CHAPTER 10
T-ATF OIL SPILL CONTAINMENT AND RECOVERY SYSTEMS

10.1 SYSTEMS OVERVIEW

The T-ATF Class ship (Figure 10-1) and crew have the capability to support oil containment and recovery operations with augmentation from the SUPSALV Emergency Ship Salvage Equipment Maintenance (ESSM) pool of response personnel and equipment. The T-ATF cargo handling gear, open deck, and berthing accommodations enable the ship to serve as a self-sustaining transport and support vessel for the pollution response equipment and personnel en route to an incident. Upon arrival at the operations site, the T-ATF crew, in conjunction with the embarked SUPSALV and ESSM support team, deploy the equipment and mutually support each other in the ensuing oil spill containment and recovery operations.

Figure 10-1. T-ATF Class Vessel

ESSM equipment to be embarked and deployed from the T-ATF is scenario dependent, and while three viable operational possibilities are discussed here in detail, both the vessel and the ESSM personnel need to recognize that other combinations of equipment and personnel are likely to be encountered as the response plan is developed. Early and continuous coordination between SUPSALV, the T-ATF, and ESSM personnel during the planning phase of an operation is an essential step for a successful loadout, deployment, and the follow on oil containment/recovery operations. Flexible adaptation of the basic principles discussed in the three baseline scenarios below will enable the task force to be successful in responding to mission changes utilizing other combinations of equipment from the ESSM pollution response pool. In most cases, it is beneficial for the T-ATF to have a clear aft deck during Pollution Operations, and therefore the removal of the tow bow and aft tow pin box assembly located on the stern of the T-ATF is necessary.

T-ATF oil spill containment and recovery operations may be employed using any combination of one or more three basic scenarios, depending on the type of spill, as outlined below:

a. Skimming operations utilizing the Class V Skimmer

b. Skimming operations with the High Speed Current Buster Skimmer

c. Containment and deflection operations with the Oil Containment Boom Systems and the associated Boom Mooring Systems

Integrated within each of the above scenarios is the requirement for the T-ATF to provide logistics support including berthing, rations, weather, force protection, decontamination assistance, and husbandry to the skimming and containment crews stationed aboard for the duration of operations.

A discussion of the basic scenarios follow, however it must be emphasized that the above scenarios are not mutually exclusive and it should be recognized that a combination of elements from all three scenarios is the most probable employment of the pollution response assets from the T-ATF platform.

10.1.1 Class V Skimmer Operations. The Class V Skimmer System consists of a 36′ Skimmer Vessel, two 24′–30′ Boom Handling Boats (BHBs), two 330′ sections of 42″ boom, a 21,000–26,000 gallon towed oil storage bladder, a Shop Van, Tiedown Kit, a Rigging Van and the Shipboard Support System. The Skimmer System is stowed, assembled, and deployed from the T-ATF with the combined effort of the T-ATF and embarked ESSM crews. The Shop, Rigging, and Shipboard Support System vans, if selected for mission accomplishment, remain aboard the T-ATF in a support mode for the duration of the response operation.

Several employment options are possible once the Class V Skimmer System is launched from the T-ATF. The first option employs two BHBs with the Class V Skimmer operating independently of the T-ATF when skimming. This is referred to as the “Towed Skimming” mode. A second option is a version of the “Towed Skimming” mode where a single BHB tows the outboard leg of the skimmer and the T-ATF tows the inboard leg of the skimmer. In a third option for employment, commonly called the “free skimming mode”, the Class V Skimmer operates independently without boom legs or tow boats. In all cases the Class V Skimmer normally tows the Oil Storage Bladder astern. With the mentioned skimming alternatives, the Class V Skimmer, in conjunction with the T-ATF is capable of recovering oil

in harbors, protected waters, or in open waters in sea states (SS) up to high SS2, low SS3 depending on a variety of factors within those sea states.

Operational scenario dependent, the best option for employment of the Class V Skimmer is determined by the SUPSALV representative, and subsequently, in conjunction with the T-ATF, and ESSM crews, a stow plan and deployment plan is developed. Within all of these options, consideration needs to be given to the fact that the deployed Class V Skimmer assets have limited survivability above low SS3. As a result, attention must be given to recovering the BHBs early and either recovering or towing the skimmer, bladder and boom astern during conditions above the noted low SS3 operational window. In all cases, the T-ATF remains the support platform or "mother vessel" for Class V Skimmer operations unless it is relieved by another suitable platform or shore based facility.

10.1.2 High Speed Current Buster Skimmer Operations. The High Speed Current Buster System consists of a NOFI current buster stored in an ISO 20′ x 8′ x 8′ Shipping Container and an accompanying ISO 8′ x 8′ x 8′ Support Container. Stored in these two containers are the High Speed Current Buster System, an outrigger, a paravane, a small hydraulic crane, a power pack, and an assortment of supporting skimmers. The supporting Oil Recovery Bladder and Vessel Tiedown Kit are shipped separately. In addition, BHBs as well as Shop, Rigging, and Cleaning Vans may support the High Speed Current Buster operations depending on the scenario. The High Speed Current Buster is comprised of an inflatable V-boom that funnels collected oil through a sluice and into a containment pocket at speeds up to 4 knots. When assembled the unit is approximately 90′ long. The unit is stored on and deployed over the stern of the T-ATF from a hydraulically operated reel. The outrigger assembly consists of a universal king post that is mounted to the ship's rail in the vicinity of frames 67 and 68 and a 45′ outrigger that is supported on the inboard end by the king post and a cylindrical float on the outboard end. A second option for deployment uses the king post to support the inboard end of the V-formation and a paravane to control the outboard end of the assembly. Also provided is a universal pad eye that can be welded to the ship's hull, negating the need for the king post in securing the inboard leg of the High Speed Current Buster. These options, the outrigger and the paravane, enable the T-ATF to operate the current buster on the T-ATF independently of other large support boats.

As with the Class V System, several other options for deployment of the High Speed Current Buster are available to the user aboard the T-ATF. When deployed with two BHBs, the High Speed Current Buster may act independently of the T-ATF. The current buster may also be deployed with the T-ATF acting as the inboard tow vessel and a BHB on the outboard leg of the V sweep. The 8′ x 8′ ISO van, in which the paravane and the hydraulic crane are stored for shipment, also serves as the elevated mounting base for the crane which positions and tends the selected skimmer in the current buster pocket. This van also contains an assortment of PPE and cleaning supplies to support shipboard operations for a limited time.

In all operational modes, the skimmer is placed in the current buster pocket using the hydraulic crane mounted on the 8′ x 8′ ISO support container secured on the stern quarter of the T-ATF. The supporting hydraulic hoses are routed from the power pack on deck of the T-ATF to the skimmer head on the crane hook, and the discharge hose is routed from the skimmer head over the deck of the T-ATF to the Oil Recovery Bladder towed astern of the T-ATF.

With similar sea state limitations, as the Class V Skimmer, the T-ATF becomes the mother vessel for all aspects of the current buster operations and due diligence must be given to impending weather conditions as low SS3 conditions are the limits of oil recovery operations.

10.1.3 Oil Containment Operations. Oil containment operations are normally conducted using 42″ or 26″ inflatable boom that is anchored with their associated mooring/anchoring systems. Both the 42″ and 26″ boom are normally stored in 20′ ISO containers weighing approximately 30,000 pounds. While stowing the entire van aboard the T-ATF is possible, the most likely method of stowage is to remove the pallets of boom from the container and stow them aboard the vessel separately, leaving the van shoreside. The Boom Mooring Systems for the 42″ boom are stored in wire mesh baskets weighing approximately 6000 pounds. The mooring systems for the smaller 26″ boom are easily handled lightweight Fortress anchors stored in wire mesh baskets. As with the skimmer systems, deployment of the Shop, Rigging and Cleaning Vans or components of these systems are normally part of the oil containment operations.

Deployment of the 42″ boom and its associated moorings with one shot of 2 1/4″ chain requires close coordination between the T-ATF crew and the ESSM team. The boom and anchors must be faked out on deck in a systematic manner to enable the vessel to run down the length of the intended containment area while simultaneously deploying the anchors, chain, and the attached boom.

Deployment of the 26″ boom is normally best accomplished by using the T-ATF as a semi stationary platform in deeper water for inflating the boom and preparing anchors in support of smaller boats that are placing the boom and anchor systems in shallow water.

10.1.4 Logistics and Support of Operations. When deployed in support of pollution response operations, the T-ATF is tasked to fully support the deployed SUPSALV and ESSM force structure to include the following: security, emergency medical treatment, evacuation, berthing, messing, water, sanitation, laundry, fuel, recreation and special communications. The degree of support will depend on the operational environment and tempo. If the operation is within a port facility, berthing may not be needed and messing might only be required for certain meals. The details, numbers, times, and duration of the support requirements should be specified during the mission tasking development phase of the operation and adjusted during the operation as necessary to accomplish the mission. The T-ATF will need to ensure that the extra rations, bedding, and general supplies, required to support the deployed ESSM crew, are requisitioned and aboard the vessel prior to departure and that sustainment for the operational duration is ongoing.

10.1.4.1 Mother Ship, Cleanup, and Habitability Requirements. The oil spill response mission is most likely to create an excessively dirty/oily environment on and around the T-ATF. Skimming and boom operations in any oils, especially black oils, will result in equipment (including the ship and personnel) that are highly contaminated with the product. The objective should be to isolate the contamination to the aft deck of the T-ATF by establishing a routine for both personnel and equipment that effectively limits the spread of contamination to the area aft of the superstructure. Within the aft deck area, a phased clean up regime should be established using the concept of a hot zone, warm zone, and cold zone. Components of the ESSM Shipboard Support System such as sorbents, containment pools, and pressure washers augmenting T-ATF wash down and laundry services can be deployed to assist in the cleaning operation. The cleaning of personnel should progress from an initial gross wash

down, removal of contaminated clothing, a final wash down, and a clean clothes station before entry into the vessel superstructure proper. Sufficient, segregated waste containers need to be aboard to collect the contaminated sorbents, rags, and clothing that will accumulate as a result of the operation. Additional washing/drying machine capabilities may also be required to keep up with the skimmer crew's clothing requirements. While initial supplies must be aboard at departure, an adequate re-supply pipeline is necessary to support the operation over time.

10.1.4.2 Support Equipment. The ESSM provided Shop Van, Rigging Van, Decontamination Van, Shipboard Support System, and Tiedown Kit may be set up for operation on the T-ATF and act as pollution support facilities for the various operations required of the mother vessel. Additional refuse containers are also required. Again, depending on the scenario, other ESSM support vans may be required.

The Shop Van, Rigging Van, Decontamination Van, and Shipboard Support Van, if selected for deployment, are loaded onto the aft deck of the T-ATF and secured with either the T-ATF tiedown gear or the ESSM provided vessel Tiedown Kit, in conjunction with the T-ATF Baxter bolt eyes. Dunnage is required under the vans to prevent metal to metal contact. ESSM vans in general are 220 volts and can be wired for operation using the ESSM provided 440/220 transformer, eliminating the need for a separate generator. Installation support for the transformer from the T-ATF Chief Mate and electrician is required for safe operation.

10.2 PRIMARY ESSM OIL POLLUTION RESPONSE EQUIPMENT DESCRIPTION

10.2.1 Class V Skimmer System. The Class V Skimmer System (see Figure 10-2) is outfitted with the machinery necessary to draw and separate spilled oil from the water, store the recovered oil, and transfer it to an off-vessel storage bladder. The equipment used to accomplish this task are a 36′ Sorbent Belt Oil Skimmer Vessel, two 330′ sections of 42″ or USS-42 Boom, two tow boats, and a spill recovery bladder. Figure 10-2 depicts the typical configuration for using the Class V Skimmer with two tow boats in the "Towed Skimming" mode.

10.2.1.1 Oil Sorbent Belt Class V Skimmer SK0711. The Oil Skimmer SK0711 is a 36′ aluminum vessel (Figure 10-3) fitted with a rotating sorbent belt for oil recovery. The skimmer is self-propelled and can function in stationary, free-skimming, and towed V-boom configurations. When used offshore or in open water, the skimmer is towed in a V-boom configuration by a pair of SUPSALV BHBs or alternately the T-ATF on one leg and a SUPSALV boom handling boat on the other leg.

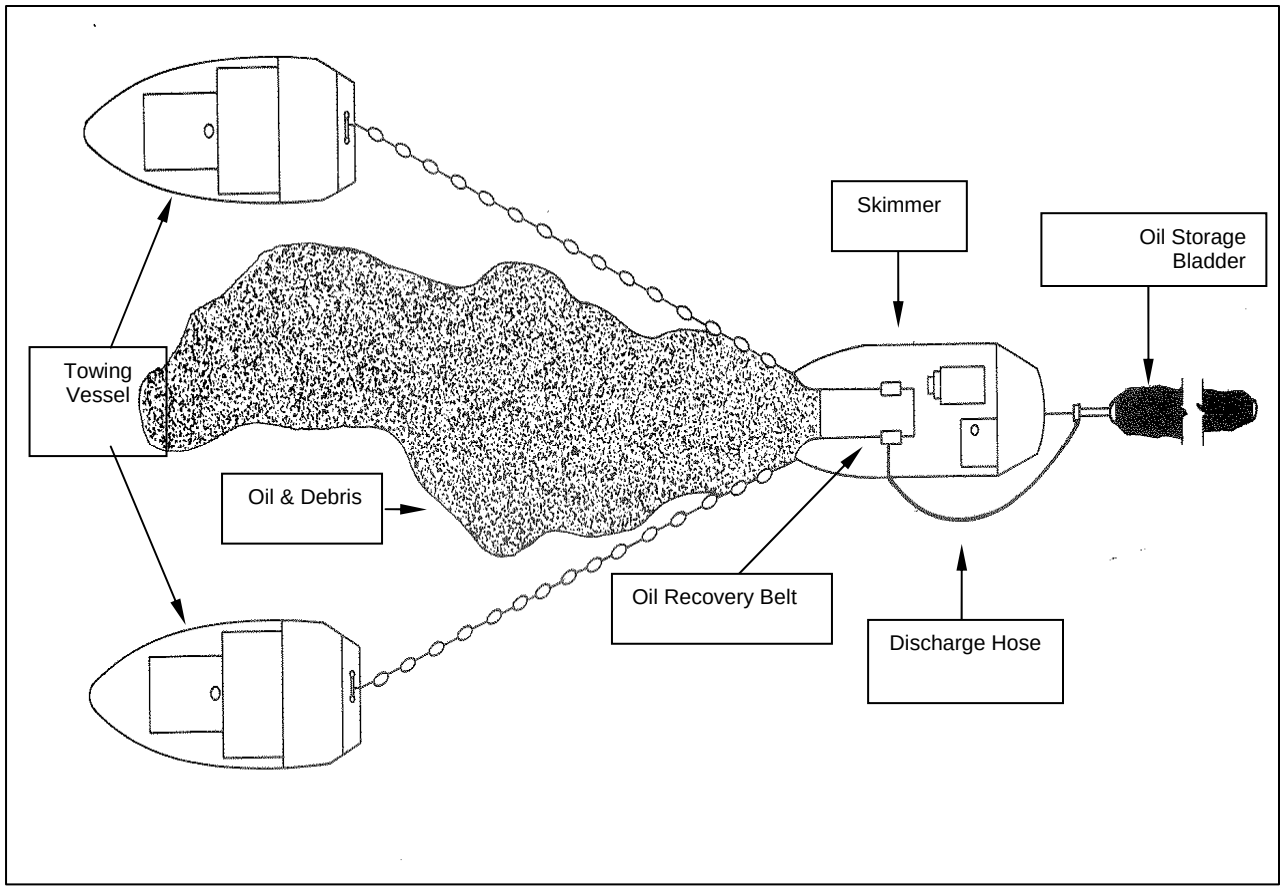

Figure 10-2. Class V Skimmer System

Primary Class V vessel power is provided by an onboard a 4-cylinder diesel engine. This engine drives a series of hydraulic pumps, which drive various hydraulic motors and cylinders. Most vessel functions are hydraulically activated. This includes vessel propulsion, steering, and the operation of the bilge pumps, filter belt module, induction pump, and offloading pump. The engine also drives an air compressor to pressurize the filter belt squeeze cylinders.

To eliminate the transit time required to offload oil from the skimmer, an Oil Storage Bladder of 21 or 26 thousand gallon capacity is normally towed by the Class V Skimmer.

