, Sector Anchorage	907.581.3466	907.229.8203	501 L Street- Suite 100 Anchorage, AK 99501-1946
USCG Sector Juneau	907.957.0159	907.957.0159	2760 Sherwood Lane Suite 2A Juneau AK 99801
USCG Air Station Kodiak	907.487.5889	800.833.3489 ext 5889	PO Box 190033 Kodiak, AK 99619-0033
USCG Air Station Sitka	907.966.5429	907.738.0593	
176th Wing, Air National Guard, 11th Air Force Rescue Coordination Center	907.551.7230	800.420.7230	Elmendorf Air Force Base Anchorage, AK
NAVY Supervisor of Salvage	907.382.2968	907.384.2968	Fort Richardson, AK

UNALASKA ETS INFORMATION

Illustration sl-1 shows the approximate location for each ETS component in Unalaska. The Unalaska Harbormaster has access to and knowledge of the exact location of each of the ETS components.

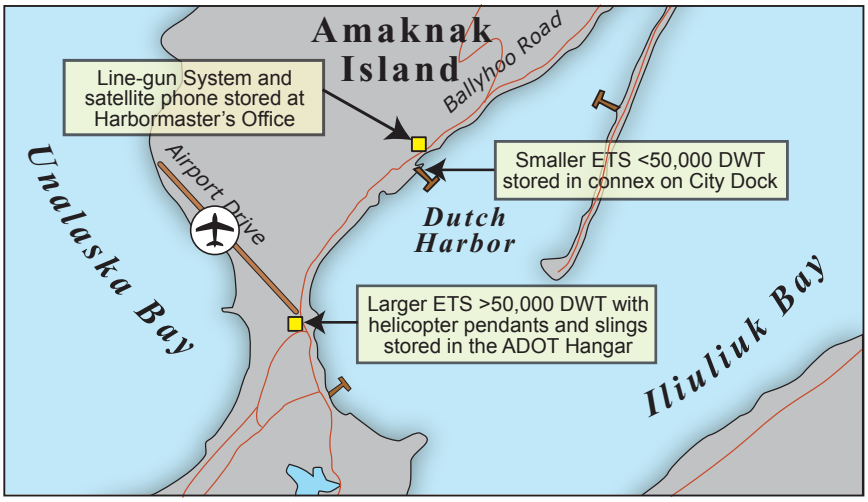


Illustration sl-1.

There are two ETS maintained for immediate deployment from the Port of Dutch Harbor. The City of Unalaska owns the smaller of the two ETS and ADEC owns the other. The Harbormaster maintains the ETS and will provide services to transfer either of the ETS to the airport (for helicopter mobilization) or a dock (for rescue tug mobilization).

The City owns a Line-gun, which is stored at the Harbormaster's office, as well as a satellite phone. These components should be checked for operability and maintenance at the same time the ETS is repacked.

UNALASKA CONTACT INFORMATION

Agency	Office Phone	24-hour Emergency Phone	Physical/ Mailing Address
USCG MSD Unalaska	907.581-3466	907-359-6737 907-359-6738	PO Box 920446 Dutch Harbor, AK 99692
International Port of Dutch Harbor, ETS Custodian	907.581-1254	907.359.1254	PO Box 610 Unalaska, AK 99685
Alaska Marine Pilots Association	907.581.1240	907.581.1240	176 Kashega Dr PO Box 920226 Dutch Harbor, AK 99692
City of Unalaska	907.581.1251		PO Box 610 Unalaska, AK 99685
Master of James Dunlap	907.581.2733	907.581.2733	PO Box 921052 Dutch Harbor, AK 99692
Master of Gyrfalcon	907.581.1664	907.581.1664	
Alaska Marine Agencies	907.581.1467	907.581.1467	PO Box 920105 Dutch Harbor, AK 99692

ADAK ETS INFORMATION

Illustration sl-2 shows the approximate location for each ETS component. The Adak Harbormaster has access to and knowledge of the exact location of each of the ETS components.

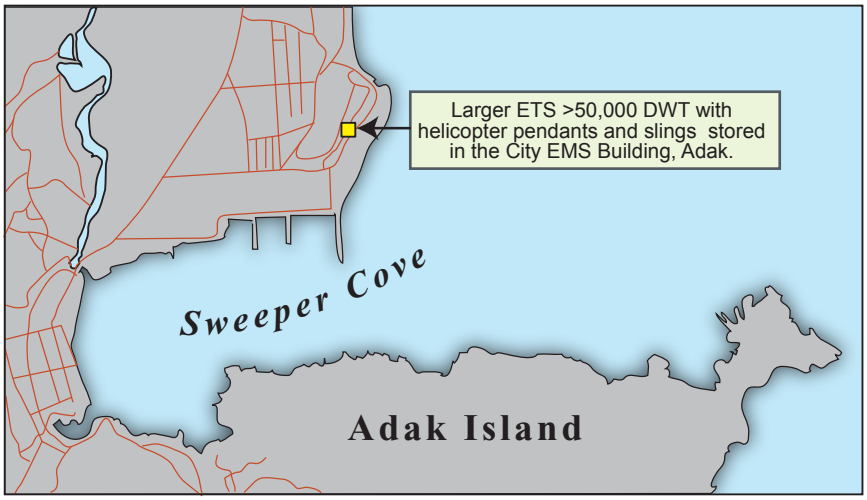


Illustration sl-2.

ADAK CONTACT INFORMATION

Agency	Office Phone	24-hour Emergency Phone	Physical/Mailing Address
City of Adak, ETS Custodian	907.592.4500 Cell: 907.577.2058	907.577.2060	City of Adak PO Box 2011 Adak, AK 99546-2011
USCG, Sector Anchorage	907.581.3466	907.229.8203	501 L Street- Suite 100 Anchorage, AK 99501-1946
USCG Air Station Kodiak	907.487.5889	800.833.3489 ext 5889	PO Box 190033 Kodiak, AK 99619-0033
ADEC/PERP/CART ETS Coordinator	907.269.3063	907.244.8126	555 Cordova St Anchorage, AK 99501

KODIAK ETS INFORMATION

Illustration sl-3 shows the approximate location for each ETS component in Kodiak. The USCG Air Station Kodiak personnel have access to and knowledge of the exact location of each ETS component.