SKIMMER SPECIFICATIONS

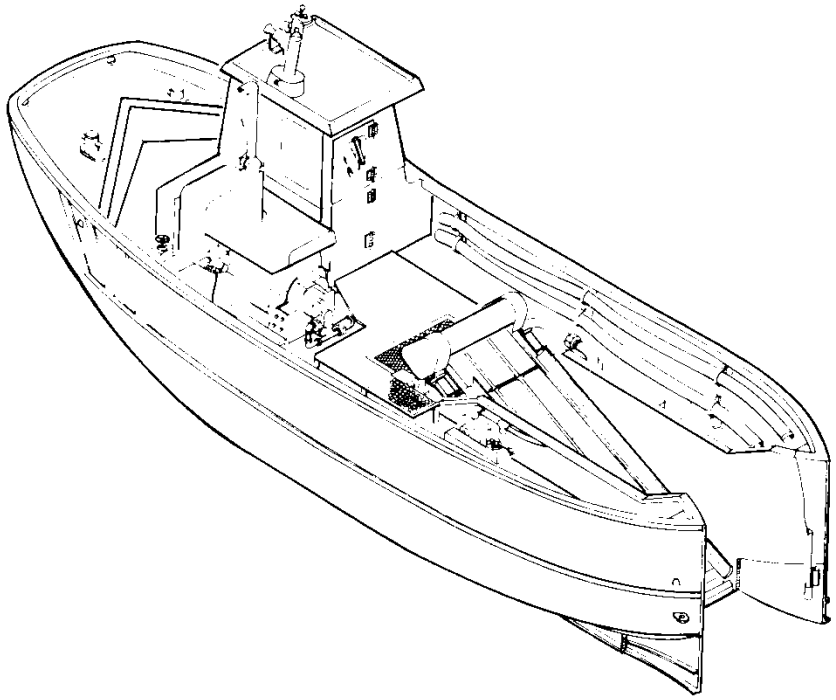

Figure 10-3. Class V Skimmer

Crew	3
Draft (empty)	3 ft, 2 in
Draft (loaded)	4ft, 0 in
Displacement (full load)	32,000 pounds
Hoisting Weight	17,300 pounds
Construction	Welded aluminum
Length	36 ft, 0 in
Beam	12 ft, 0 in
Height (including pilothouse)	15 ft, 8 in
Capacities	
Fuel Tank	75 gallons
Sump Tank	40 gallons
Engine	Detroit Diesel-Series 53 100 HP @ 2400 RPM
Speeds (maximum)	
Transit Towing	10 knots
Self-Propelled	5 knots
Towed Skimming	2-1/2 knots

10.2.1.2 USS-42 & USS-42HB Boom Storage Pallet BM0876 and Oil Containment Boom BM0738. The 84″ x 60″ x 7″ USS-42/USS-42HB Boom Storage Pallet BM0876 (see Figure 10-4) is a storage/shipping container for either the USS-42 or the USS-42HB boom. The pallet has two configurations. One configuration is with stanchions that are 66″ tall. This configuration is used in the Oil Containment Boom Vans and is designed to hold 12, 55′ sections of USS-42 or USS-42HB 42″ boom. The second configuration is with stanchions that are 32″ tall due to storage restrictions in the Sponson Rack (SK0712) used with the Modular Skimmer System. This configuration is used with the Modular Skimmer System only and is designed to hold six 55′ sections of USS-42 42″ boom.

Figure 10-4. USS-42 42″ as used with the Marco Class V on the Boom Storage Pallet

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	5 ft, 0 in
Height	2 ft, 8 in (with 330′ of boom)
Height	5 ft, 6 in (with 660′ of boom)
Weight (with USS-42HB)	3250 lb
Weight (USS-42)	3442 lb
Cube	93 cu ft

*Pallet may have either six each 55′ sections of 42″ boom (330′) or 12, 55′ sections of 42″ boom (660′).

10.2.1.3 21-26K Gallon Spill Recovery Bladders (Dracones) OB0809, OB0810. The Spill Recovery Bladders (Figure 10-5) are a flexible tube designed to carry petroleum products and other liquids lighter in weight than water. The spill recovery bladder's skin is made up of nylon cord, a woven nylon fabric that has been weatherproofed, and abrasion-resistant synthetic rubber.

The spill recovery bladder, which is between 90–126′ long, is towed behind the skimming vessel using a 6″ towline. A 4″ or 6″ loading hose is attached to the towline for filling and discharging the skimmed oil to and from the bladder. In some cases the At Sea Offloading System Pump and 4″ suction hose may be attached to the stern of the recovery bladder, enabling a larger vessel or barge equipped with a hydraulic power unit, sufficient hose, and tankage to offload the bladder.

Figure 10-5. 21–26K Gallon Spill Recovery Bladder

PHYSICAL CHARACTERISTICS

	Shipping	Operating
Length	10 ft, 10 in	90–126 ft, 0 in
Width	5 ft, 11 in	6–7 ft, 0 in
Height	5 ft, 9 in	6–7 ft, 0 in
Weight	2630 lb	2200–2600 lb (empty)
Cube	369 cu ft	

10.2.1.4 At Sea Bladder Pumping System P17300. The At Sea Bladder Pumping System (see Figure 10-6) is designed to be attached to the stern of the 21K Oil Recovery Bladder to facilitate offloading the

bladders to a larger, better equipped, oil storage vessel in a seaway. The system contains a hydraulically operated positive displacement pump, a short section of floating discharge and hydraulic hose, and a pendant that facilitates attachment to the hydraulic and receiving hoses on the larger oil storage vessel.

Figure 10-6. At Sea Bladder Pumping System Attached to a 21K Gallon Oil Storage Bladder

PHYSICAL CHARACTERISTICS

	Operating
Length	20 ft, 0 in
Width	3 ft, 2 in
Height	2 ft, 0 in
Weight	450 lb
Cube	127 cu ft

10.2.1.5 19-CFM Diesel Air Compressor AC0501. The Air Compressor AC0501 (Figure 10-7) is a two-stage, high volume air compressor that provides 19 cfm at 125 psig. The air compressor is powered by a 1-cylinder, 6.2-hp diesel engine which has its own fuel supply tank. The engine is designed to operate at a continuous speed of 3600 rpm for long periods of time. The engine and compressor are enclosed in a protective frame that is mounted on top of a 30-gallon air storage tank with wheels, which allows for easy maneuverability. The air compressor may be eliminated or supplemented by the use of the T-ATF ship air with Chicago type fittings if space is an issue.

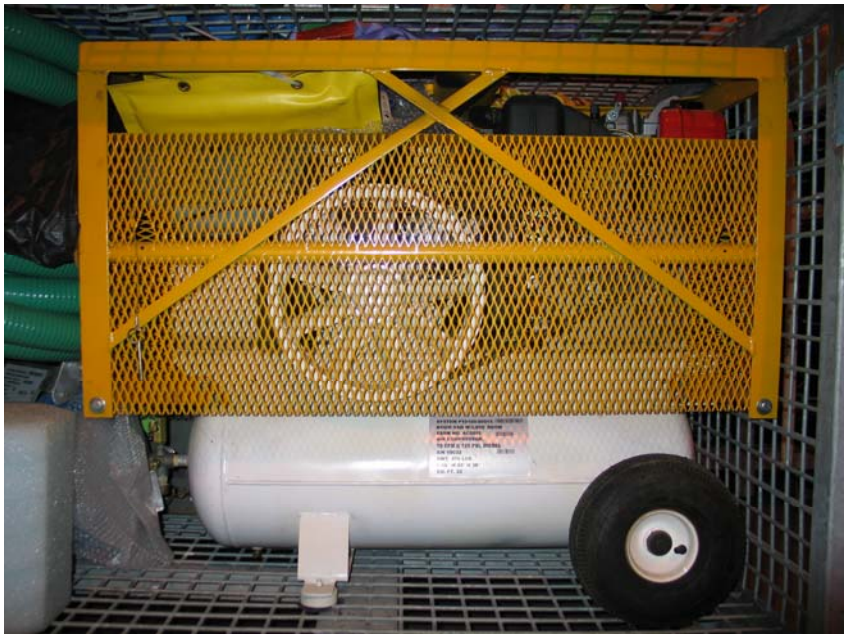

Figure 10-7. 19-CFM Diesel Air Compressor

PHYSICAL CHARACTERISTICS

	Shipping
Length	3 ft, 10 in
Width	2 ft, 3 in
Height	3 ft, 1 in
Cube	27 cu ft
Weight	405 lb

10.2.1.6 Dracone Marker Buoy BU0023. The Dracone Marker Buoy BU0023 consists of a 40″ diameter Styrofoam base for flotation. Extending 22″ above the base is a 12″ diameter column which houses a 6-volt battery and a steady-burn white light with lens. The light's on/off function is controlled automatically by a photocell. The Marker Buoy is to be exhibited at or near the aft-most part of the Dracone being towed or moored. The Marker Buoy is used only on the 26K gallon Dracone as the 21K gallon unit has a built in marker light mount.

Figure 10-8. Dracone Marker Buoy

PHYSICAL CHARACTERISTICS

	Shipping/Operating
Height	5 ft, 2 in
Diameter	3 ft, 2 in
Cube	52 cu ft
Weight	115 lb

10.2.1.7 15′ Inflatable Boat WB0717. The 15′ Inflatable Boat WB0717 (Figure 10-9) is a lightweight, multi-purpose boat. The boat is used to transport people, equipment and supplies, and numerous other jobs.

The hull is a U-shaped chamber with conical airtight bulkheads that ensure the safety and balance of pressure in the different compartments. An additional airtight compartment is the inflatable keel, which gives the bottom a V-shaped configuration.

The boat is equipped with aluminum floorboards, paddles, running lights, an anchor light, a stern light, a boat hook, and the necessary ancillary gear to operate and maintain it.

Figure 10-9. 15′ Inflatable Boat

PHYSICAL CHARACTERISTICS

	Operating
Length	4 ft, 11 in
Width	2 ft, 6 in
Height	1 ft, 2 in
Cube	15 cu ft
Weight	140 lb

10.2.1.8 15-HP Outboard Motors MT0940. A variety of gasoline driven 15hp Outboard Motors (see Figure 10-10), both 2 cycle and 4 cycle, support the inflatable boats in the Skimmer System. These motors have manual starting and portable fuel tanks.

Figure 10-10. 15-HP Outboard Motor

PHYSICAL CHARACTERISTICS

	Shipping
Length	3 ft, 0 in
Width	1 ft, 0 in
Height	3 ft, 8 in
Cube	11 cu ft
Weight	85 lb

10.2.1.9 Boom Handling Boats WB0722, WB0723. Boom Handling Boats (BHB) WB0722 (Figure 10-11) and WB0723 (Figure 10-12) are powerful all-weather towboats used for handling containment boom, towing V-boom skimming systems, and transporting personnel and equipment to either inshore or offshore spill sites. There are two different configurations of boats, a 24′and a 30′ model made by various manufacturers.

The 24′ Boom Handling Boat is stored and shipped on a cradle constructed from a 3 1/2″ steel channel and is made to fit the contour of the hull of the BHB. To prevent damage to the bottom of the boat, the cradle supports are fitted with 4″ x 4″ oak timbers covered with indoor-outdoor carpet and are bolted to the three sets of cradle supports.

Figure 10-11. 24′ Boom Handling Boat

PHYSICAL CHARACTERISTICS

	Operating
Length	24 ft, 9 in
Beam	8 ft, 0 in
Height	8 ft, 8 in
Cube	1716 cu ft
Weight	11,020 lb

The second, more powerful version of the Boom Handling Boat is the 30′ version which is capable of being shipped either on its own trailer or on its own reinforced bottom. When shipped on its own bottom, plywood dunnage should be placed underneath it prior to loading. Numerous external aircraft certified tiedown points along the gunwale simplify securing for ocean transport.

Figure 10-12. 30′ Boom Handling Boat

PHYSICAL CHARACTERISTICS

	Operating
Length	30 ft, 0 in
Beam	8 ft, 6 in
Height	8 ft, 0 in
Cube	1920 cu ft
Weight	13,000 lb

10.2.2 High Speed Current Buster System Vessel of Opportunity Skimming System. The High Speed Current Buster System (see Figure 10-13) is designed to be secured to and operated from a large vessel of opportunity such as the T-ATF. The High Speed Current Buster System consists of a High Speed Current Buster Skimmer, Minimax 12 Skimmer, Weir Skimmer, Vessel of Opportunity (VOSS) Outrigger Assembly, USS-26 Oil Containment Boom, 2″ peristaltic pump, and hydraulic power unit all stored in a 20′ ISO container. A second 8′ x 8′ support container houses the hydraulic crane, the paravane, assorted Personnel Protective Equipment (PPE), and limited cleaning supplies.

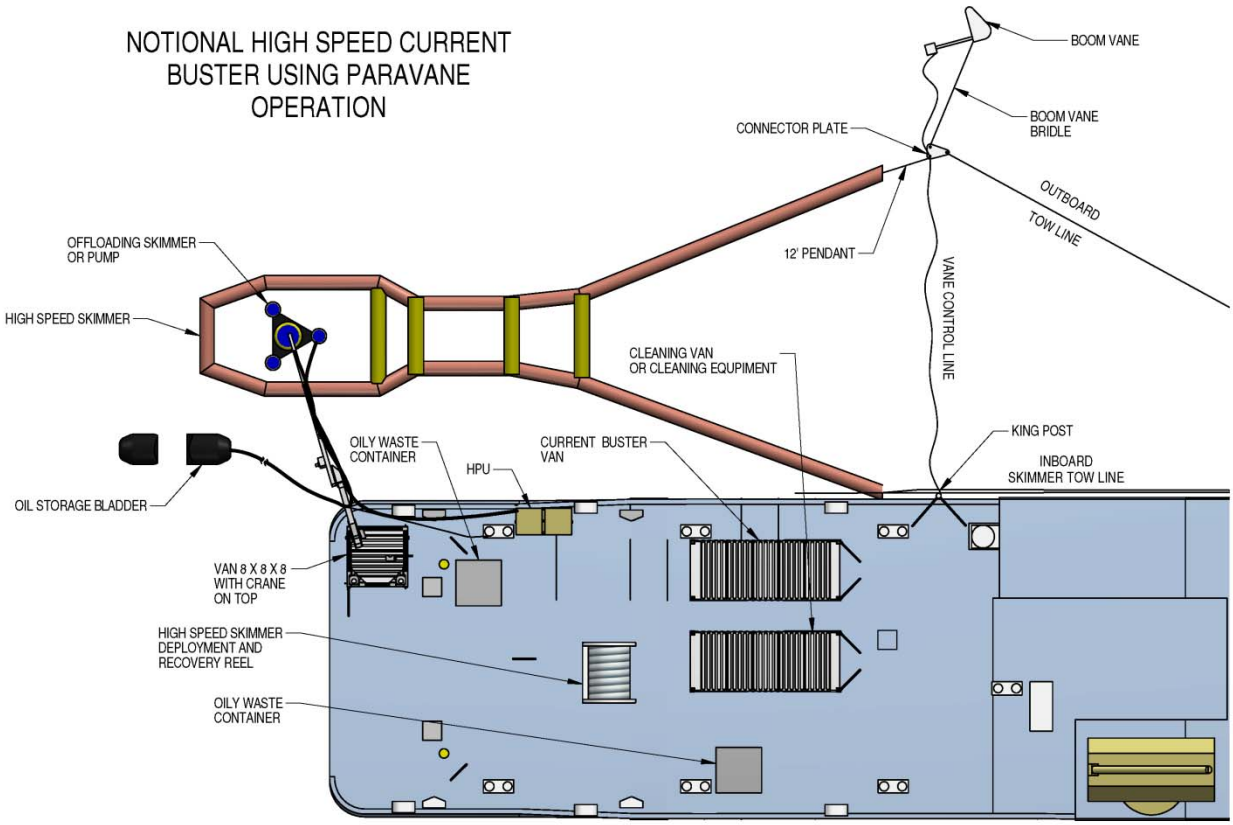

Figure 10-13. Notional High Speed Current Buster using Paravane Operation

10.2.2.1 High Speed Current Buster Van VA0935. The High Speed Current Buster Van (Figure 10-14) is a 20′ ISO container that serves as the shipping container for the main components of the High Speed Current Buster System. The major components of the system include the current buster on a storage reel, the king post and outrigger assembly, a hydraulic power pack and three oil skimmers, a mini max, a Skim Pac, and a brush skimmer.

Figure 10-14. High Speed Current Buster Van

PHYSICAL CHARACTERISTICS

	Shipping/Operating
Length	20 ft, 0 in
Width	8 ft, 0 in
Height	8 ft, 0 in
Cube	310 cu ft
Weight	20,700 lb

10.2.2.2 High Speed Current Buster Skimmer Reel. The High Speed Current Buster Skimmer Reel RL0051 (see Figure 10-15) is skid-mounted and hydraulically powered. The reel contains the High Speed Current Buster and two sections of 26″ x 55′ Model USS-26 Oil Containment Boom BM0760. The High Speed Current Buster Skimmer Reel is powered by a Model HT50DQV, 25 gpm @ 3000 psi Hydraulic Power Unit (PW0050). This HPU also powers the Wier Skimmer and the support crane associated with the system.

Figure 10-15. High Speed Current Buster Skimmer Reel

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 5 in
Width	6 ft, 4 in
Height	6 ft, 7 in
Cube	310 cu ft
Weight	5,090 lb (with NOFI Skimmer and Boom BM0760)

10.2.2.3 High Speed Current Buster Skimmer SK0050 and 26″ x 55′ Oil Containment Boom Model USS-26 BM0760. The High Speed Current Buster Skimmer SK0050 (see Figure 10-16) is capable of containing and collecting oil at towing speeds (or currents) up to 4 knots. It is capable of recovering oil with dramatically increased skimming efficiency due to low oil layer turbulence in the separator at the end of the system. The High Speed Current Buster Skimmer, in addition to containing oil at high towing speeds or currents, also separates the oil from the water and positively "controls" the oil for uncomplicated and highly efficient oil recovery. This skimmer is well suited for fast running rivers and narrow, high current straits, as well as being operated from a T-ATF or a variety of offshore supply vessels at speeds up to 4 knots.

The High Speed Current Buster Skimmer consists of a front sweep (standard opening 45 feet when used with the outrigger) for guiding oil product into the combined collector/skimming device and then into the separator tank (holding capacity approximately 7925 gallons) where the oil is recovered by a pump or a skimmer.

The Oil Containment Boom BM0760 (Figure 10-17) is an inflatable, rubberized, all-nylon construction boom that resists abrasions, gouging, oil, and salt water. The standard section has inflation chambers with an inflation/deflation valve. There is a piece of rubberized fabric that separates adjoining chambers and provides flexibility for the boom. Each inflation section is completely vulcanized with no stitched seams that can pull apart. Two 55′ sections of this boom are provided and can be attached to the NOFI Sweep to increase the encounter opening from 45′ to 70′.

The High Speed Current Buster and the two 55′ legs of USS-26 Oil Containment Boom BM0736 are shipped on the High Speed Current Buster Storage Reel RL0051 stored in the ISO container. Dimensions given are for combined shipping configuration. Refer to section 10.2.2.2.

Figure 10-16. High Speed Current Buster Skimmer

Figure 10-17. Oil Containment Boom

PHYSICAL CHARACTERISTICS

	Operating
Length	115 ft, 0 in
Width	45–70 ft
Weight	650 lb

10.2.2.4 VOSS Outrigger Assembly OA0010. The VOSS Outrigger Assembly OA0010 (Figure 10-18) is designed to meet the rigorous requirements for a boom that is light in weight, high in strength, and easily deployed. The outrigger arm assembly consists of three truss sections with flanged ends, an outboard float with mounting flange, a universal assembly with mounting bolt flange, and a pad eye plate for attachment of rigging to the outboard end of the arm. Each truss section has welded end plates with a symmetrical bolt pattern for a strong connection and easy alignment. The outrigger assembly can be assembled from two sections to form a 28′ wide sweep or from three sections to form a 42′ sweep. The outrigger arm length must be determined based on the limitations of the available vessel and expected skimming conditions. The designed working compressive strength of the 42′ outrigger arm is 8000 lb and is substantially higher for the 28-foot arm.

Figure 10-18. VOSS Outrigger Assembly

PHYSICAL CHARACTERISTICS

	Inboard Section	Middle Section	Outboard Section
Length	15 ft, 8 in	14 ft, 10 in	16 ft, 8 in
Width	1 ft, 7 in	1 ft, 7 in	1 ft, 7 in
Height	1 ft, 4 in	1 ft, 4 in	1 ft, 5 in
Cube	34 cu ft	32 cu ft	38 cu ft
Weight	80 lb	70 lb	140 lb

10.2.2.5 Boom Paravane BV0010. The Boom Paravane Assembly (see Figure 10-19) is a light weight assembly designed to power the outboard leg of the current buster to a full system encounter opening when underway without the use of the outrigger or a separate tow vessel. The design uses the water forces to propel the outboard leg away from the T-ATF and hold it in the open position using a high tensile forward tow line secured as far forward and as low as possible on the T-ATF. A small rudder adjustment line, controlled from the deck of the T-ATF, provides for fine tuning and steering to retrieve the paravane and the outboard leg of the current buster. The inboard leg of the system is held against the hull of the T-ATF using the king post assembly without the outrigger.

Figure 10-19. Boom Paravane

PHYSICAL CHARACTERISTICS

	Operating
Length	7 ft, 6 in
Width	7 ft, 1 in
Height	4 ft, 0 in
Cube	177 cu ft
Weight	138 lb

10.2.2.6 High Speed Skimmer Support Van VA0936. The High Speed Skimmer Support Van (Figure 10-20) is an 8′ x 8′ x 8′ ISO container that has dual purpose serving as a shipping container for the paravane, associated cleaning equipment, and the elevated support base for the mounted hydraulic crane. With the crane mounted on top of the container, it serves to tend the skimmer in the pocket of the High Speed Current Buster. The container and crane should be mounted as far aft and as close to the collection pocket of the current buster as practical using the supplied tiedown equipment in conjunction with Baxter bolts and the ship's structure. This support system also contains additional PPE and a wide assortment of cleaning equipment and supplies designed to facilitate operations while simultaneously confining the contamination aboard the vessel to the aft deck area.

Figure 10-20. High Speed Skimmer Support Van

PHYSICAL CHARACTERISTICS

	Operating
Length	8 ft, 0 in
Width	8 ft, 0 in
Height	16 ft, 0 in
Cube	1024 cu ft
Weight	6,500 lb (estimate)

10.2.2.7 HT50DQV Hydraulic Power Unit PW0050. The Hydraulic Power Unit PW0050 (see Figure 10-21) is a sound-attenuated unit designed to be used in areas where low sound levels are required. The HPU is a portable, diesel driven unit that provides hydraulic flow through a hydraulic circuit controlled by a manually operated hydraulic pressure switch. The total hydraulic output is 25 gpm at a pressure of 3000 psi. In conjunction with current buster operations, it is normally secured in the vicinity of frame 95 on the same side of the vessel as the current buster is deployed.

The HPU is skid-mounted with forklift slots and enclosed in a protective frame with two lifting points. Hydraulic connections utilize 1-inch Aeroquip 5600 series quick disconnect fittings (one male for supply and one female for return). A downstream hydraulic control block enables simultaneous operation of the crane and the skimmer.

Figure 10-21. HT50DQV Hydraulic Power Unit

PHYSICAL CHARACTERISTICS

	Shipping/Operating
Length	7 ft, 3 in
Width	3 ft, 0 in
Height	4 ft, 9 in
Cube	104 cu ft
Weight	2,860 lb

10.2.2.8 Wire Mesh Container 1. The metal wire mesh container #1 (Figure 10-22) is used to store and transport the ancillary equipment for the High Speed Current Buster Skimmer System. The equipment basket measures 84″ x 48″ x 47″ and contains the following major components: a 2″ peristaltic pump, a Model LPP 6HA/C75 power pack, a Minimax 12 skimmer, a LWS-50 Weir Skimmer, a 2″ Skim-Pak, and a hydraulic pressure washer, two 5-gallon cans of diesel fuel, a 5-gallon can of Rando 46 hydraulic fluid, a tabernacle clamp assembly, a rigging box, a crane subassembly, spare wheel plate inner tube, 2-piece outrigger jack stand, a 22″ x 18″ x 3″ tabernacle spacer, a 22″ x 18″ x 6″ tabernacle spacer, a 22″ x 18″ x 9″ tabernacle spacer, a tabernacle, a 16′ x 20′ tarpaulin, and various rigging hardware and ancillary components to setup and maintain the High Speed Current Buster.

Figure 10-22. Wire Mesh Container 1

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	4 ft, 0 in
Height	3 ft, 11 in
Cube	110 cu ft
Weight	2,520 lb

10.2.2.9 Wire Mesh Container 2. The metal wire mesh container #2 (see Figure 10-23) is used to store and transport ancillary equipment for the High Speed Current Buster Skimmer System. The equipment basket measures 84″ x 48″ x 47″ and contains the following major components: a gas powered portable blower, a 5′ x 5′ x 12″ containment pool, and the necessary ancillary equipment to setup and operate each major component of the High Speed Current Buster System.

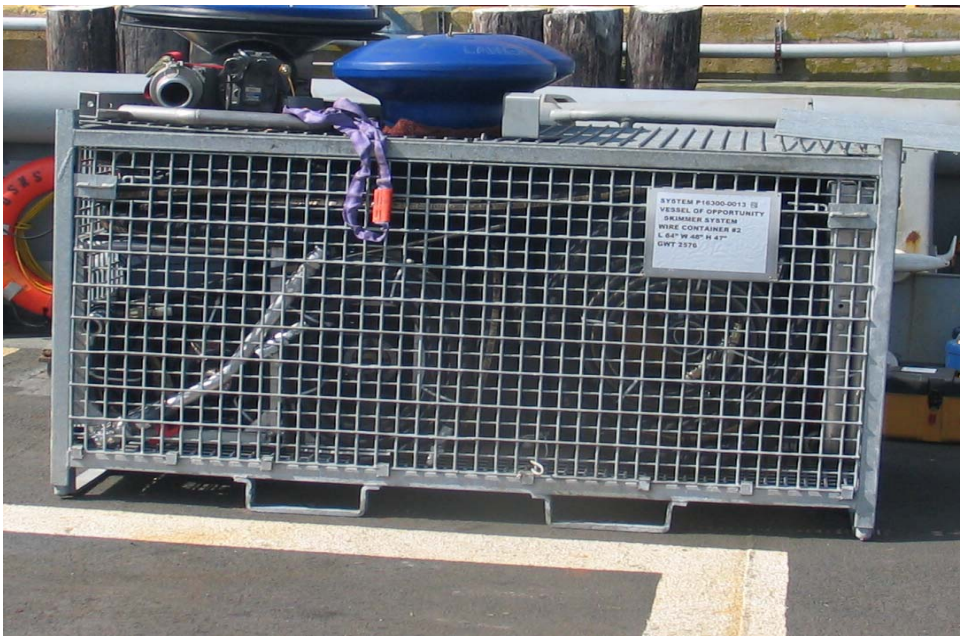

Figure 10-23. Wire Mesh Container 2

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	4 ft, 0 in
Height	3 ft, 11 in
Cube	110 cu ft
Weight	2,570 lb

10.2.3 Oil Containment Boom and Boom Mooring System. The Oil Containment Boom System (see Figure 10-24) is the primary containment equipment at an oil spill site. It is portable and maintained in a state of readiness for rapid deployment to a spill site. The Oil Containment Boom System consists of an ISO 20′ storage container, boom (USS-42HB, USS-42) air compressor, and necessary ancillary equipment to support the various types of containment boom operations. In many deployments the boom and components are removed from the container and stowed aboard the vessel individually leaving the container ashore.

The Boom Mooring System is designed to hold the SUPSALV Oil Containment Boom in position around a casualty vessel or elsewhere in water depths up to 200 feet, against a 3-knot current. The Boom Mooring System is comprised of a 500- or 1000-pound anchor, mooring buoy, crown buoy, chain, wire rope, and polypropylene line.

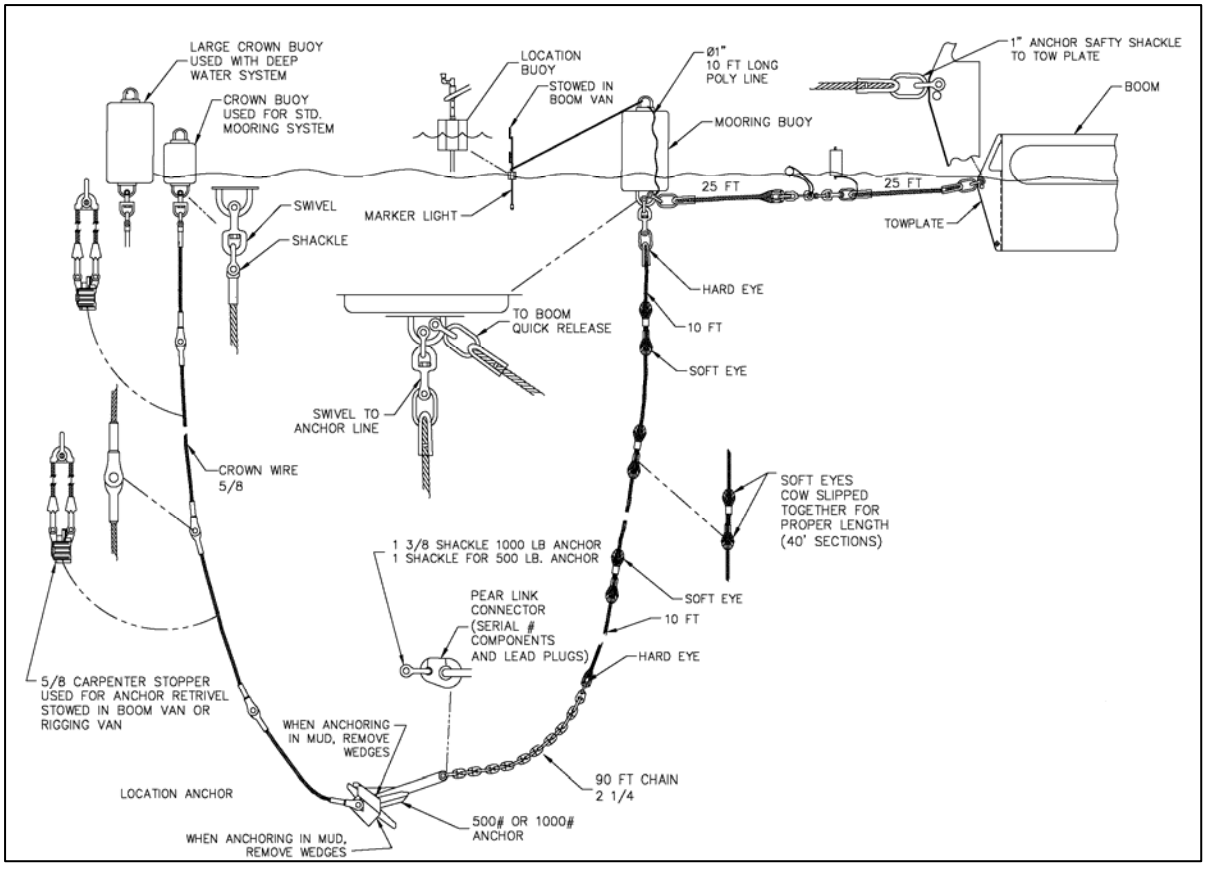

Figure 10-24. Oil Containment Boom Mooring System

10.2.3.1 USS-42/USS-42HB Boom Storage Pallet BM0876 with Model USS-42HB, 42″ x 55′ BM0737. The Oil Containment Boom is the primary containment equipment at an oil spill site. The 84″ x 60″ x 7″ USS-42/USS-42HB Boom Storage Pallet BM0876 (Figure 10-25) is a storage/shipping container for either the USS-42 or the USS-42HB boom and is designed to hold 12, 55′ sections (660′) of USS-42 or USS-42HB.

Figure 10-25. USS-42 HB Boom Storage Pallet

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	5 ft, 0 in
Height	6 ft, 1 in
Weight (with USS-42HB)	7,400 lb
Weight (with USS-42)	5,962 lb
Cube	213 cu ft

10.2.3.2 Equipment Basket, USS-42/USS-42HB Boom BM0881. The USS-42 and USS-42HB Boom Equipment Basket BM0881 (see Figure 10-26) is a metal, wire mesh container used to store and transport the ancillary equipment for the USS-42 and USS-42HB Boom. The equipment basket measures 84″ x 48″ x 47″ and contains a 14- or 19-cfm air compressor, a machinery containment pool, a 1″ diaphragm pump, and two 5/8″ carpenter stoppers and bridles.

The rigging basket also contains a boom patching kit, basic hand tools, two helix anchors, two bridle assemblies for anchoring boom, a turning bar for screwing anchors into the ground, an adapter plate, air and suction hoses, shackles, boom connector plates, light assemblies, various adaptors and connectors, a tow plate, sorbent pads, and other ancillary equipment.

Figure 10-26. USS-42/USS-42 HB Boom Equipment Basket

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	4 ft, 0 in
Height	3 ft, 11 in
Cube	110 cu ft
Weight	2,370 lb

10.2.3.3 Boom Mooring System with Anchor MS0009/MS0011. The Boom Mooring System (Figure 10-27) is comprised of a 500- or 1000-pound anchor, a mooring buoy, a crown buoy, chain, wire rope, and polypropylene line. The system is designed to hold the SUPSALV Oil Containment Boom in position around a casualty vessel or elsewhere in water depths up to 200 feet against a 3-knot current. Three Boom Mooring Systems are required to hold 1000 feet of boom in position.