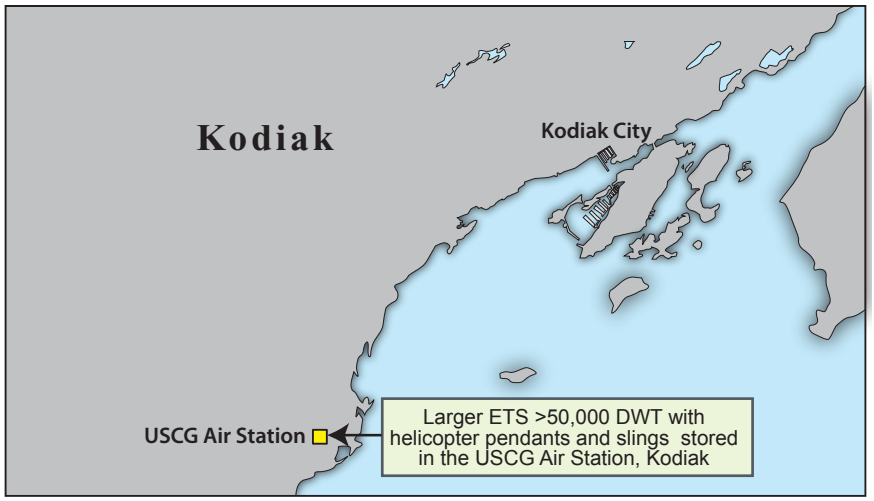


Illustration sl-3.

KODIAK CONTACT INFORMATION

Agency	Office Phone	24-hour Emergency Phone	Physical/Mailing Address
USCG, Sector Anchorage	907.581.3466	907.229.8203	501 L Street- Suite 100 Anchorage, AK 99501-1946
USCG Air Station Kodiak, ETS Custodian	907.487.5889	800.833.3489 ext 5889	PO Box 190033 Kodiak, AK 99619-0033
ADEC/PERP/CART ETS Coordinator	907.269.3063	907.244.8126	555 Cordova St Anchorage, AK 99501
Southwest Alaska Pilots Association	907.235.8783		1230 Ocean Dr Homer, AK 99603
USCG, MSD Kodiak	907.486.5918	907.486.9766	PO Box 190055 Kodiak, AK 99619-0055

FORT RICHARDSON ETS INFORMATION

Illustration sl-4 shows the approximate location of the ETS component located at the Navy Supervisor of Salvage Warehouse at Fort Richardson. The Navy Supervisor of Salvage personnel have access to and knowledge of the exact location of each ETS component.

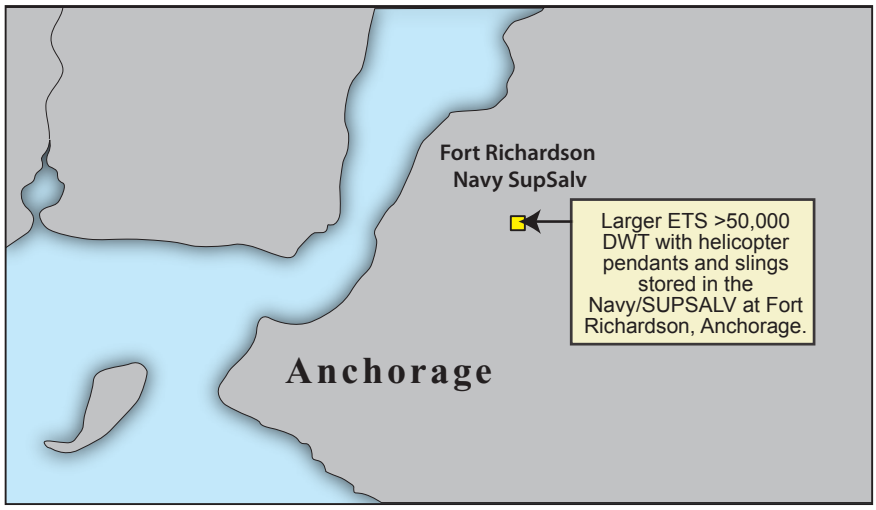


Illustration sl-4.

ANCHORAGE CONTACT INFORMATION

Agency	Office Phone	24-hour Emergency Phone	Physical/Mailing Address
USCG, Sector Anchorage	907.581.3466	907.229.8203	501 L Street- Suite 100 Anchorage, AK 99501-1946
USCG Air Station Kodiak	907.487.5889	800.833.3489 ext 5889	PO Box 190033 Kodiak, AK 99619-0033
ADEC/PERP/CART ETS Coordinator	907.269.3063	907.244.8126	555 Cordova St Anchorage, AK 99501
NAVY Supervisor of Salvage, ETS Custodian	907.382.2968	907.384.2968	Fort Richardson, AK
176th Wing, Air National Guard, 11th Air Force Rescue Coordination Center	907.551.7230	800.420.7230	Elmendorf Air Force Base Anchorage, AK

SITKA ETS INFORMATION

Illustration sl-5 shows the approximate location for each ETS component in Sitka. The USCG Air Station Sitka personnel have access to and knowledge of the exact location of each of the ETS components.

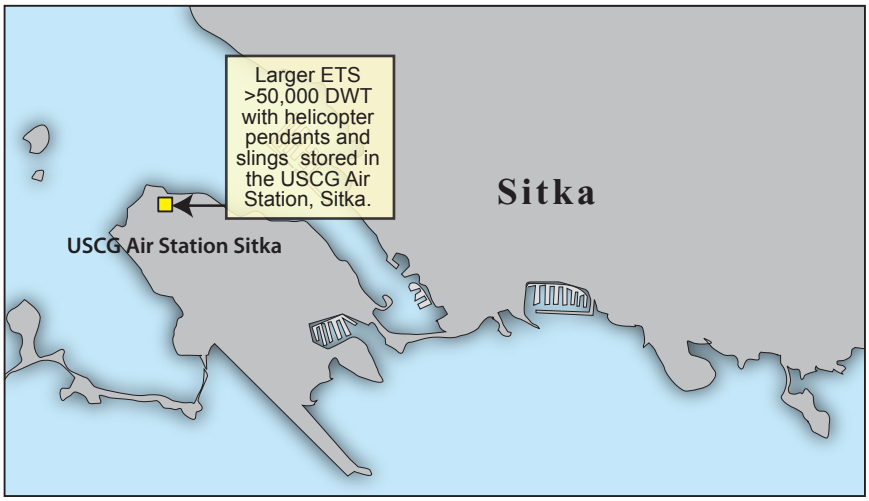


Illustration sl-5.

SITKA CONTACT INFORMATION

Agency	Office Phone	24-hour Emergency Phone	Physical/Mailing Address
USCG Sector Juneau	907.957.0159	907.957.0159	2760 Sherwood Lane Suite 2A Juneau, AK 99801
USCG Air Station Sitka, ETS Custodian	907.966.5429	907.738.0593	
ADEC/PERP/SART	907.465.5340	907.244.8126	410 Willoughby St. Juneau, AK
Southeast Marine Pilots Association	907.225.9696	907.225.9696	1621 Tongass Ave, Suite 300 Ketchikan, AK 99901

APPENDIX B. Rope Care and Usage

This page is intentionally blank.

Puget Sound ROPE

1012 SECOND STREET
ANACORTES, WA 98221
TELEPHONE 360-293-8488
FAX 360-293-8480
www.psrope.com

ROPE CARE AND USAGE

Puget Sound Rope is committed to making the highest quality rope in the world. All of our processes and products are guided by a Quality System that meets numerous federal and international quality standards, which we feel allows us to continually meet and exceed the needs and expectations of all of our customers.

In this commitment, we have created these guidelines to assist you in the care and usage of our rope. These basic guidelines will help to ensure you get the absolute best performance and longevity out of our product and use it in the safest manner possible.

These guidelines are not intended and do not create any warranties, express or implied. Puget Sound Rope expressly disclaims warranties or representations of any kind, express or implied, including the implied warranties of merchantability and fitness for a particular purpose. Puget Sound Rope shall not be liable for any consequential, incidental or contingent damages whatsoever stemming from the use of these guidelines.

USING THE RIGHT ROPE FOR THE RIGHT JOB

There are many decisions to be made in selecting the correct rope for your application. It is strongly recommended that a complete analysis of the application is performed by a competent professional to determine the best rope for the application. Each combination of rope material and construction has its advantages and disadvantages and the selection of a rope always involves compromises based on the type of service.

Type of material used in the manufacturing of the rope. There are a number of materials commonly used to manufacture ropes. Each material has its weak points and its strong points and there is no one material (regardless of price) that is best for all applications. Because of the differences in properties, composite or blended ropes should only be used in the specific applications for which they were designed.

Design of rope. Each product design has construction variances that directly relate to the performance of the rope. It is usually best to use a design that has proven performance in applications similar to the one being specified. As in the selection of materials, there is no single design that is best for all applications.

Size of rope. The size of the rope should adequately cover the load requirements of the application. Working loads, appropriate safety factors, and rope tensile strengths should be analyzed to determine the proper size of rope.

TENSILE STRENGTHS AND WORKING LOADS

Puget Sound Rope specifications are based on industry suggested Minimum Tensile Strength (MTS) qualifications. The MTS is based on test data from a significant number of break tests conducted on new and unused rope and is a value two standard deviations below the mean. The MTS is assumed to decrease once the rope is put into use.

Maximum Working Loads (MWL) are normally determined by dividing the MTS by the safety factor. The safety factor is a function of the physical properties of the rope, the age and history of the rope, the type of service in which it is to be used, and the risks involved if failure occurs. The safety factors vary from a minimum of a 3:1 ratio, where new rope being used in a static environment and failure would cause little or no risk to equipment or personnel, to as high as a 20:1 ratio, where severe conditions exists or where failure of the rope could cause severe risk to equipment and personnel.

Since there are numerous uses for our products, it is impossible to cover all application factors. For a rope manufacturer to give blanket working load recommendation would be like a car manufacturer giving the "safe driving speed" of their car. However, if any of the following adverse conditions exist, we suggest that you use the high end of the safety factor;

- Smaller sized ropes are used (damage occurs more quickly by cuts, abrasion, and sunlight)
- The maximum loading is not known
- Dynamic loading is likely to occur
- The rope is subject to rapid cyclic loading

- Operators are poorly trained in rope handling

- Rope is not inspected on a regular basis
- Rope may be exposed to harmful chemicals
- Rope is used or stored at elevated temperatures
- Rope has been exposed to long term sunlight
- Knots are used in the rope
- Rope will be bent around small radius corners or pulleys
- Death, injury, or loss of valuable property may result from failure

DANGER TO PERSONNEL

Failure of a tensioned rope and/or attached equipment is a serious hazard and can cause snapback, which may result in death or injury to personnel. Personnel handling rope should never stand in line with or within 45° on either side of a rope under tension. Should the rope part for any reason, the recoiling rope may swing in a random path away from the failure point violently striking anything in its path. If the risk for serious damage to equipment or injury to personnel exists, the working load should be lowered substantially and the rope inspected before each use.

ROPE INSPECTION

A regular inspection cycle should be established to determine the condition of the rope. The following conditions should be looked for;

- Kinks or twists
- Heavy chafing or seriously worn surface areas
- Cut, broken or frayed strands (outer and inner strands)
- Surface fusion or melted strands
- Evidence of Chemical exposure
- Compacted or hard areas of rope
- Splice movement

Although visual inspection of your rope can not accurately predict the residual strength, it does indicate problem areas that may need attention. If any of the above conditions exist or you doubt the strength of the rope, an analysis of the safety factor ratio should be conducted.

OVERHEATING

Heat has a direct effect on the rope's tensile strength. All synthetic ropes are affected by heat to some degree. Most ropes show a gradual decrease in strength as the temperature is increased. Our catalog gives a "critical temperature" for each type of rope at which it will lose approximately 20% of its tensile strength. This strength loss is temporary and the rope will recover its strength upon cooling.

In addition to the immediate strength loss synthetic ropes also experience long term degradation referred to as "heat aging". This strength loss is permanent and accumulative. In severe cases it may be accompanied by discoloration of the rope but usually there is no visual indication of heat exposure.

ULTRA VIOLET RADIATION (UV)

The most common source of ultra violet radiation is through exposure to direct sunlight. The effect of UV exposure varies with the fiber type, protective coatings, rope size and rope construction. The larger the rope the less effect UV has on the strength since the UV radiation is absorbed in the outer layer. For the same reason jacketed ropes or ropes with surface coatings will retain their strength better. UV degradation is usually more a problem of improper storage conditions than of use conditions.