Figure 10-27. Boom Mooring System with Anchor

PHYSICAL CHARACTERISTICS

	Shipping
Length	8 ft, 4 in
Width	4 ft, 0 in
Height	8 ft, 4 in
Cube	278 cu ft
Weight (W/500 lb anchor)	8,100 lb
Weight (W/1000 lb anchor)	8,600 lb

10.2.4 USS-26″ Boom System. The inflatable 26″ Oil Containment Boom is designed for use in containing spills around a stranded vessel or spills in shallow and protected waters. The system contains a nominal 3000′ of 26″ boom, including 100′ of 26″ shore boom on three pallets, an air compressor, anchors, mooring lines, and navigation lights all stored in a 20′ ISO container for shipment (Figure 10-28).

Figure 10-28. 26″ Boom Van

PHYSICAL CHARACTERISTICS

	Shipping
Length	20 ft, 0 in
Width	8 ft, 0 in
Height	8 ft, 0 in
Cube	310 cu ft
Weight	32,000 lb

10.2.4.1 USS-26 Boom Storage Pallet BM0879 with Model USS-26 26″ x 55′ BM0760/0761. The 26″ Oil Containment Boom is the primary containment equipment involved at an oil spill site in shallow and protected waters. The 84″ x 48″ x 7″ USS-26HB Boom Storage Pallet BM0765 is a storage/shipping platform for the USS-26 boom. It is designed to hold 18, 55′ sections (990′) of USS-26″ boom (see Figure 10-29).

Figure 10-29. USS-26 Boom Storage Pallet

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 4 in
Width	4 ft, 0 in
Height	6 ft, 9 in
Cube	198 cu ft
Weight	5,900 lb

10.2.4.2 Equipment Basket USS-26 Boom BM0885. The USS-26 Equipment Basket BM0885 (Figure 10-30) is a metal, wire mesh container used to store and transport ancillary equipment for the USS-26 Boom System. The equipment basket measures 84″ x 64″ x 48″ and contains a 14- or 19-cfm air compressor, a machinery containment pool, and a 1″ diaphragm pump.

The Equipment Basket also contains a boom patching kit, basic hand tools, two helix anchors, two bridle assemblies for anchoring boom, a turning bar for screwing anchors into the ground, an adapter plate, air and suction hoses, shackles, boom connector plates, light assemblies, various adaptors and connectors, a tow plate, sorbent pads, and other ancillary equipment.

Figure 10-30. Equipment Basket USS-26 Boom

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	5 ft, 4 in
Height	4 ft, 0 in
Cube	148 cu ft
Weight	2,200 lb

10.2.4.3 Anchor Equipment Basket BM0886. The USS-26 Anchor Equipment Basket (see Figure 10-31) contains 30 Fortress FX 23 and 6 Fortress FX37 anchors with 10′ chain leads and supporting anchor and crown lines.

Figure 10-31. Anchor Equipment Basket

PHYSICAL CHARACTERISTICS

	Shipping
Length	7 ft, 0 in
Width	5 ft, 4 in
Height	4 ft, 0 in
Cube	148 cu ft
Weight	2,200 lb

10.2.5 Logistics and Support Operations.

10.2.5.1 Workshop Van VA0508. The Workshop Van VA0508 (see Figure 10-32) is a complete, self-contained workshop. It is equipped with a 40-kW diesel-powered generator, a power cord, an external distribution power panel, a 175-cfm 100-psi diesel-powered air compressor, lighting, heating, ventilation, power tools, spare parts, cabinets for storage, and other items needed to maintain the response equipment. The van requires a 220 V single phase power for non-generator operations. For operations aboard the T-ATF, the air compressor and the generator may be left ashore if the ESSM 480-208 transformer is mobilized and the ship's air is available. Depending on the mission and space available, the van may be left ashore and selected components deployed to support the specific tasking.

Figure 10-32. Workshop Van

PHYSICAL CHARACTERISTICS

	Shipping
Length	20 ft, 0 in
Width	8 ft, 0 in
Height	8 ft, 0 in
Cube	1280 cu ft
Weight	21,400 lb

10.2.5.2 Rigging Van VA0010. The Rigging Van System P19600 is a self-contained rigger's storeroom and shop. It is used to provide rigging support in the field for operations involving containment boom, moorings, small boats, skimmers, and general lifting and equipment handling. The Rigging Van (Figure 10-33) contains personal protection equipment, personal flotation devices, general cleaning equipment, paint, rigging gear, patching material for boom, rain gear, and general support equipment for response operations. The van requires a 220-V single phase power supply for non-generator operations. Depending on the mission, either the entire van or selected components may be loaded aboard.

Figure 10-33. Rigging Van

PHYSICAL CHARACTERISTICS

	Shipping (VA0010A)	Shipping (VA0010B)
Length	20 ft, 0 in	20 ft, 0 in
Width	8 ft, 0 in	8 ft, 0 in
Height	8 ft, 0 in	8 ft, 0 in
Cube	1280 cu ft	1280 cu ft
Weight	16,915 lb	16,800 lb

10.2.5.3 Equipment Decon Van P19200. The Equipment Decon Van (see Figure 10-34) contains the necessary components to clean response equipment at an oil spill site. The Equipment Decon Van contains a cleaning pool, a steam cleaner or saltwater pressure washer, a storage/shipping container, and the ancillary equipment to support the system while operating in the field. Oil spill response equipment requires extensive cleaning prior to demobilization and return to the warehouses. Without proper cleaning equipment, this task is difficult, time consuming, and costly. The Equipment Decon Van provides the full array of cleanup tools and materials necessary for efficient cleaning and demobilization of equipment. Either the entire van or selected components can be mobilized for T-ATF shipboard operations.

Figure 10-34. Equipment Decon Van

PHYSICAL CHARACTERISTICS

	Shipping (VA2219A)	Shipping (VA2119B)
Length	20 ft, 0 in	20 ft, 0 in
Width	8 ft, 0 in	8 ft, 0 in
Height	8 ft, 0 in	8 ft, 0 in
Cube	1280 cu ft	1280 cu ft
Weight	11,176 lb	13,175 lb

10.2.5.4 480-V/208-V Transformer XF0010. The 480-V/208-V Transformer (Figure 10-35) is designed to be wired into the T-ATF 440-V power by the ship's electrician to provide power to the 208-V ESSM support vans deployed. With this transformer deployed, the ESSM generator normally associated with the Shop Van can be left ashore, freeing up deck space aboard the T-ATF.

Figure 10-35. 480-V/208-V Transformer

PHYSICAL CHARACTERISTICS

	Shipping/Operating
Length	3 ft, 6 in
Width	1 ft, 10 in
Height	2 ft, 1 in
Cube	10 cu ft
Weight	330 lb

10.2.5.5 Shipboard Support System P19210 and VA2110. The Shipboard Support System (see Figure 10-36) is an 8′ x 10′ ISO container outfitted with the PPE and cleaning equipment necessary to support shipboard operations. This Shipboard Support System is a scaled down Equipment Decontamination Van augmented with additional PPE for vessel operational conditions. In addition to the PPE, the system contains bundles and rolls of sorbent materials, detergents, cleaning pools, scrub brushes, and a small pump, all designed to maintain habitable working and living conditions in an oil contaminated environment.

Figure 10-36. Shipboard Support System

PHYSICAL CHARACTERISTICS

	Shipping
Length	10 ft, 0 in
Width	8 ft, 0 in
Height	8 ft, 0 in
Cube	640 cu ft
Weight	6,000 lb (estimate)

10.3 OPERATIONS SECTION, NOTIONAL T-ATF VESSEL LOADOUTS

10.3.1 Pollution System Loadouts on the T-ATF. The notional loadout plans, for the Class V Skimmer System, High Speed Current Buster Skimming System, and Boom Systems discussed here are representative of numerous possibilities. While these plans have been tried and found to work, the principals here may be used as a solid baseline for variations. Deployment concepts and other scenarios must be discussed and reviewed by the SUPSALV Representative, the Ship's Master, Chief Mate, and ESSM Coordinator prior to mobilizing the T-ATF as a vessel in support of oil containment and recovery operations. Prior to the loadout of the selected skimmer or boom system and all associated equipment, an operations and safety meeting will be held with all parties involved in the oil spill operation. In addition the vessel will provide a T-ATF vessel specific safety overview to the deployed SUPSALV and ESSM support crew. In support of most oil recovery missions, the aft deck of the T-ATF must be cleared of the tow bow and aft tow pin box assembly prior to being employed in skimming or containment operations.

10.3.1.1 Loadout of Class V Skimmer System. All necessary equipment for the Class V Skimmer System will be delivered to the designated staging area and prepositioned to expedite the loadout. If using the Modular Class V Skimmer as well as the BHBs, the skimmer and the boats will be assembled prior to loading aboard the T-ATF. All equipment will be rigged for loading aboard the T-ATF by ESSM personnel, and the majority of equipment will be loaded aboard the T-ATF via a pier side crane. The selected pollution response assets are loaded and secured on the deck of the T-ARS in accordance with a pre-stow plan that has been coordinated with the SUPSALV representative, the ESSM Project Coordinator, the Vessel Master, and the Chief Mate. Final approval of the pre-stow plan rests with the Vessel Master or his designated representative. The equipment, the Class V Skimmer, two Boom Handling Boats, Boom Pallet(s), Oil Storage Bladder, 19-cfm Air Compressor, Dracone Marker Buoy, a 15′ Inflatable Boat with Motor, a Shop Van, a Rigging Van, and a Vessel Support Van will be loaded and secured aboard the T-ATF in accordance with the approved mission specific pre-stow plan. Shown in Figure 10-37 is a notional loadout plan for a Class V Skimmer System aboard the T-ATF. Critical considerations in developing the plan are the positioning of the heavier lifts, the Class V Skimmer System, and the Boom Handling Boats under the ship's crane and the final positioning of the support vans which are beyond the reach of the ship's crane at sea. This plan must be adjusted to accommodate the actual equipment selected for a specific mobilization and deployment. The sequence of loading is dependent on numerous factors; however as a baseline it is recommended that the Class V Skimmer, the Boom Handling Boats, and the deploying containers be loaded first followed by the smaller ancillary equipment.

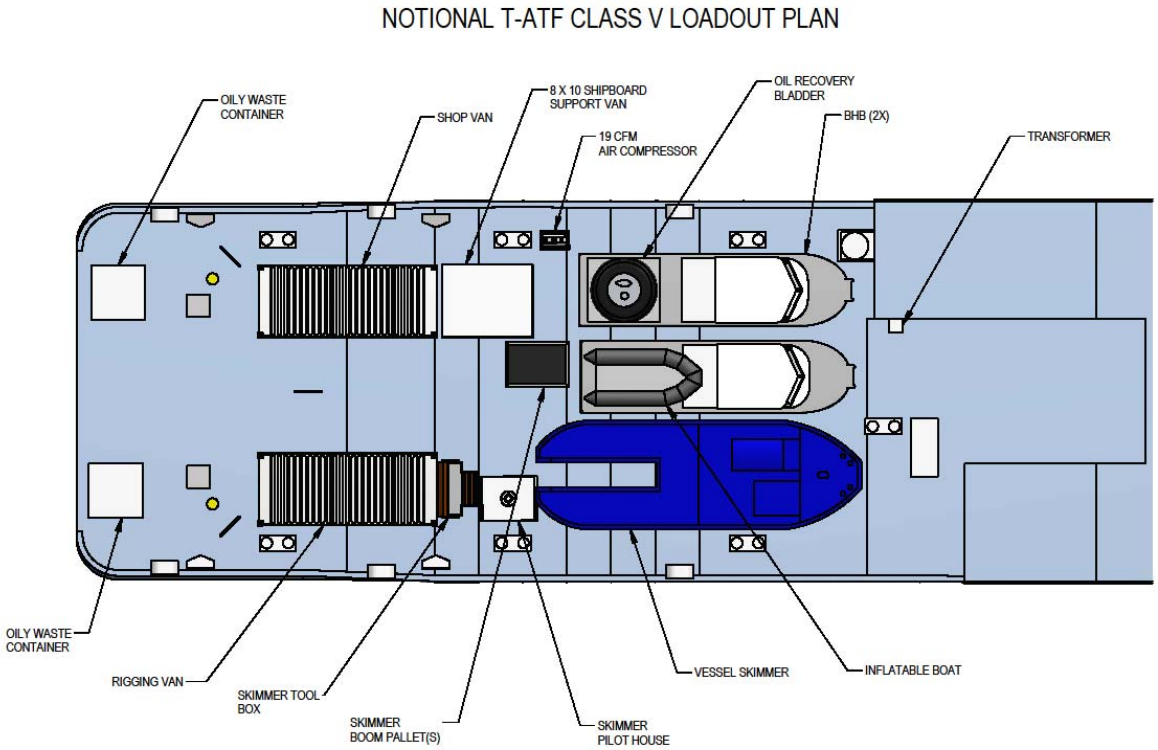

Figure 10-37. Notional T-ATF Class V Loadout Plan

10.3.1.2 Loadout of Current Buster Skimmer System. All necessary equipment for the Current Buster Fast Water Skimmer System will be delivered to the designated staging area and prepositioned to expedite the loadout. Equipment will be rigged for loading aboard the T-ATF by ESSM contractor personnel, and the majority of equipment will be loaded aboard the T-ATF via a pier side crane. The equipment will be loaded and secured on the deck of the T-ARS in accordance with a pre-stow plan that has been coordinated with the SUPSALV representative, the ESSM Project Coordinator, the Vessel Master, and the Chief Mate. Final approval of the pre-stow plan rests with the Vessel Master or his designated representative. The equipment, consisting of the current buster 20′ ISO Storage Van, the current buster on the reel and the 8′x 8′ Current Buster Support Van, the Oil Storage Bladder, a 15′ Inflatable Boat with Motor, a Shop Van, a Rigging Van, and components of a cleaning van will be loaded and secured aboard the T-ATF in accordance with the approved mission specific pre-stow plan. Shown in Figure 10-38 is a notional loadout plan for the Current Buster System, the Support Van and ancillary equipment. Critical considerations in developing the plan are the positioning of the heavier lifts, the vans, the reel assembly and other equipment that is out of reach of the shipboard crane when at sea. As with the Class V notional plan in Figure 10-37, the notional plan in Figure 10-38 below needs to be adjusted to accommodate the actual equipment selected for a specific mobilization and deployment. The sequence of loading is dependent on numerous factors, however as a baseline it is recommended that the support van and the skimmer van be positioned and secured early in the loading process by the shore side crane, followed by the smaller ancillary equipment.

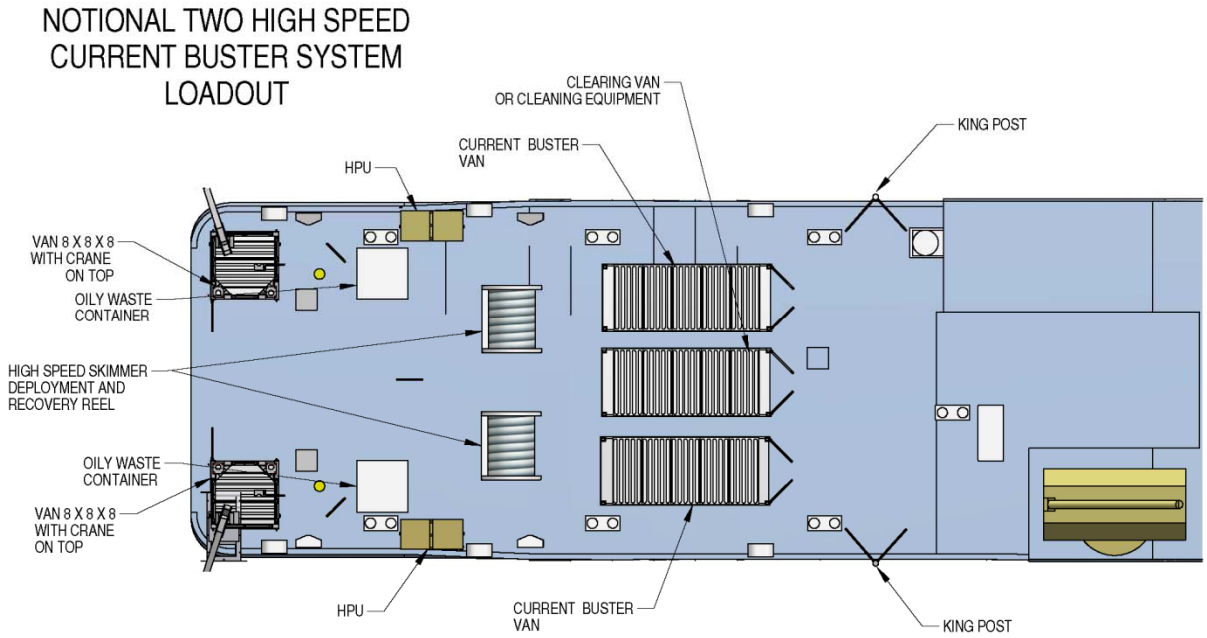

Figure 10-38. Notional Two High Speed Current Buster System Loadout Plan

10.3.1.3 Loadout of Containment Boom Systems and Moorings on the T-ATF. All necessary equipment for the USS 42″ and USS 26″ Boom Systems will be delivered to the designated staging area and prepositioned to expedite the loadout. Equipment will be rigged for loading aboard the T-ATF by ESSM personnel and the majority of equipment will be loaded aboard the T-ATF by a pier side crane. The equipment will be loaded and secured on deck of the T-ARS, in accordance with a pre-stow plan that has been coordinated with the SUPSALV representative, the ESSM Project Coordinator, the Vessel Master, and Chief Mate. Final approval of the pre-stow plan rests with the Vessel Master or his designated representative. The equipment, consisting of the boom either in its 20′ ISO Storage Van, or on individual pallets, the air compressor and support basket as well as the Mooring Systems, 15′ Inflatable Boat with Motor, a Shop Van, a Rigging Van and Shipboard Support Van will be loaded and secured aboard the T-ATF in accordance with the approved mission specific pre-stow plan. Shown in Figure 10-39 is a notional loadout plan for 1000′ of 42″ boom and the associated two Boom Mooring Systems. Critical considerations in developing the plan are the positioning of the pallets of boom and other equipment that needs to be in the reach of the shipboard crane when at sea. As with the Class V notional plan in Figure 10-37 and the Current Buster Notional Plan in Figure 10-38, the Boom Mooring System (see Figure 10-39) is adjusted to accommodate the actual equipment selected for a specific mobilization and deployment. The sequence of loading is dependent on numerous considerations; however, as a baseline, it is recommended that the pallets of boom and the anchor systems be positioned and secured early in the loading process followed by the smaller ancillary equipment.