KNOTS AND SPLICING

For the best possible performance of the rope, an appropriate splice should be used to connect or terminate. Always contact the manufacturer for the recommended splice for the rope being used. Knots in ropes can cause a 60% loss of tensile strength and if used, an analysis of the safety factor ratio should be conducted.

ROPE STORAGE

The following conditions should exist when storing the rope for any period of time;

- The Storage area should be clean, dry and cool
- There should be adequate ventilation in the storage area
- The rope should be stored off the ground
- The rope should be stored away from metal walls or steam valves
- The rope should be stored away from exposure to sunlight
- The rope should be stored away from any type of chemicals

CHEMICAL EXPOSURE

Ropes may be damaged from direct contact with or from fumes of numerous chemicals. To ensure that you receive only the best performance, operators should try to avoid any acids, alkalis, solvents, paints, etc., coming into contact with the rope. The following table is provided to show the chemical resistance of our ropes when short term chemical exposure occurs on the material used to manufacture the rope.

ROPE TYPE

CHEMICAL	***Plasma®***	***Spectra®***	***Nylon***	***Polyester***	***Co-Polymer***
Common Acids	Excellent	Excellent	Good	Good	Very Good
Alkali	Excellent	Excellent	Excellent	Very Good	Excellent
Common Solvents	Excellent	Excellent	Good to Very Good	Good to Very Good	Good
Clorox	Very Good	Very Good	Excellent	Excellent	Fair
Gasoline	Excellent	Excellent	Very Good	Very Good	Good
Kerosene	Excellent	Excellent	Very Good	Very Good	Fair - Moderate affect
Hydraulic Fluids	Excellent	Excellent	Very Good	Very Good	Fair - Moderate affect

In the case of chemical exposure, operators should immediately clean the rope with any type of mild detergent and then rinse completely.

Questions? ***Please call us at any time, we'll be happy to answer any technical or product-related questions you may have.***

This page is intentionally blank.

APPENDIX C. Inspection Guidelines for Plasma® Synthetic Ropes

This page is intentionally blank.

Puget Sound ROPE

1012 Second Street
Anacortes, WA 98221 USA
Telephone: 360-293-8488
Fax: 360-293-8480
www.psrope.com
email: sales@psrope.com

Inspection Guidelines for Plasma® Synthetic Ropes

Puget Sound Rope Company

Plasma ropes have been used extensively in numerous diverse applications for many years. Over this time period, particular operating conditions and hazards have been identified which are more harmful to Plasma than to steel. The presence of these conditions can best be determined by periodic inspection of the lines. This guideline presents recommendations for conducting periodic inspection by the end user

Conditions to be avoided in Plasma Lines

There are three areas where close attention needs to be paid to Plasma lines. Below are descriptions of these conditions and likely signs of their presence.

1. Repeated lateral abrasion against sharp edges. While HMPE is one of the most cut-resistant polymers available, metal can prove to be stronger than Plasma in a long-duration abrasion event. Signs of excess abrasion include strand pullouts, heavy fuzzing and cut strands in a single area, and localized bunching. It should be noted that normal light fuzzing of the Plasma rope surface is to be expected in normal use. This light fuzzing does not reduce the rated strength of the line, and actually creates a protective layer on the rope that helps to prevent further damage.

2. Plasma begins to lose strength above about 160 ºF, and has a zero-strength temperature around 250 ºC. Signs of high temperature damage include, melting, fused strands, and significantly reduced diameter. The fused strands should not be confused with high-tension compression of the rope which might appear similar. With standard urethane coatings, the rope can appear melted after high tension has been applied while the rope is bent around a surface. This is normally not melting and can be worked out with little effort. The rope strength is not affected.

3. Plasma lines can lose strength if overstrained. This can be the result of exceeding the recommended design factor for an extended time period, or by instantaneous peak loads during dynamic loading events. A typical design factor is 5:1, but this should be determined in conjunction with the application engineer. Signs of overstraining can be subtle but include localized thinning and elongation, and loss in flexibility (for example the rope becomes rigid).

Inspection Guidelines for Plasma Rope

Below are some suggestions for inspecting Plasma for the above damage conditions. Each end user should develop their own method of routinely inspecting these lines for damage prior to heavy use. The method and frequency of inspection will depend on the end users experience and usage level.

1. Lay rope out under hand tension so the entire length can easily viewed.

2. Visually inspect the entire length of rope for signs of abrasion, heavy fuzzing, stiff regions, fused or melted regions or thinned areas. Make note of any damaged areas.

3. Relate any damage to service over hardware for possible situation remedies.

4. Monitor for overloading. To accomplish this, put a small (less than 10% of break load) but repeatable load on the line. In subsequent inspections a similar load should be applied again, so determine a method that will give approximately the same load each time. Put a bright mark on the line at a point just beyond the tail of the splice (one suggestion is to use a bright colored ribbon through one or two strands of he rope). Put another bright colored mark (or ribbon) approximately 20 feet down rope from first mark.). These marks will be a reference for future measurements and should be located securely. While under reference tension, using a flexible tape measure, measure the length between reference marks. Write down this reference length and compare it to previous or subsequent measurements.

5. Keep a detailed record of the line reference length as well as any damage areas and their approximate locations relative to one or both reference marks. Future inspections should be used to monitor minor damage areas for signs of growth.

Inspection Frequency

The end user should determine the frequency of rope inspections. For heavy use, the rope should be carefully inspected prior to each day's use. The user should also perform a quick visual inspection (without length measurement) prior to any use of the rope.

Rope Replacement:

Ropes that show severe damage should be replaced, repaired (damaged areas cut out and re-spliced), or down-rated to other applications. Examples of severe damage in Plasma rope include (but are not limited to):

a. More than 2 strands severed within a 2-foot segment

b. Fused segment that is no longer flexible (strands not separable)

c. Segment whose diameter is 20% less than other part of the rope

d. Melting on one side that fuses one or more strands together

e. Rope that has lengthened (between reference marks) by more than 10%

Note: It has been found that cleaners/degreasers containing d'Limonene (citrus based cleaners) can rapidly deteriorate HMPE based ropes. Avoid contact with this chemical.

Each end user will determine through experience which signs of damage are more indicative of impending failure. (For example, the critical damage mode of a rope that fails in service might be identified if the location of the break can be traced to damage noted in a prior inspection.)

Plasma represent a significant technological breakthrough in high strength lifting lines; however, as with any synthetic fiber rope product, Plasma lines have a much better chance of meeting expectations when coupled with careful maintenance and periodic inspection.

APPENDIX D. Exercise Plan

This page is intentionally blank.

Exercise Plan

Emergency Towing System

(Date)
(Location)

1. Exercise Sponsors.

This exercise is sponsored by:

(LIST ORGANIZATIONS)

2. Purpose.

The purpose of this annual exercise is to familiarize all the participants with the Emergency Towing Systems (ETS) and deploy the systems via helicopter and tug to a simulated distress vessel in (LOCATION).

3. Exercise Objectives.

Overall objectives for this exercise are:

- Safety of participants and observers
- Mobilize ETS to airport and dock for deployment by helicopter and tug
- Practice actual deployments
    - Helicopter - Ship - Tug
    - Tug - Ship
- Capture video and still photography needed to document the training and update training materials.
- Obtain and validate procedures for the Procedures Manual

The objectives for each Stage are discussed in Annex C - Stage Specifics.

4. Exercise Organization.

(LEAD PERSON/AFFILIATION) will be the Director of the Exercise. HE/SHE will be assisted by the following team coordinators:

- Safety: MARINE PILOT representative & USCG Representative
- Port Operations: NAME
- Aerial Operations: USCG, Kodiak Air Station and/or Sitka Air Station
- Tug Operations: NAME
- Shipboard Operations: NAME
- Communications: NAME

5. Exercise Participants.

The following organizations will participate in the exercise:

- USCG
- Alaska Department of Environmental Conservation
- Local Government
- Marine Pilots Association
- Industry (NAMES)
- Towing Company (NAMES)

In addition to participants, there may be a number of VIP observers during the deployment stages. The Exercise Director will coordinate observers during the exercise.

6. Scenario Overview.

The scenario is a vessel (*NAME OF VESSEL*) is disabled and in need of towing assistance. For the purpose of this exercise two deployment methods will be practiced: helicopter-ship-tug and tug-ship. Operations are not constrained by time, sea state, or weather. This is not a performance test, but an opportunity to practice/verify/modify procedures for the safe and effective deployment of the ETS.

7. Concept of Operations.

The overall process of mobilizing the ETS and deploying it will be exercised in stages for control, safety, and video production.

Stage I. Pre-Exercise Briefing (LOCATION)

Stage II. (LOCATION) harbor/airport operations (mobilization/loading of ETS's)

Stage III. Helicopter mobilization to ship

Stage IV. Ship to tug deployment

Stage V. Tug to ship deployment

8. Concept of Control.

Overall the Director of the Exercise provides control for this exercise. A safety and operations briefing will precede the actual deployment of the ETS's. In consultation with all key participants, the Director of the Exercise will determine the start time/date. Tentative exercise date is (DATE), weather permitting.

9. Exercise Artificialities.

This exercise will have many artificialities; it is not intended to measure anyone's performance, but rather as an opportunity to develop and validate procedures for the ETS components. Participants are encouraged to ask questions and raise issues as each portion of the deployment is practiced.

The disabled vessel will be adrift in the LOCATION area at the beginning of the deployment. Once the ETS is made-up, the disabled vessel will be towed a short distance and then the towing system will be released and recovered by the ship. The disabled vessel will not be brought to the dock during the exercise.

10. Exercise Assumptions.

Participants will abide by their normal organizational safety rules and procedure, unless otherwise specified in the Safety Plan in Annex A. It is assumed that participants are knowledgeable, trained, and qualified for the roles that they are asked to perform in this exercise.

11. Administration and Logistics.

Each participating organization will appoint a coordinator for their participants. Air travel, meals, and ground transportation will be provided by each participating organization.

Administrative Contacts

- USCG –
- ADEC -
- Local Government –
- Marine Pilots Association –
- Industry-
- Towing Company -

12. Safety.

The Safety Officer for this exercise is (NAME/ORGANIZATION). The Safety Plan is contained in Annex A.

Safety is always the highest priority for any exercise. Safety is everyone's responsibility. If anyone observes an un-safe act or condition, immediately take whatever actions are necessary to correct the problem (including stopping the exercise play) and notify the Stage Coordinator and/or Exercise Director.

In the event of an actual emergency, cease all exercise play by announcing "This is Not a Drill, we have an actual emergency." The message should be relayed to all exercise participants.

13. Communications

The Communications Plan for this exercise is contained in Annex B. Communications will be conducted through cellular and satellite telephones, channel 22a VHF marine radio, and USCG aviation radios.

14. Reports.

Each participant is encouraged to keep a log (ICS 214) for their activities, noting issues for updating the procedures manual.

15. Schedule of Events.

Time	Event	Location	Stage Coordinator
DATE			
	Stage I. Ops Briefing		
Following briefing, wx permitted	Transportation to vessels and exercise location. Observer vessels:	Participants to disperse to their assigned vessels and the vessels will move to their assigned locations	
Following briefing	Stage II. Mobilization and Loading of ETS's		
	Stage III. Helicopter mobilization to ship	Airport to LOCATION	USCG
	Stage IV. Ship to tug deployment		
	Stage V. Tug to ship deployment		
	De-brief		
	Return critique, check-out of exercise, return to duty		ADEC, USCG, City

16. Annexes

Annex A: Safety Plan

Annex B: Communications Plan

Annex C: Logistics

Participant assignments

Vessel information

Annex D: Map

- ANNEX A -

SAFETY PLAN FOR EMERGENCY TOW EXERCISE

A-1) Overview –

Safety is the first overall objective for this exercise. Safety is always the highest priority and is everyone's responsibility. If anyone observes an un-safe act or condition, immediately take whatever actions are necessary to correct the problem (including stopping the exercise play) and notify the Stage Coordinator and or the safety offices. A 1,000-yard safety zone will be established around the ship's location on the 2nd day of the exercise.

A-2) Personal Protective Equipment: –

Each participant is responsible for providing their own PPE including:

- USCG approved Personal Flotation Device (for anyone on deck of a vessel)
- Hearing protection
- Eye protection
- Hard hat (for anyone on the bow of the tramper or working within 50 feet of lifts by cranes or forklifts)
- Clothing for weather conditions

A-3) Safety Briefings: –

It is the responsibility of the Stage Coordinator to conduct an operational and safety briefing prior to each stage.