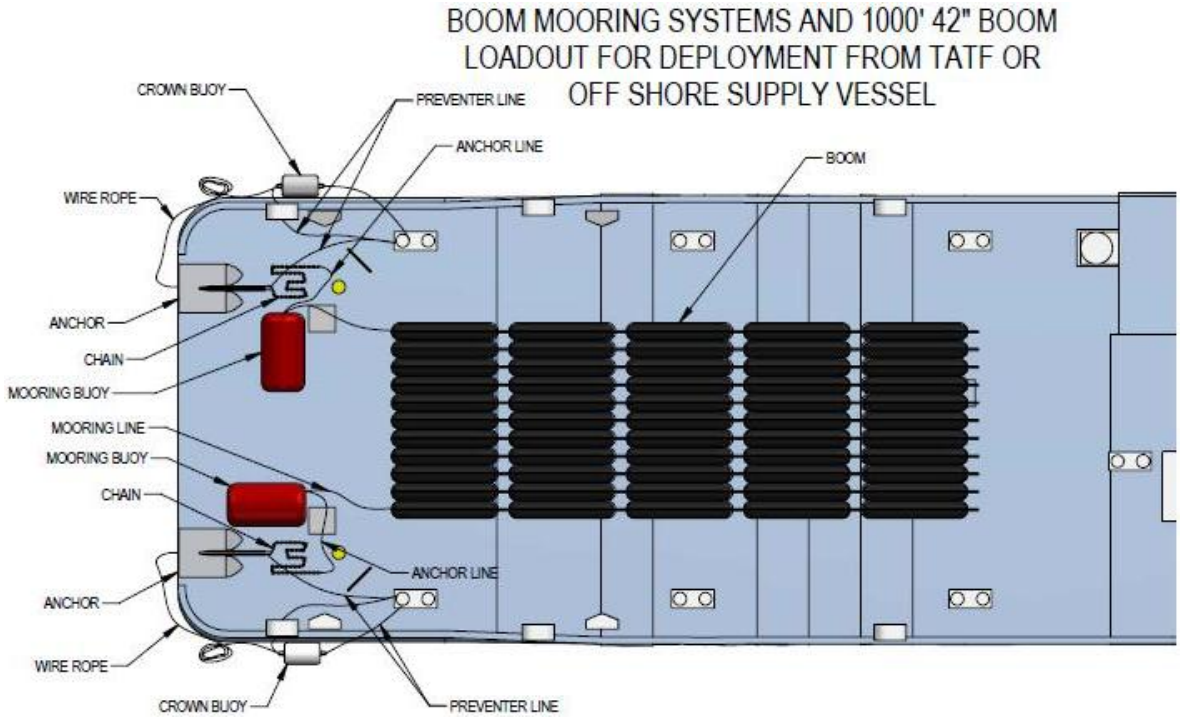

Figure 10-39. Boom Mooring Systems and 1000′ 42″ Boom Loadout

10.3.1.4 Deployment of Class V Skimmer, Towboats, Boom Tending Boats, Small Boats, and Skimmer Boom from the T-ATF. The Class V Skimmer will be offloaded over the side of the T-ATF using the ship's crane. Of special note is the fact that the Skimmer approaches the weight limit of the ship's gear and discussions with the T-ATF Master and the Chief Mate will determine where and when it is safe to deploy the Class V Skimmer. Following offload of the skimmer and if a hip tow of the skimmer is required, a sea painter and spring lines of appropriate length and size, as determined by the Chief Mate, will be rigged for the tow. If a stern tow is required, the Chief Mate will determine appropriate length and size of the tow hawser/line that will connect to the skimmer tow painter.

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OPERATING PROCEDURE

OP 10-1 LAUNCH AND TOW OF THE CLASS V SKIMMER

NOTE

The weight of the Class V Skimmer approaches the capacity of the crane, and as a result due diligence must be exercised with respect to weather and sea conditions for the launch. The T-ATF Vessel Master and the Chief Mate will direct the lift and launch of the skimmer.

NOTE

Life vests and hardhats are required for skimmer and boat launching operations.

Prepare skimmer for launch.

1. Prepare and rig skimmer lifting slings. (ESSM)
2. Prepare skimmer fenders and rig over the side. (ESSM)
3. Check bilges, PM skimmer, and test run skimmer engine. (ESSM)
4. Rig mooring lines (can also be used as tag lines). (ESSM)
5. Check and prepare the 6″ skimmer towing pendant on the skimmer bow. (T-ATF/ESSM)
6. Attach towing pendant recovery line to the skimmer tow pendant. (ESSM)
7. The small inflatable boat can be deployed at any time to assist in all associated tasks of the skimmer deployment or other aspects of the oil spill recovery mission. (ESSM)

Prepare ship's gear for launching skimmer.

1. Perform PM on ship's crane. (T-ATF)
2. Prepare rigging, sea painter, tow line, and additional fenders for hip or stern tow of skimmer. (T-ATF)
3. Rig additional tag lines on skimmer if necessary. (T-ATF/ESSM)
4. Validate communications between the ship's bridge, deck, crane crew, and ESSM. (T-ATF/ESSM)
5. Conduct pre-launch safety/operational briefing. (T-ATF/ESSM)

Launch skimmer (see Figure 10-40).

1. Attach and mouse crane hook to skimmer slings. (ESSM)
2. Lightly tension slings with crane, and adjust slings as necessary. (T-ATF/ESSM)
3. Skimmer crew exit skimmer. (ESSM)
4. Break skimmer deck lashings. (T-ATF/ESSM)
5. Attach the sea painter and man tag lines. (T-ATF/ESSM augmentation if required)
6. Lift skimmer and move out board over starboard side of T-ATF. (T-ATF)
7. Bow (non- skimmer belt end) of skimmer must be in the direction of tow.

8. Rig sea painter, and secure skimmer alongside T-ATF. (T-ATF/ESSM)
9. Board skimmer, and conduct operational checks. (ESSM)

Figure 10-40. Offloading Class V Skimmer Over the Side of the T-ATF

Prepare skimmer for hip tow (Figure 10-41).

1. Prepare and secure fenders, bow, stern, and spring lines for hip tow. (T-ATF/ESSM)
2. Secure skimmer hatches, line, and gear for hip towing. (ESSM)
3. Skimmer crew exits skimmer for hip tow. (ESSM)
4. Tow commences to designated operational site. (T-ATF)

Figure 10-41. Class V Skimmer in Hip Tow on T-ATF

Prepare skimmer for stern tow (see Figure 10-42).

1. Secure skimmer alongside. (T-ATF/ESSM)
2. Rig the tow hawser/line, and prepare to connect to the skimmer. (T-ATF)

NOTE

There are two options for stringing the skimmer into the stern tow configuration. Option 1 involves the skimmer crew motoring the skimmer astern of the T-ATF with the tow hawser/line connected. Once the skimmer is in position astern of the T-ATF and secured for tow, the skimmer crew is recovered by small boat and returned to the T-ATF. Option 2 is for the T-ATF with some forward way to release the unmanned skimmer and use forward way to let the prepared skimmer fall astern into the tow configuration.

Option 1 Motoring the Skimmer into the Stern Tow Position

a. Skimmer crew boards skimmer and prepares to get underway. (ESSM)
b. Secure the skimmer tow pendant retrieving line to the skimmer with enough slack to allow full extension of the skimmer towing pendant. (ESSM)
c. Attach the tow hawser to skimmer tow pendant. (T-ATF/ESSM)
d. On direction from the T-ATF crew, cast off the skimmer and motor astern of the T-ATF taking care not to foul the tow hawser. (T-ATF/ESSM)
e. Skimmer crew backs the skimmer aft of the T-ATF, stopping when directed by the T-ATF crew. (T-ATF/ESSM)
f. Skimmer crew secures the skimmer mechanical gear and hatches for tow and departs via small boat and returns to the T-ATF. (T-ATF/ESSM)
g. T-ATF crew adjusts length of tow line to suit operational conditions. (T-ATF)

Figure 10-42. Class V Skimmer in Stern Tow

Option 2 Releasing the Skimmer with the T-ATF Underway into the Stern Tow

a. Connect the T-ATF tow hawser/line to the skimmer tow pendant. (T-ATF/ESSM)
b. Recover skimmer personnel back aboard the T-ATF. (T-ATF/ESSM)
c. Release the skimmer securing lines, and allow the skimmer to drift aft ensuring that the tow hawser/line does not foul. (T-ATF)
d. T-ATF crew adjusts the tow hawser/line to suit operational conditions. (T-ATF)

OPERATING PROCEDURE

OP 10-2 OFFLOADING BOOM HANDLING BOATS

Using the ship's gear deploy the Boom Handling Boats (BHB) using the quick release hook if available. If a quick release hook is not available or used, crew members may board and ride the boat when it reaches the main deck level to assist in releasing the hook. When riding the boat, personnel should remain on the outboard side of both the boat and the slings. Once the boat is water borne, release the hook, secure the boat alongside, and if not already aboard, the boat crew (2 person crew) can board the BHB, perform checks, and ready the boat for skimmer operations.

NOTE

Life vests and hardhats are required for skimmer and boat launching operations.

Prepare BHB for launch.

1. Prepare and rig BHB lifting slings. (ESSM)
2. Prepare BHB fenders and rig over the side. (ESSM)
3. Check bilges, and conduct pre-operational BHB checks. (ESSM)
4. Rig mooring lines (can also be used as tag lines). (ESSM)

Prepare ship's gear for launching skimmer and BHB.

1. Perform PM on ship's crane. (T-ATF)
2. Prepare rigging and additional fenders alongside if required. (T-ATF)
3. Prepare and rig a sea painter on the BHB. (T-ATF)
4. Rig additional tag lines on BHB if necessary. (T-ATF)
5. Validate communications, between ship's bridge, deck, crane crews, and BHB. (T-ATF/ESSM)
6. Conduct pre-launch safety/operational briefing. (T-ATF/ESSM)

Launch BHB (see Figure 10-43).

1. Attach and mouse crane hook to BHB slings. (T-ATF/ESSM)
2. Lightly tension slings with crane, adjust slings as necessary. (T-ATF/ ESSM)
3. BHB crew exits BHB. (ESSM)
4. Break BHB deck lashings. (T-ATF/ ESSM)
5. Man tag lines. (T-ATF/ ESSM augmentation if required)
6. Lift BHB and move outboard over starboard side of T-ATF. (T-ATF)
7. Rotate the bow of the BHB in the direction of the prevailing seas. (T-ATF)
8. Lower BHB into the water, secure the sea painter, and secure alongside T-ATF. (T-ATF)
9. BHB crew boards BHB and performs operational checks and prepares for underway operations. (ESSM)

Figure 10-43. Offloading Boom Handling Boat

OPERATING PROCEDURE

OP 10-3 PREPARE BHB FOR UNDERWAY OPERATIONS

1. Verify crew list. (ESSM)
2. Conduct in-water operation checks. (ESSM)
3. Verify communications between T-ATF, deck crew, Class V Skimmer, and support boats. (ESSM/T-ATF)
4. Release securing lines and lastly the sea painter, and cast off from T-ATF. (ESSM/T-ATF)
5. Maintain communication and coordination with T-ATF and Class V Skimmer. (ESSM/T-ATF)

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OPERATING PROCEDURE

OP 10-4 DEPLOY TWO 330-FOOT LEGS OF SKIMMER BOOM

WARNING

Boom deployment is a hazardous operation. Towboat advancement must be carefully controlled to launch boom slowly into the water without injury to personnel or damage to equipment. Carefully consider prevailing winds, seas, and current for advantageous positioning of all assets. Ensure that radio communications have been established between the T-ATF bridge, the fan tail, the ESSM OSC, the 15′ Inflatable Boat, both BHBs, and the Class V Skimmer.

NOTE

Boom can be deployed (see Figure 10-44) for several different uses: skimming in a V-configuration, containment, and deflection. The deployment for V-skimming operations will be discussed in this scenario.

Figure 10-44. Deploying Skimmer Boom

1. Position the pallet of boom for deployment ensuring an unobstructed path over the stern roller. Boom can be deployed in either a single leg configuration, or if desired, both legs of boom can be deployed simultaneously over the stern roller (Figure 10-45). Ensure that the span lines are on the inboard side of each boom leg when they are attached to the skimmer. (T-ATF/ ESSM)
2. Remove the boom from the top of the pallet(s), and lay it out in the direction of the T-ATF stern roller, ensuring that the inflation valves are facing up, and that all bridles for the span lines, tow plates, towlines, and skimmer tow plate pickup lines are securely attached. (ESSM)

CAUTION

The maximum operating pressure for all SUPSALV inflatable boom is 1.5 psi. When the boom is being inflated, climate conditions must be taken in consideration. For example, in very hot climates the pressure may need to be reduced during inflation to as low as 0.5 psi. In very cold climate conditions, it may have to be inflated to the maximum of 1.5 psi.

3. Inflate as many boom chambers as the available deck space allows for a smooth transition over the T-ATF stern roller. (ESSM)

WARNING

Good communication must be established between the towboat, the T-ATF bridge, the fan tail, and the ESSM OSC before the boom deployment begins. The T-ATF should be positioned to take advantage of the prevailing wind, seas, and current for the deployment operation. The ESSM boom deployment supervisor will be positioned to observe the entire boom deployment operation. The towboat must make way and stop at controlled intervals as directed by the ESSM boom deployment supervisor. This allows for inflation of the additional chambers and correction of any problems that might arise while deploying the boom. Towboat advancement must be carefully controlled to launch boom into the water slowly without injury to personnel or damage to boom.

4. Position the towboat directly in line with the T-ATF stern roller to obtain a straight pull away from the stern of the T-ATF. Secure the towline to the towboat bit. The position of the T-ATF and the towboat may have to be adjusted for current and wind so that the boom pulls straight. T-ATF coordinates with the ESSM boom deployment supervisor and adjusts position to facilitate boom deployment. (T-ATF/ESSM)

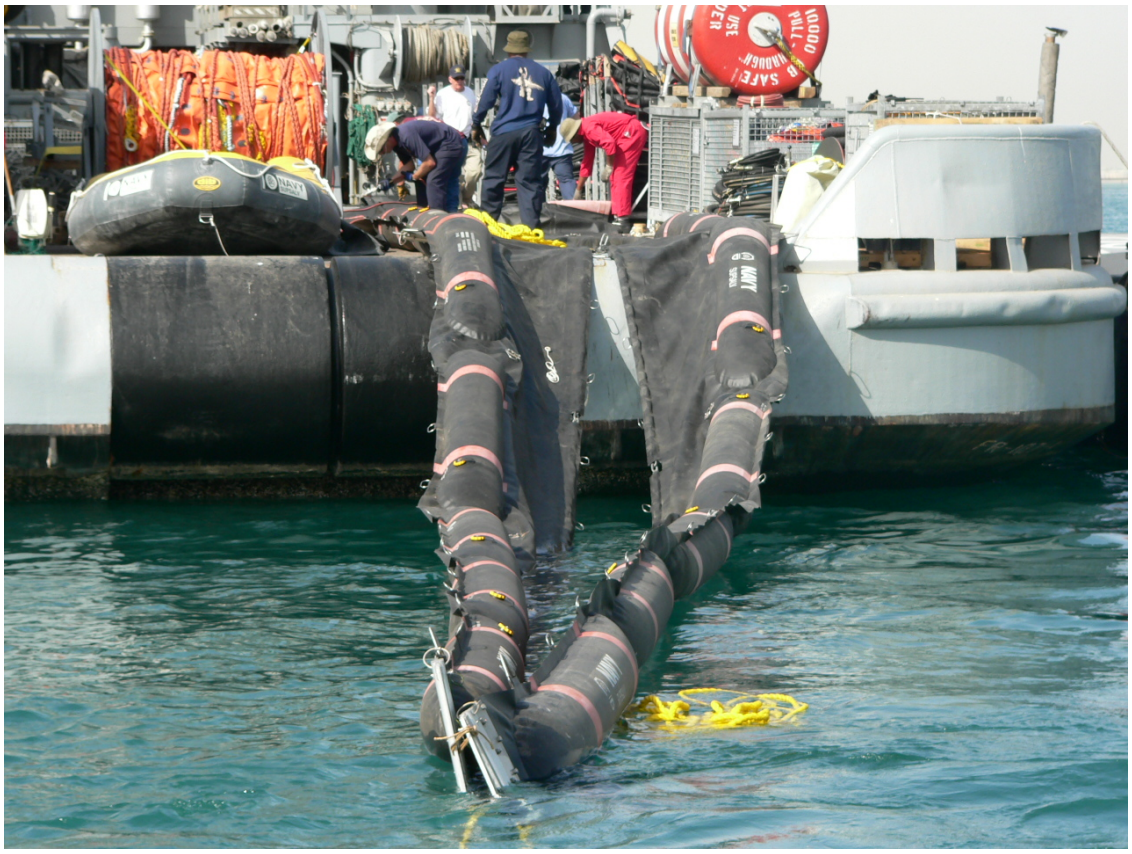

Figure 10-45. Deploying Two Legs of Skimmer Boom from the Stern of the T-ATF

WARNING

When the end of the skimmer leg of the boom is ready to go over the stern and into the water, special care must be taken to lower the end with the skimmer tow plate attached into the water slowly and not allow it to drop freely. The end plate could drop onto one of the boom chambers, and the corner could puncture the chamber.

NOTE

As boom is being deployed, special care must be taken when the span line bridles and span lines approach the stern to ensure that they do not tangle or get caught on the ship's deck hardware.

5. Continue deployment of the boom in a coordinated effort between the T-ATF, the ESSM deck crew, and the BHB until the tow plate is deployed. The BHB pulls the boom free of the T-ATF. (T-ATF/ESSM)

6. Skimmer coxswain coordinates with the tow boat for installation of the boom (see Figure 10-46) into the skimmer female receptacles. (ESSM)

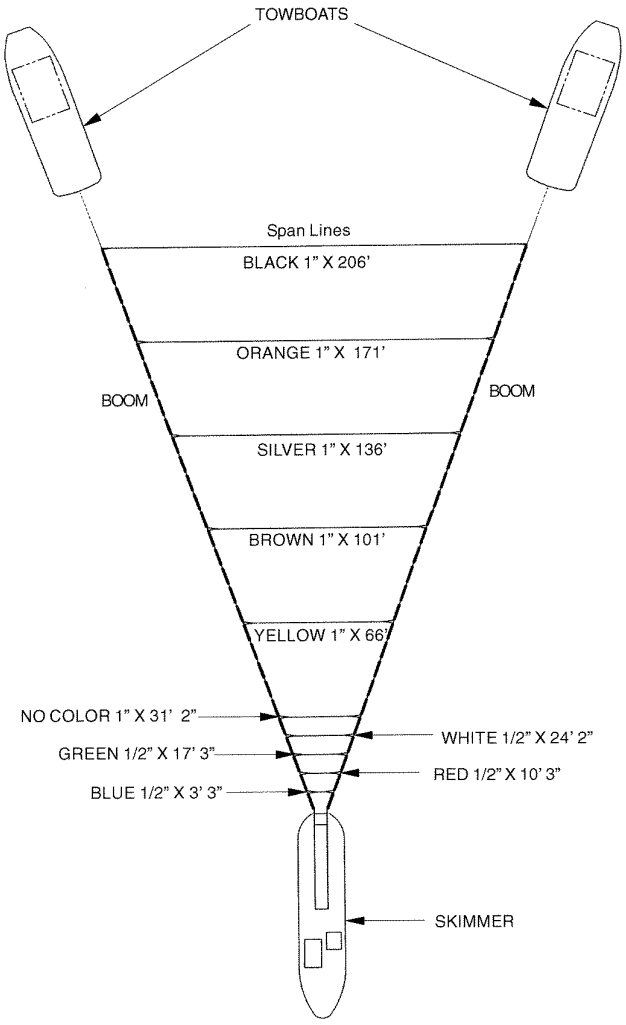

Figure 10-46. Class V Skimmer Operating with Two Tow Boats

As an alternative, the Class V Skimmer can be operated with the T-ATF serving as one of the tow boats as shown in Figure 10-47. It is important to recognize that tow speeds through the water while skimming are less than one knot, and the skimmer operator controls both the configuration and speed of the entire skimming assembly.

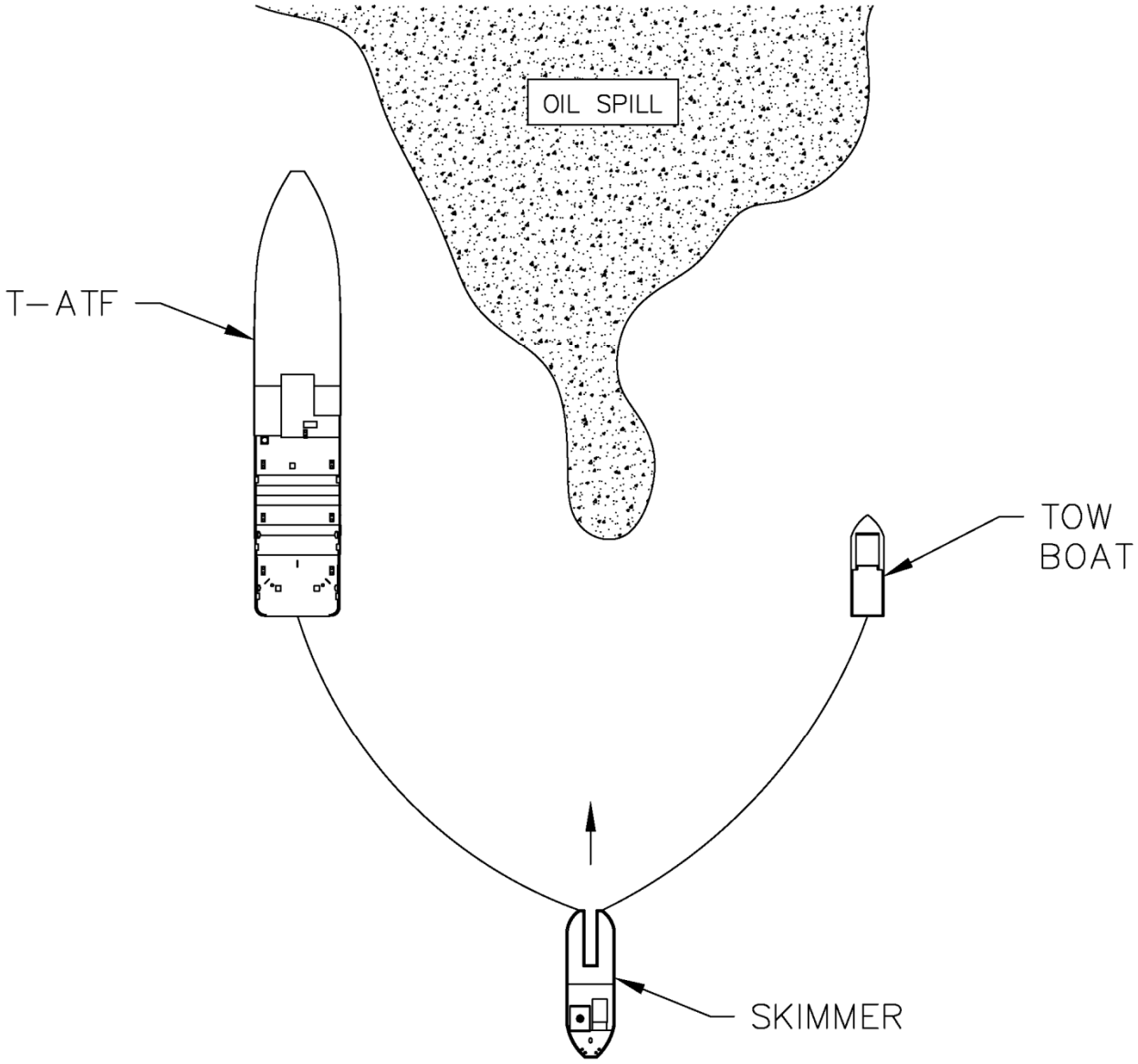

Figure 10-47. Class V Skimmer with T-ATF as One of the Tow Boats

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OPERATING PROCEDURE

OP 10-5 DEPLOYING THE OIL RECOVERY BLADDER

Using the ship's crane, deploy the Oil Recovery Bladder (Figure 10-48). ESSM personnel will prepare the bladder for deployment and attach the quick release hook, if available, to the cargo net. T-ATF personnel will operate the crane and lift the bladder over the side. If a quick release hook is not available, the bladder may be placed at the gunwale and rolled out of the cargo net with the crane by picking up on the inboard side of the net and forcing it overboard. Ensure that the bladder tow line is secured to the vessel before launching.

Figure 10-48. Deploying the Oil Recovery Bladder

Prepare the Oil Recovery Boom for deployment.

1. Prepare the Oil Recovery Bladder for deployment. (ESSM)
2. Attach the At Sea Bladder Pumping System to the bladder if designated for deployment. (ESSM)
3. Prepare the ship's crane for launch of the Oil Recovery Bladder. (T-ATF)
4. Attach the ship's hook to the Oil Recover Bladder quick release hook. (T-ATF/ESSM)
5. Launch the Oil Recovery Bladder in a coordinated effort between ship and ESSM crews. (T-ATF/ESSM)
6. Tow the Oil Recovery Bladder to the Class V Skimmer System with a BHB. Connect the Oil Recovery Bladder to the skimmer. (ESSM)
7. If the Oil Recovery Bladder is to be used with the NOFI Current Buster System, it will be towed by the T-ATF, normally on the aft stern quarter and on the same side of the T-ATF as the Current Buster System being supported.

10.3.1.4 Recover All Equipment.

OPERATING PROCEDURE

OP 10-6 RECOVER CLASS V SYSTEM ABOARD THE T-ATF

Gross decontamination of all equipment should be accomplished prior to retrieving the assets back aboard the T-ATF. In most scenarios, the Responsible Party (RP) will have established gross decontamination stations throughout the operational area. The boom and bladder can be either towed behind the skimmer or released from the skimmer and towed by the Boom Handling Boats (BHBs) to the gross decontamination site. Once gross decontamination is accomplished, assets can be recovered back aboard the T-ATF.

CAUTION

At sea recovery operations are inherently dangerous. Exercise extreme caution when accomplishing heavy lifts in a seaway as the dynamic forces can result in unplanned cargo movements. Recover the Class V System and Oil Recovery Bladder onboard the T-ARS, using the ship's gear after insuring that the bilges and sump on the Class V System are empty.

CAUTION

The sequence for recovery needs to take into consideration that the Class V Skimmer needs to be stowed directly under the hook when it is back aboard.

CAUTION

The Oil Recovery Bladder can be recovered back aboard only if it is empty. The Oil Recovery Bladder, with recovered product or water inside, is best left in a stern tow until it can be offloaded. A bladder with product inside cannot be lifted back aboard the ship.

1. Develop a plan and sequence for Class V System component recovery. (T-ATF/ESSM)
2. Prepare the crane for recovering the skimmer, BHB, and empty Oil Storage Bladder recovery. (T-ATF)
3. Prepare the capstan and snatch block for boom recovery. (T-ATF)
4. Position the pallets for storing recovered boom, the cradles for the BHB, and the net for the Oil Storage Bladder. (T-ATF/ESSM)

5. Recover the boom over the stern roller of the T-ATF using the capstan, snatch block, and fold the boom onto pallets. (T-ATF/ESSM)
6. Recover the empty Oil Storage Bladder using the T-ATF crane, and temporarily package in the storage net. Alternately, the Oil Storage Bladder can be retrieved over the stern roller using the capstan. (T-ATF/ESSM)
7. Prepare the BHBs and skimmer for recovery by attaching slings and tag lines. (ESSM)
8. Recover the BHBs and Class V Skimmer using the T-ATF crane. (T-ATF/ESSM)
9. Secure all system components for transit in accordance with T-ATF requirements. (T-ATF/ESSM)

10.3.2 Scenarios for High Speed Current Buster Skimmer System Operations. The scenarios/staging areas for the loadout, operation, and recovery of the High Speed Current Buster Vessel of Opportunity Skimming System, discussed here are scenarios that have been tried and found to work. Other mobilization and deployment possibilities must be discussed and reviewed by the Ship's Master, the Chief Mate, the SUPSALV Representative, and ESSM prior to using the T-ATF as a vessel of opportunity for the High Speed Current Buster oil recovery operations (see Figure 10-49). The SUPSALV Representative will present a pre-stow plan for discussion, and as a result of the discussions a final stow plan will be agreed upon. Prior to the loadout of the High Speed Current Buster and all associated equipment, an operations and safety meeting will be held between all parties involved in the oil spill recovery operation. In addition the T-ATF will provide a vessel specific safety briefing.

Figure 10-49. T-ATF with High Speed Current Buster Deployed

10.3.2.1 Loadout High Speed Current Buster Skimmer System. All necessary equipment for the High Speed Current Buster Skimmer System will be delivered to the designated staging area in a 20′ ISO and an 8′ ISO container along with any other mission specific support equipment such as the Shop Van, Rigging Van, Cleaning Van, Oil Recovery Bladder, Tiedown Kit, and support boats including a Boom Handling Boat. Equipment will be offloaded, removed from the van where required, and positioned on the pier to facilitate the T-ATF on-load as developed in the pre-stow plan. As with other pollution response operations, the tow bow and tow pin unit aboard the T-ATF should be removed for High Speed Current Buster skimming operations.

All mobilized equipment will be rigged for loading aboard the T-ATF by the ESSM personnel. The majority of equipment will be loaded aboard the T-ATF via a pierside crane. Equipment will be stowed and secured for sea on the aft deck of the T-ATF in accordance with the approved pre-stow plan. One or two High Speed Current Buster Systems may be deployed on the T-ATF. The equipment for each deployed system includes the following: the High Speed Current Buster Skimmer, boom and reel, two 2-cycle Gas-powered Portable Blowers, two 5′ x 5′ x 12″ Machinery Containment Pools, a 10′ x 6′ x 12″ Machinery Containment Pool, a three-section Outrigger Assembly, a 2″ diesel powered Peristaltic Pump, a 25 gpm @ 3000 psi HPU, a Model LPP 6HA/C75 Power Pack, a Minimax 12 Skimmer, a LWS-50 Weir Skimmer, 4000-Gph 2″ Skim-Pak, the tool box for the High Speed Current Buster Skimmer System, a hydraulic pressure washer, and two ancillary storage baskets to stow the necessary ancillary equipment to operate and maintain the High Speed Current Buster System. While the above equipment is packaged in 20′ and 8′ ISO vans, the most likely scenario is that some of the equipment is removed from the container and deck stowed in its component form. Shop, rigging, and cleaning vans, and any boats that are required, will also be loaded. Figure 10-50 depicts a Notional Layout for a dual High Speed Current Buster System. Note that the 8′ x 8′ container, which also serves as the crane base, is placed far aft so as to have crane access to the skimmer pocket.