A vessel safety briefing will be conducted onboard each vessel immediately after boarding for all non-crew participants. Safety Officers from the Coast Guard will be on board each vessel platform and provide safety oversight for the exercise.

A-4) Communications as related to safety: –

Communications shall be prefaced with "THIS IS A DRILL" or "EXERCISE – EXERCISE – EXERCISE." In the event of an actual emergency, cease all exercise play by announcing "THIS IS NOT A DRILL, WE HAVE AN ACTUAL EMERGENCY." The message should be relayed to all exercise participants. Emergency communications will occur on Marine VHF Channel 16.

Safety broadcasts shall be conducted by the Harbor Master on Channel-16 beginning 1-hour in advance of the ETS deployment exercise and continue every hour until completion of the full exercise. The following announcement will be used:

Securite, Securite, Securite....Hello all stations this the Port of Dutch Harbor with a safety broadcast notice to mariners, Break.....the U.S. Coast Guard and City of NAME will be conducting a safety exercise in (LOCATION) that will take place from (TIME/ DATE). Mariners are advised to stay clear of the area, all vessels entering the 1000 yard safety zone will announce their presence and intentions on Channel 22a...Break... this is the Port of LOCATION...OUT.

Any vessel entering the 1,000 yard safety zone will announce their presence and intentions on Channel 22a.

The FAA will be notified by the USCG air crew, prior to helicopter operations and asked to notify other airmen.

A-5) Stage Safety –

Specific safety issues associated with each stage are:

Stage II – City of LOCATION/Airports Operations

- Port personnel will follow established safety procedures.
- Everyone should be alert for slips, trips, and fall hazards.
- Anyone within 50 feet of lifting operations, must have a hard hat and steel toe shoes
- Beware of backing equipment and aircraft movements

Stage III – Helicopter Mobilization to Ship

Observers at the airport must be aware of helicopter noise and rotor wash. There will be a lot of noise and wind associated with the helicopter. Things will blow around from the rotor wash, which can reach 100mph. Damage can occur to personnel, buildings, the helicopter, etc. from objects being blown around.

- PPE: Hearing and eye protection are required. Ski-type goggles are recommended for eye protection, as they won't blow away.
- Observers should stay at least 100 yards from the helicopter during lifting operations.
- In anticipation of helo ops, it is imperative that ground personnel ensure the area is clear to mitigate possible damage.
- When approaching the helicopter, never enter under the rotor arc unless the pilot or crewmember has given a "thumbs up" or waved in signal.
- When entering the rotor arc, stay low, move quickly and go directly to the helicopter. There are various areas around the helo (depends on the helo though) that are more dangerous. For example, the tail rotor area is to be avoided. Additionally, with our H65, we teach folks to avoid entering the rotor arc near the nose as the rotor disc can move to as low as 5 feet under certain condition.
- During load hook up, ground parties should attempt hook up expeditiously to avoid prolonged hover time. Once hook up is complete, ground parties should depart the area in the opposite direction of entry and stay clear of the helicopter and load until it is lifted and clear.
- Onboard observers and ships crew should not be under the helicopter when it is hovering over the bow. PFD, hearing protection, safety glasses, and hard hats with chinstraps are required for anyone on deck.

ETS Load Preparation

The primary goal of load preparation is to provide a load that will ride safely in flight, and arrive at the destination undamaged. External loads are subject to extremely high winds during transportation, and shall be prepared accordingly.

Cargo Net Loading

The provided cargo net will be utilized to transport the ETS. The load shall be prepared as follows:

- o Avoid lightweight (less than 100 lbs.) loads because of their instability during flight.
- o Do not load small items on the bottom of the net where they could be forced out of the openings in the net.
- o Cover or secure together lightweight or small items to keep them from blowing out of the net.
- o Once lightweight or small items are packed together, place them on top of the larger loads.
- o One method of safeguarding small items against loss in flight is to secure the corners of the net together by taking opposite corner rings and weaving them through at least two (2) web straps in the webbing below the opposite rings.
- o Fasten the sling leg through all four (4) corner rings.
- o When the helicopter lifts the net, the weight of the load will cinch the net tight, and prevent losing items through the net.
- o Secure the net corner rings with a becket.

- WARNING - Lightweight loads can be blown up into the bottom of the helicopter, or fly up into the rotor blades.

- CAUTION - Never attach the safety hook to any point other than the designated attachment point. Never connect a load in any way other than directly to the safety hook. Kinking and chafing will damage the lifting equipment.

Delivery of ETS

Delivery of the ETS may be conducted with vessels provided a 15-foot obstruction clearance can be maintained at all times. These operations should not normally be conducted above Sea State 4. Before any ETS delivery operations, a thorough brief shall be conducted to include at a minimum the following items:

- ⇑ Drop off area shall be suitable to both the disabled vessel's Captain and the Aircraft Commander.
- ⇑ The disabled vessel shall conduct a Foreign Object Damage (FOD) walk down as best able before commencing operations and includes examining the drop off area and removing or securing lightweight and small items.
- ⇑ Procedures to follow in the event of an emergency.
- ⇑ Relative wind direction for drop off.
- ⇑ Ensure the ETS is properly secured and free of FOD.
- ⇑ The approach of the helicopter shall be announced as best able to the disabled vessels topside crew.
- ⇑ Only personnel needed to conduct ETS deliver operations should be allowed on deck.
- ⇑ Before moving in to pick up the ETS, the helicopter shall be clear of the disabled vessel.

- ⇑ The disabled vessel's crew shall be aware of the danger associated with static discharge and briefed not to touch the load until the helicopter has released the cargo hook and the ETS is safely on deck.

- ⇑ Radio communications with the helicopter while it is in a hover over the ETS delivery zone are distracting, and should be limited to urgent communications only.

- ⇑ The helicopter will normally complete the approach into the wind, arriving in a hover just off the disabled vessel.

- ⇑ When the approach of the helicopter is announced, all personnel will clear the ETS delivery area.

- ⇑ Pilot, when ready, transmits on the radio to the disabled vessel: "Request permission to hover for ETS delivery."

- ⇑ Disabled vessel Captain answers: "Roger, you are cleared to hover for ETS delivery."

- ⇑ Pilot, using commands from the helicopter crewman, maneuvers the helicopter over the ETS delivery area.