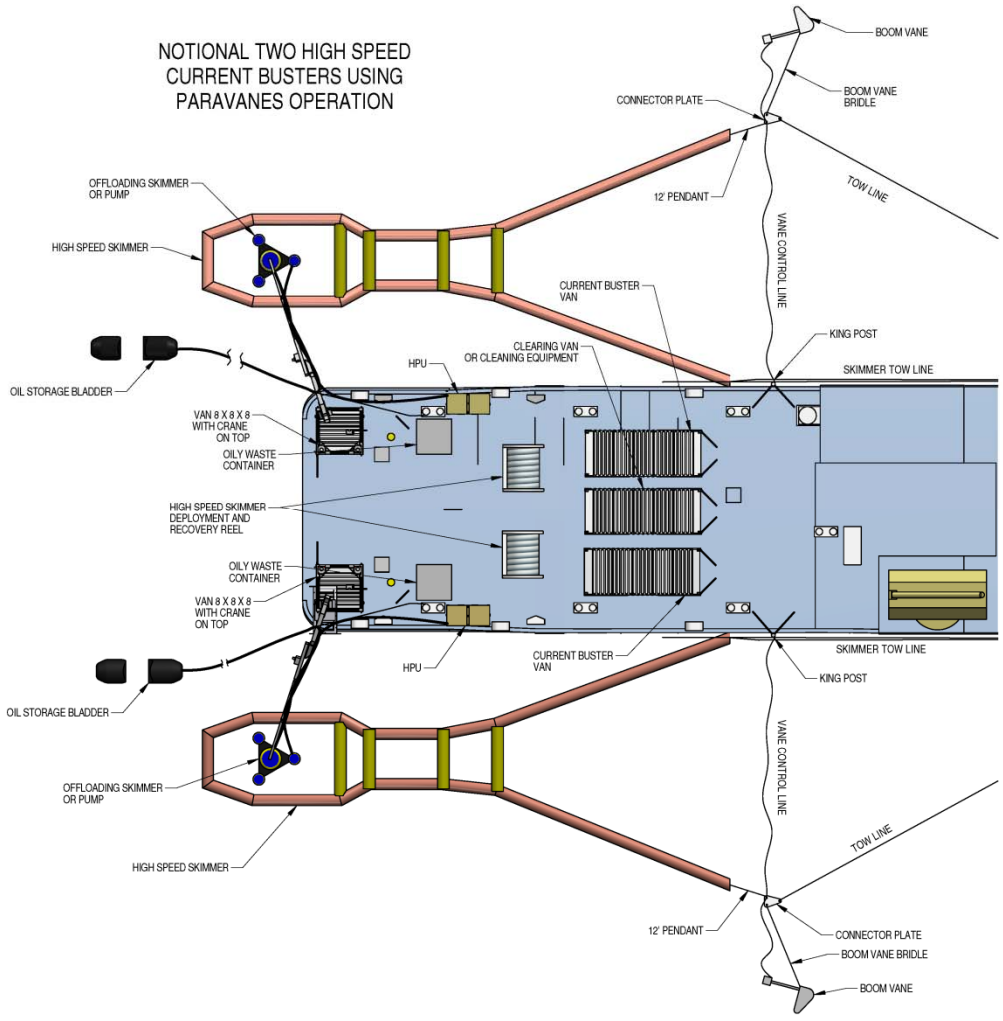

Figure 10-50. Notional Two High Speed Current Buster System Operations on the T-ATF

10.3.2.2 Deployment of High Speed Current Buster Skimmer System.

NOTE

The NOFI Skimmer System can be deployed in several different V-configurations: with a vessel of opportunity (T-ATF) and the outrigger, with a vessel of opportunity and a paravane, in a V-configuration using two BHBs, using one BHB, the T-ATF, and using alternate tow boats that may be available.

Deployment on the T-ATF using the Outrigger Assembly:

Assemble the king post and deploy the outrigger assembly as directed by the ESSM designated person in charge. The king post/outrigger is normally placed as far forward on the T-ATF aft deck bulwark rail as possible. This position, normally in the vicinity of frames 68–69, places the skimmer collection pocket near the aft quarter of the T-ATF and facilitates observation of the skimmer in the collection pocket as well as keeping hose runs short. In designating the position of the king post assembly, consideration must be given to securing points for the tabernacle tiedowns and placement of the support legs. Careful consideration must also be given to the selection of the correct stand-off plate, and if needed the addition of shims, so that the face of the tabernacle clears any rub rail appendages that protrude beyond the bulwark.

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OPERATING PROCEDURE

OP 10-7 ERECTING THE HIGH SPEED CURRENT BUSTER KING POST WITH/WITHOUT THE OUTRIGGER

NOTE

Assembly of the king post and the outrigger is best accomplished pier side or in protected/sheltered waters. The outrigger, once attached to the king post, can be swung aft, parallel with the bulwark aft of the king post, and secured for sea well above the waterline. Upon arrival at the operational site, the outrigger is lowered into the water and tethered into the perpendicular position with the forward and aft guy lines.

1. Assemble the tabernacle with the proper stand-off. The stand-off selected must allow the outboard face of the stand-off to clear all rub strakes below when the king post (Figure 10-51) is in the full vertical position. (ESSM)

Figure 10-51. King Post with Outrigger Fully Deployed

2. Position the tabernacle (see Figure 10-52) with the proper stand-off on the gunwale in the vicinity of frames 67–68. (ESSM)

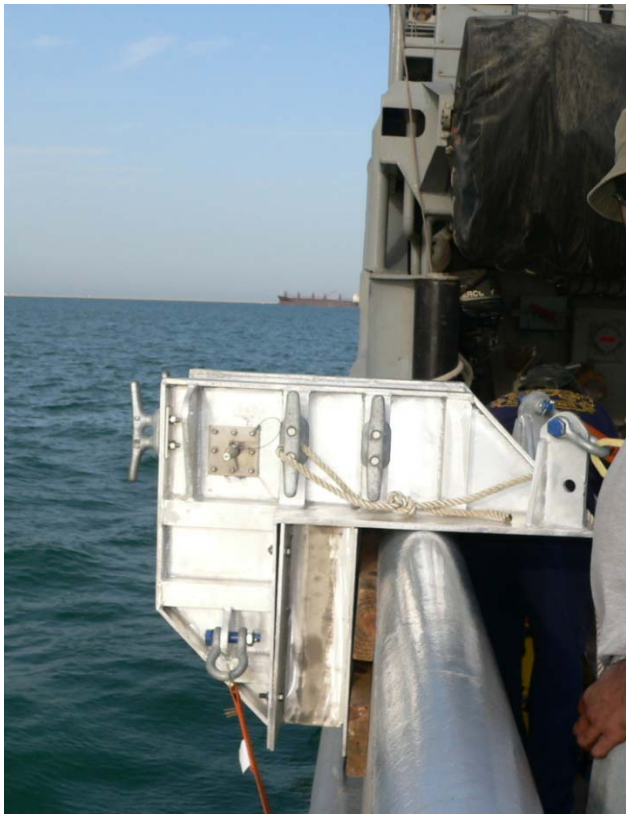

Figure 10-52. Tabernacle Mounted on T-ATF Bulwark

3. Secure the tabernacle to the gunwale T-ATF deck with four ratchet straps. Ideal ratchet strap tiedowns are at 45 degree angles from both the horizontal and vertical. The two outboard ratchet straps will pass under the bulwark. The two inboard ratchet straps are coupled to Baxter bolt eyes or fixed points located to achieve the desired 45 degree angles. (T-ATF/ESSM)

NOTE

Proper alignment of the two halves of the king post is color coded.

4. Assemble the two halves of the king post. (ESSM)
5. Adjust the lower king post stand-off assembly to a “best guess” distance to ensure the stand-off firmly hits the hull near the waterline with the king post in the vertical position. (ESSM)
6. Measure from the tabernacle pivot pin point to 4–6″ above the T-ATF waterline. Select the appropriate pin hole on the king post for the pivot pin that will position the bottom stand-off on the king post 4–6″ above the waterline. Pin the king post to the tabernacle. (ESSM)

7. Install the two rear sheer legs into the swivel joints on the inboard top side of the king post. (ESSM)
8. Erect the king post. This is a trial fit without rigging to check stand-off and pin placement. Lower the king post, and mark for any required adjustment of the pin placement to achieve the desired 4–6″ above the waterline location of the lower end of the king post. Adjust the lower stand-off to achieve full contact with the hull and vertical alignment. Repeat the trial erection of the king post until satisfied with alignment. Adjust the length of the two sheer legs to achieve the desired 45 degree angles during these trials. Lock the lower stand-off and sheer legs into position once satisfied with their placement. (ESSM)
9. Select and attach the forward, aft, upper, and lower Kevlar guide lines to the king post. Rig the king post Kevlar back stay to the top of the king post. Rig the inboard tow line from the current buster through the lower king post guide assembly. (Option: a messenger line can be used for the purpose of feeding the inboard current buster tow line later in the operation.) (ESSM)
10. Erect the king post, and spread the rear sheer legs to a 45 degree angle. Place the adjustable spreader between them. Secure the bottom of the support legs with ratchet straps, again at a 45 degree angle, back to the vessel in the vicinity of the tabernacle at deck level. (ESSM)
11. Using the supplied chains/binders, secure the inboard ends of top/bottom guy lines forward and aft at 45 degree angles where possible. Secure the inboard top guy line back at a 45 degree angle from the vertical to a Baxter bolt eye. Lightly tighten all guy lines to achieve equal tension on all support legs in the system. (T-ATF/ESSM)
12. Place the davit, with block and tackle, into the king post on the selected side. (ESSM)
13. Adjust the height of the male outrigger connection to the top of the king post slide. Secure the lines to cleats on the tabernacle. This will facilitate installation of the outrigger. (ESSM)

NOTE

Do not assemble the outrigger if the paravane is being used.

14. Assemble the three sections of the outrigger following the color coded alignment markers. Mount the float on the outboard end of the outrigger. Check to ensure the snatch block on the end of the outrigger is secure. Free the forward and aft Kevlar guy lines from their stow position on the outrigger. (ESSM)
15. Rig the outboard current buster tow line or a messenger in the outrigger snatch block. Rig the outrigger topping lift from the top of the king post to its position two-thirds of the way out on the assembled outrigger. (ESSM)
16. Prepare to launch the outrigger. The outrigger can be passed by hand over the gunwale, or the davit on the king post can be used to assist in the deployment. (ESSM)
17. Establish communications between the T-ATF bridge, deck, and ESSM crews, and prepare to launch the outrigger. (T-ATF/CREW)
18. Coordinate with the T-ATF to create a lee to launch the outrigger. (T-ATF/ESSM)
19. Rig the forward and aft outrigger guy lines. Note that the forward Kevlar guy line has a block and tackle at the inboard end. (ESSM)
20. Place outboard end of the outrigger on the gunwale next to the tabernacle. (ESSM)

NOTE

Communication using hand-held radios with personnel manning the guy line and the associated block and tackle is critical as the T-ATFs superstructure blocks line of sight to the forward securing points.

21. Man the forward and aft guy lines. (T-ATF/ESSM)
22. Coordinate with the T-ATF, and feed the outrigger overboard while maintaining control of the outboard end with the guy lines. (T-ATF/ESSM)
23. As the inboard end of the outrigger nears the king post, rig the block and tackle from the king post davit to the eye on the inboard end of the outrigger. (ESSM)
24. Hoist the inboard end of the outrigger over the rail with the block tackle. Adjust the height, and install the male end of the gooseneck on the king post into the female receptacle on the outrigger. Lock in place. (ESSM)
25. Adjust the outrigger forward and aft guy lines so that the outboard end of the outrigger is slightly forward and perpendicular to the T-ATF. (ESSM)
26. Adjust the height of the inboard end of the outrigger so that it is between the tabernacle and the lower stand-off. The inboard end of the outrigger should be about 15 degrees above the horizontal. Secure the adjustment lines to the cleats on the tabernacle. (ESSM)
27. Check all guy lines for tension and securing. The system is now ready for installation (Figure 10-53 and Figure 10-54) of the current buster. (T-ATF/ESSM)
28. If the T-ATF is going to transit to an offshore location, the outrigger can be swung aft, the float end lifted and secured to the bulwark. (T-ATF/ESSM)

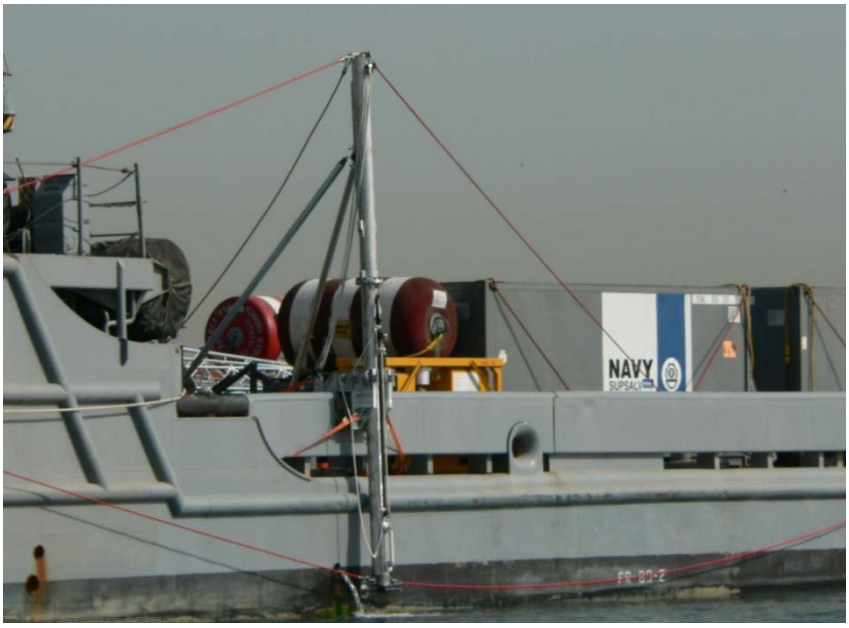

Figure 10-53. Outboard View of the Assembled King Post on the T-ATF

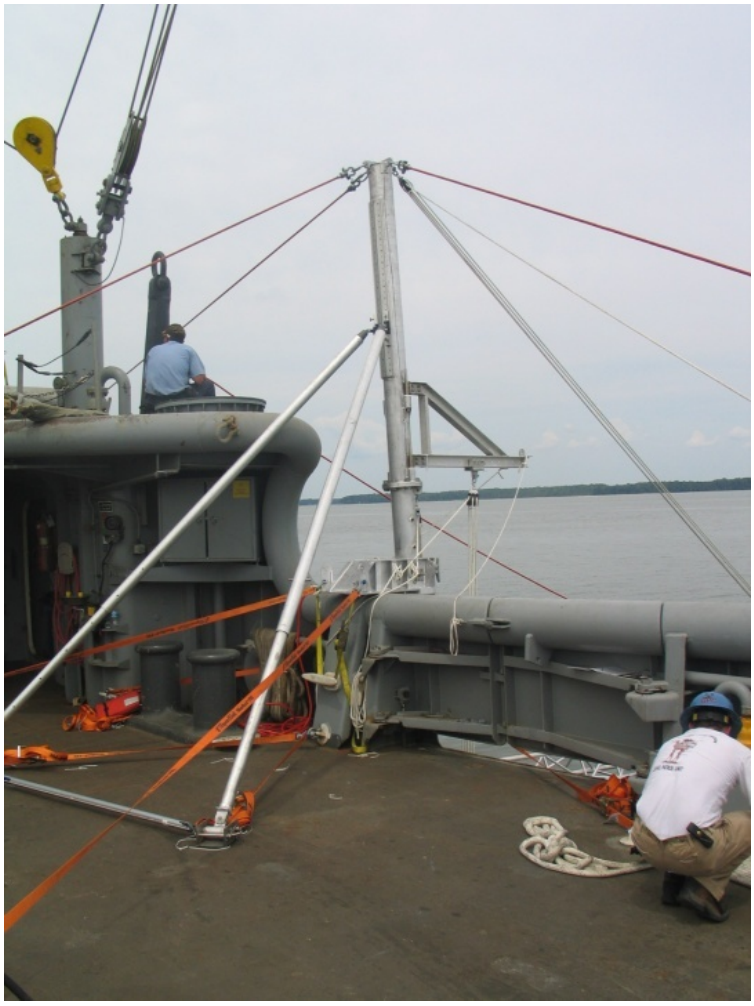

Figure 10-54. Inboard View of the Assembled King Post

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OPERATING PROCEDURE

OP 10-8 INSTALLING AND OPERATING THE CURRENT BUSTER SUPPORT CONTAINER WITH HYDRAULIC CRANE MOUNTED ABOARD THE T-ATF

NOTE

A shore based crane is required to offload the towing assembly from the T-ATF and load the support van (Figure 10-55), hpu, and position the hydraulic crane on top of the container.

Figure 10-55. High Speed Skimmer Support Van

1. The support container will be positioned aft of frame 105 in the far outboard corner of the T-ATF on the same side of the vessel that the current buster is to operate. If two current busters are deployed, two support containers will be deployed with one on each side of the vessel. Since the support container will be close to the bulwark, it is recommended that the container(s) be positioned so that the doors are facing the centerline of the vessel to allow access. (T-ATF/ESSM)
2. Secure the support container to the deck of the T-ATF. Using the chains and binders provided, and with assistance from the T-ATF crew, attach two of the 3/8″chains into each corner post with the provided 1 5/8″ and 7/16″ shackles. Position the Baxter bolts to secure the container to the deck of the vessel where possible. On the outboard side of the container, the chains will be secured through

the bulwark freeing ports. Pad eyes are provided in the support container for bolting or welding to the deck or bulwark in places where adequate tiedowns are not readily available. A total of eight tiedowns, two in each corner of the container, are required to properly secure the container with the mounted crane to the deck. The container will be secured to the deck of the vessel to the satisfaction of the Vessel Master or Chief Mate. (T-ATF/ESSM)

3. Remove the hydraulic crane and crane support equipment from the container. (ESSM)
4. Using the shore side crane and the support container sling assemblies and tag lines, position the crane on top of the support container. Using the supplied ladders, position two personnel on top of the secured container with the four crane securing bolts, associated wrenches, alignment fid, and torque wrench to mount the crane to the frame.
5. Using the shore side crane, lift the hydraulic crane to the furthest aft outboard mounting plate on top of the support container using the provided sling assembly and a tag line.