- ⇑ Helicopter crewman gives directions for spotting and lowering the load. As soon as the load is on deck, the crewman informs the pilot.

- ⇑ When the pendant slackens, the crewman in charge on disabled vessel signals the pilot to release the load. The pilot or crewman (as briefed) releases the cargo hook.

- **WARNING -** Once the helicopter has been cleared to hover, personnel shall not enter the ETS delivery area until after the load is on deck. No attempt shall be made by personnel to steady the load during delivery.

- **WARNING -** The crewman in charge on disabled vessel shall be stationed well clear of the ETS delivery area. The pilot shall attempt to maintain visual contact with the crewman in charge on disabled vessel at all times.

  If the pilot loses sight of the crewman in charge on disabled vessel, he or she shall advise the aircrew who will relay the crewman in charge on disabled vessel signals.

- **WARNING -** The pilot shall maneuver the helicopter so to be able to see and avoid all obstructions.

- **WARNING -** Releasing the load before there is slack in the pendant can cause damage to the aircraft, cutter, load, and/or injury to personnel.

- **NOTE -** The sling may not immediately release from the aircraft cargo hook. If the sling hangs up, the pilot shall initiate a slow vertical climb, gradually applying tension until it separates from the hook.

- **CAUTION -** Nets, beckets, and cargo wrap-around straps shall never be cut.

- **CAUTION -** If the cargo handling procedures are not followed, damage to the helicopter, loss of equipment, and injury to personnel could result.

- WARNING - Under no circumstance shall flash pictures be taken during night ETS delivery since the flash will temporarily blind the pilots.

Stage IV –Ship to Tug Deployment

- Non-crew members will receive an onboard safety briefing covering emergency life saving equipment and where to go in the event of a shipboard emergency.
- Anyone on deck must wear PPE including: PFD, hard hat, and eye protection.
- There will be a Marine Pilot stationed on the bridge of the ship to serve as a safety observer for any VIPs. All visitors to remain on the bridge unless otherwise advised.
- During transit and all other times be respectful of bridge personnel.
- Safety officer shall be pilot or other person assigned by pilot.
- Do not make-fast the messenger line or tow line until instructed to do so by the Stage Coordinator
- There will be a minimum number of persons located on the bow of the ship
    - Marine Pilot
    - Vessel crew needed for line deployment operations
- There will be a minimum number of persons located on aft deck of the tug
    - Vessel crew needed for line retrieval operations
- No one is allowed on the bow of the ship or on the aft deck of the tug during towing.

Stage V – Line Gun Operation and Tug to Ship Deployment

Line Gun Operation

- PPE: Safety Glasses and hearing protection shall be worn by the shooter and all personnel in the immediate vicinity.
- Treat the line launcher system with the same safety considerations as a firearm.
- Make sure there is an operator safety zone for the deployment of the launcher.
- Aboard Tug: Perform all loading and firing operations at the rail with the gun pointed outboard in a safe direction, i.e., clear of rigging, ship's structure, antennae or any obstacles on which the line may become fouled.
- When transporting or carrying a gun from its place of stowage, be sure that the safety is engaged.
- Position the gun after firing to prevent line entanglement after firing and during the projectile's flight. Keep the gun elevated until the projectile reaches its target.
- Ensure that the shot line is secured to the projectile prior to firing.
- When firing the gun, make certain that the line of aim is well over the heads of and away from personnel on the receiving vessel.
- Watch for personnel in and beyond the target area.
- Give adequate warning and receive confirmation prior to firing the launcher.
    - The tug captain will communicate the following commands to the ship's crew via VHF radio and whistle signals:
        - One Whistle - Make Ready for Line-gun Shot
          We intend to shoot a line-gun projectile to the bow of your ship, once you are prepared to receive it. Have your deck crew wear hard hats and stationed at the bow of the ship to receive the line. Acknowledge with one whistle.

        - Two Whistles - Standby for Line-gun Shot
          We are prepared to shoot and assume that you are prepared to receive. Please acknowledge that your crew is prepared. Have to crew on your bow take cover until the projectile is fired. Acknowledge with two whistles.

        - Three Whistles - Line-gun Shot to Follow Immediately
          The line-gun will fire immediately after this signal.

Tug to Ship Deployment

- Non-crew members will receive an onboard safety briefing covering emergency life saving equipment and where to go in the event of a shipboard emergency.
- Anyone on deck must wear PPE including: PFD, hard hat, and eye protection.
- There will be a Marine Pilot stationed on the bridge of the ship to serve as a safety observer for any VIPs. All visitors to remain on the bridge unless otherwise advised.
- During transit and all other times be respectful of bridge personnel.
- Safety officer shall be pilot or other person assigned by pilot.

- There will be a minimum number of persons located on the bow of the ship during line hook-up operations
    - Marine Pilot
    - Vessel crew needed for line retrieval operations
- There will be a minimum number of persons located on aft deck of the tug during line hook-up operations
    - Vessel crew needed for line deployment operations
- No one is allowed on the bow of the ship or on the aft deck of the tug during towing.

Observer/Safety Boat Safety

- Non-crew members will receive an onboard safety briefing covering emergency life saving equipment and where to go in the event of a shipboard emergency.
- Anyone on deck must wear a PFD.
- Observer/Safety boat captains shall communicate with the Marine Pilot representative prior to leaving the dock to determine your station during the exercise.
- Observer/Safety boat captains shall announce their presence and intentions on Channel 22a when entering the 1,000 yard safety-zone around the tramper.
- Observer boat captains shall stay at least 500’ away from the tug and ship during towing operations.

- ANNEX B -
COMMUNICATION PLAN

1. Incident Name ETS Deployment Exercise	2. Operational Period (Date/Time) **From:** **To:**	**INCIDENT RADIO COMMUNICATIONS PLAN** ICS 205-OS

3. BASIC RADIO CHANNEL UTILIZATION

SYSTEM/CACHE	CHANNEL	FUNCTION	ASSIGNMENT	REMARKS
Marine VHF	**22a**	**Primary Communications**	**All exercise participants**	**General Exercise Communications**
Marine VHF	**16**	**Emergency Communications**	**All exercise participants**	
Marine VHF	**81**	**Secondary Communications.**	**All exercise participants**	**Logistics and Support**
Marine VHF	**66a**			**Captain Gyrfalcon**
Cell Phone		**Exercise Director**		**Exercise Director**
Satellite Phone		**Ship Ops**	**Marine Pilot Representative**	**Marine Pilots**
Cell Phone		**Ship Ops**	**Marine Pilot Representative**	**Marine Pilots**
Cell Phone		**Tug Boat Name**	**Captain**	
Cell Phone		**Tug Boat Name**	**Captain**	
Cell Phone		**USCG**		**MSD Unalaska**
Cell Phone		**Port Ops**		**Port Director**
Cell Phone		**ADEC**		**PERP**

INCIDENT RADIO COMMUNICATIONS PLAN **ICS 205-OS**

- ANNEX C -
LOGISTICS

Participant Information

Vessel Information

Vessel	Organization	Designation	Participant Capacity	Contact	Boarding Location
		Distressed Vessel			
		Rescue Tug			
		Rescue Tug			
		Observers			
		Observers			
Port Vessel	Port of	Safety			

Notes: *Participant capacity is in additional to crew

- ANNEX D -

LOCATION MAP

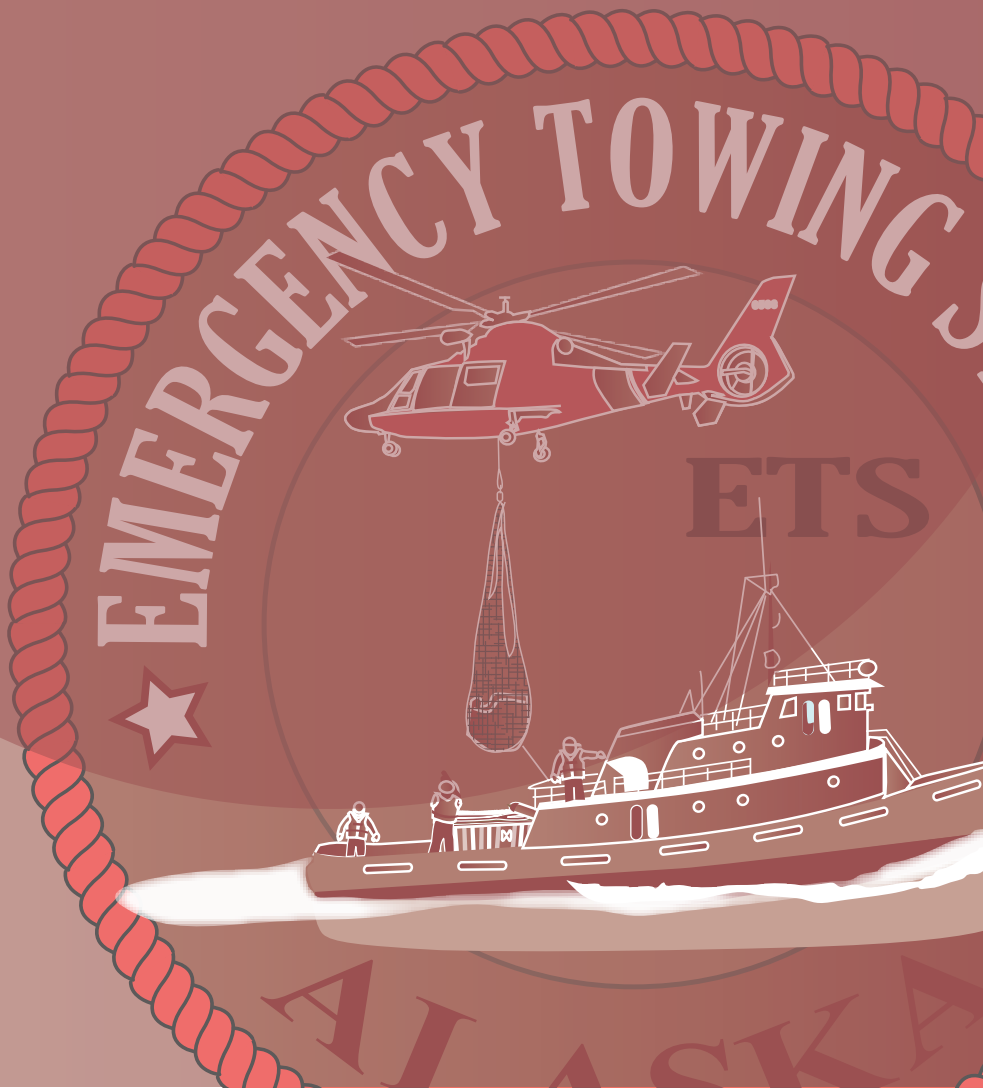
This page is intentionally blank.

APPENDIX E. Acronyms

ADEC	Alaska Department of Environmental Conservation
ADOT	Alaska Department of Transportation (State of Alaska Dept of Transportation and Public Facilities)
AMX	Alaska Marine Exchange
D-17	USCG District 17
DOT	Department of Transportation (State of Alaska Dept of Transportation and Public Facilities)
DRAT	District Response Advisory Team (U.S. Coast Guard)
DWT	Deadweight Tonnage
EMS	Emergency Medical Services
ETA	Estimated Time of Arrival
ETS	Emergency Towing System
FAA	Federal Aviation Administration
FOD	Foreign Object Damage
FOSC	Federal On-Scene Coordinator
HMPE	High Modulus Polyethylene
ICS	Incident Command System
kN	Kilo Newton (with reference to ETS breaking strength)
MSD	Marine Safety Detachment (U.S. Coast Guard)
MTS	Minimum Tensile Strength
MWL	Maximum Working Load
NAVSUPSALV	U.S. Navy Supervisor of Salvage
NPFC	National Pollution Funds Center
NPSC	North Pacific SAR Coordinator (NPSC, U.S. Coast Guard)
OPA	Oil Pollution Act of 1990
OSLTF	Oil Spill Liability Trust Fund
PERP	Prevention and Emergency Response Program (ADEC)
PFD	Personal Flotation Device
PPE	Personal Protective Equipment
PRFA	Pollution Removal Funding Authorization
RP	Responsible Party

SAR	Search and Rescue
SPAR	Spill Prevention and Response (ADEC)
SWL	Safe Working Load
USCG	United States Coast Guard
UV	Ultraviolet radiation


EMERGENCY TOWING SYSTEM
ETS
ALASKA


EMERGENCY TOWING
ETS