NOTE

On the base of the crane, the mounting hole next to the crane's hydraulic motor must be positioned on the diagonal beam across the top corner of the container. This position also uses a stud to secure the crane, and the stud must be installed into the crane frame before positioning the crane on the mount. One person should coordinate positioning of the small hydraulic crane onto the frame with the shore based crane operator while the other person aligns the crane and installs the securing bolts. Tighten the bolts firmly before releasing the shore side crane. Torque all four bolts holding the crane to the box to 100 foot-pounds shore side crane. (T-ATF/ESSM)

6. Install the railings on the container top. (ESSM)
7. Mount the hydraulic control stand. (ESSM)
8. Connect the hydraulic splitter in line with the HPU hydraulic hoses. From the splitter, connect the hoses to the crane umbilical. (ESSM)
9. Before operating the crane, recheck all fastenings and lashings. (T-ATF/ESSM).
10. Perform operator checks on the HPU, and bring the HPU online. Align the hydraulic splitter so as to provide power to the crane and operate the crane without a load, checking for full function and hydraulic leaks. Correct any identified deficiencies. (ESSM)
11. Perform a load test on the crane, and upon completion of the load test, and re-torque the four crane mounting bolts to 100 foot-pounds. Recheck all eight of the container tiedowns for tension. (T-ATF/ESSM)
12. With T-ATF approval, the crane is now ready to support current buster operations. (T-ATF/ESSM)

OPERATING PROCEDURE

OP 10-9 DEPLOYING THE HIGH SPEED CURRENT BUSTER SKIMMING SYSTEM WITH THE OUTRIGGER

NOTE

The tow bow and aft tow pin box assembly on the aft deck of the T-ATF must be removed for efficient current buster deployments. (T-ATF Crew)

NOTE

If two current buster s are to be deployed, one on each side of the T-ATF, the reel assembly should be offset from the centerline of the vessel toward the side of deployment.

13. Place the current buster reel assemblies in the vicinity of frame 80 with the hydraulic motor facing forward on the T-ATF. Secure the reel assembly with tiedowns to Baxter bolt eyes. (T-ATF/ESSM)
14. Place protection around any projections on the aft deck that may damage the fabric of the current buster during deployment. (ESSM)
15. Place the 8′ x 8′ Support Container and the hydraulic crane assembly on the T-ATF in accordance with the instructions in OP10-8.

NOTE

The HPU will support operation of the reel, the crane on the container, and the skimmer selected for the operation in the current buster separator.

16. If two current buster s are to be deployed, one on each side of the T-ATF, the reel assembly should be offset from the centerline of the vessel toward the side of deployment.

NOTE

When two units are being deployed, the second HPU position will mirror the first but on the opposite side of the T-ATF.

17. Using the shore side crane, place and secure the hydraulic power unit in the vicinity of frame 95, near the bulwark on the same side as the current buster is to be deployed. (T-ATF/ESSM).
18. Connect the hydraulic lines from the HPU to the current buster reel control stand. Perform pre-operational checks on the HPU, and start the HPU. Reel out the current buster tow lines and the USS 26″ boom. Set the USS 26″ boom aside if it is not going to be used. (ESSM)

19. Prepare the selected skimmer for deployment by rigging the hydraulic hoses and discharge hose. Position the skimmer assembly in the vicinity of frame 105 for deployment into the separator pocket of the current buster using the hydraulic crane on top of the Support Container.
20. Lead the inboard current buster tow line(s) through the lower guide on the king post before final erection of the king post. Alternately, a messenger line can be run through the guides to deploy the tow line at a later time if desired. (See OP10-7 for erection of the king post/outrigger)
21. Rig the current buster outboard tow line (or a messenger line) through the snatch block on the outboard end of the outrigger before the outrigger is deployed. (ESSM)
22. The king post and the outrigger can now be fully erected/deployed (see OP10-7). (ESSM)

NOTE

Current Buster Backpack Inflators are two cycle gasoline engines.

23. Perform pre-operational checks on the current buster backpack inflators. (ESSM)
24. Reel out the first sections of the Current Buster Sweep until the forward end is at the stern roller of the T-ATF. Release the temporary current buster net ties, and check that the reeving lines are properly rigged. Inflate the available current buster sections, securing the cap tightly when complete. (ESSM)
25. Coordinate with the T-ATF bridge to position the vessel to take advantage of prevailing winds, current and sea conditions for deployment of the current buster over the stern and subsequently alongside to the king post/outrigger. (T-ATF/ESSM)
26. Deploy the inflated sections of the current buster over the stern of the T-ATF while simultaneously reeling out the additional sections. Use the tow lines to move the deployed current buster alongside the T-ATF on the same side that the king post was erected. (ESSM) A small inflatable boat can be used to assist in positioning the current buster if necessary.
27. Continue reeling out and inflating until the current buster is fully deployed and alongside of the T-ATF (see Figure 10-56). (ESSM)

Figure 10-56. Deployed High Speed Current Buster

NOTE

If the small hydraulic crane is not available, the skimmer can be placed into the separator pocket using one of three options.

Option 1. Manually lower the skimmer into the pocket over the stern roller. Take all necessary precautions regarding lift vests and safety lines for personnel working over the stern.

Option 2. After launching the Current Buster, haul the stern of the Current Buster around to the starboard quarter of the T-ATF to a point where the T-ATF crane can place the skimmer in the pocket. With the skimmer in the pocket, haul the Current Buster into the skimming position.

Option 3. Remove the outrigger from the tabernacle, lower the tabernacle into the down position, and using the forward capstan, haul the Current Buster all the way forward until the pocket is below the small boat crane. Use the small boat crane to lower the skimmer into the Current Buster pocket. Slide the Current Buster aft, re-rig the king post, re-launch the outrigger, and position the Current Buster for operations.

28. Once fully deployed (Figure 10-57), the skimmer and associated hoses are lowered into the separator pocket using the hydraulic crane on top of the 8′ x 8′ container for oil recovery operations. See note above for options on placing the skimmer in the separator pocket if the crane on the support container is not available. (ESSM)

Figure 10-57. T-ATF with High Speed Current Buster Skimmer Underway

29. The current buster is now moved into the skimming mode by hauling in on the inboard and outboard towing lines. Continuous coordination with the T-ATF bridge to take advantage of prevailing winds, current, and speed is necessary to facilitate this operation. The outboard tow line should have its lead as far forward and as low on the T-ATF as possible, forming as near as possible a 45 degree angle between the tow line and the outrigger with minimal elevation. The inboard tow line leads forward, again entering the T-ATF as low as possible to avoid pulling the leading current buster buoyancy chamber out of the water. (ESSM)
30. Prepare the Oil Recovery Bladder for deployment. Rig the skimmer discharge hoses, and mouse all the cam lock fittings. Lash the discharge hose to the tow line. Cap the end of the hose, and open the valve on the Oil Storage Bladder. (T-ATF/ESSM)

NOTE

If two current busters are being used, one on each side of the T-ATF, the one on the starboard side of the T-ATF will need to be hauled in and the Oil Storage Bladders launched outboard of the current busters. Alternately the Oil Storage Bladders can be launched before rigging the starboard side Current Buster, and temporarily secured on the aft port quarter of the T-ATF. Another alternative is to position the bladder near the stern of the T-ATF and deploy by rolling off the stern.

31. Deploy the supporting Oil Recovery Bladder using the T-ATF crane, and position it astern of the T-ATF. Rig the bladder for a stern tow (normally on the same side of the T-ATF as the system it is supporting). (T-ATF)
32. Connect the discharge hose from the skimmer to the Oil Storage Bladder receiving hose. (ESSM)
33. Coordinate with the T-ATF to commence skimming operations. (T-ATF/ESSM) When the current buster pocket is full of recovered product, and offload the current buster into the Oil Storage Bladder. Depending on the scenario, the skimmer may be left in the pocket or removed until more oil is collected.

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OPERATING PROCEDURE

OP 10-10 DEPLOYING THE HIGH SPEED CURRENT BUSTER SKIMMING SYSTEM WITH THE PARAVANE

NOTE

The tow bow and aft tow pin box assembly on the aft deck of the T-ATF must be removed for efficient current buster deployments. (T-ATF)

34. Place the current buster reel assembly in the vicinity of frame 80 with the hydraulic motor facing forward on the T-ATF. Secure the reel assembly with tiedowns to Baxter bolt eyes. (T-ATF/ESSM)

NOTE

If two current busters are to be deployed, one on each side of the T-ATF, the reel assemblies should be offset from the centerline of the vessel toward the side of deployment. The second reel will be on the other side of the center line.

35. Place the 8′ x 8′ x 8′ Support Container and the hydraulic crane assembly on the T-ATF in accordance with the instructions in OP10-8. (T-ATF/ESSM)
36. Place the current buster fiberglass deployment mats aft of the reel to protect the current buster during deployment. In addition place protection around any projections on the aft deck that may damage the fabric of the current buster during deployment. (T-ATF/ESSM)

NOTE

The HPU will support operation of the reel, the crane on the container, and the skimmer selected for the operation in the current buster separator. When two units are being deployed, the second HPU will mirror the first but on the opposite side of the T-ATF.

37. Using the shore side crane, place and secure the HPU in the vicinity of frame 95 near the bulwark on the same side as the current buster is to be deployed. (T-ATF/ESSM).
38. Connect the hydraulic lines from the HPU to the current buster reel control stand. Perform pre-operational checks on the HPU, and start the HPU. Reel out the current buster tow lines and the USS 26″ boom. Set the USS 26″ boom aside if it is not going to be used. (ESSM)
39. Prepare the selected skimmer for deployment by rigging the hydraulic hoses and discharge hose. Position the skimmer assembly in the vicinity of frame 105 for deployment into the separator pocket of the current buster using the hydraulic crane on top of the Support Container. (ESSM)

NOTE

Assembly of the paravane is dependent on the side of the vessel it is deployed on. See detailed instructions in the paravane instruction book located in the storage container.

40. Assemble the paravane so that the rudder/control arm assembly will be on the inboard side facing the T-ATF when deployed (Figure 10-58). (ESSM)

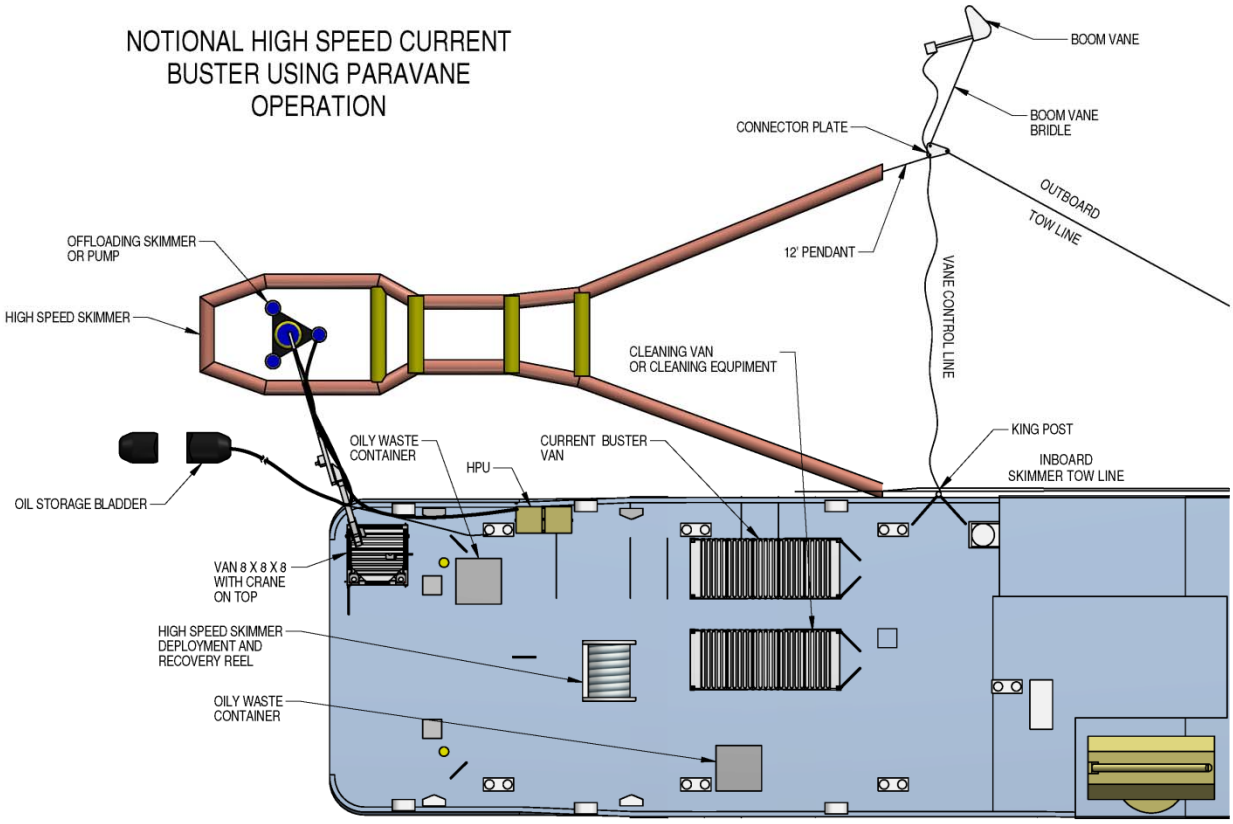

Figure 10-58. Notional High Speed Current Buster using Paravane Operation

41. Lead the inboard current buster tow line(s) through the lower guide on the king post before final erection of the king post. Alternately a messenger line can be run through the guides to deploy the tow line at a later time if desired. (See OP10-7 for erection of the king post/outrigger.) (ESSM)
42. The king post, without the outrigger assembly, can now be fully erected/deployed (see OP10-7). (ESSM)
43. Perform pre-operational checks on the current buster backpack inflators. (ESSM)

NOTE

These are two cycle gasoline engines.

11. Reel out the first sections of the Current Buster Sweep on the deployment mat until the forward end is at the stern roller of the T-ATF. Release the temporary current buster net ties, and check that the reeving lines are properly rigged. Inflate the available current buster sections securing the cap on the inflation valve tightly when complete. (ESSM)
12. Disconnect the connector plate from the paravane assembly by removing the boom vane bridle from the connector plate. Remove the control line by pulling it through the pulley. (ESSM)
13. Disconnect the outboard tow line from the current buster, and connect it to the hole in the long leg of the paravane connector plate/bridle assembly. Connect the outboard leg of the current buster to the inboard hole on the paravane connector plate using the 12′ pendant provided. (The paravane will be positioned outside of the assembly with the rudder assembly facing the T-ATF when in the operational position.) (ESSM)
14. Coordinate with the T-ATF to position the vessel to take advantage of prevailing winds, current, and sea conditions for the deployment of the current buster over the stern of the T-ATF and positioning alongside to the king post/outrigger. (T-ATF/ESSM)
15. Deploy the inflated sections of the current buster over the stern of the T-ATF while simultaneously reeling out the additional sections. Use the tow lines to move the deployed current buster alongside the T-ATF on the same side that the king post was erected. (ESSM)
16. Continue reeling out and inflating until the current buster is fully deployed and alongside of the T-ATF (see Figure 10-59). (ESSM)

Figure 10-59. Deploying the High Speed Current Buster from the T-ATF

NOTE

If the small hydraulic crane is not available, the skimmer can be placed into the separator pocket using several options.

Option 1. Manually lower the skimmer into the pocket over the stern roller. Take all necessary precautions regarding life vests and safety lines for personal working over the stern.

Option 2. After launching the Current Buster, haul the stern of the Current Buster around to the starboard quarter of the T-ATF to a point where the T-ATF crane can place the skimmer in the pocket. With the skimmer in the pocket, haul the Current Buster into the skimming position.

Option 3. Lower the tabernacle into the down position, and using the forward capstan, haul the Current Buster all the way forward until the pocket is below the small boat crane. Use the small boat crane to lower the skimmer into the Current Buster pocket. Slide the Current Buster aft, re-rig the king post, and position the Current Buster for operations.

17. Once the current buster is fully deployed, disconnect the HPU from the reel control stand, and connect it to the dual purpose crane/pump control block. The skimmer and associated hoses are lowered into the separator pocket using the hydraulic crane on top of the 8′ x 8′ container for oil recovery operations. The selector valve on the control block allows the crane and skimmer pump to be operated either independently or simultaneously. In the simultaneous mode, priority is given to the crane operation. (ESSM)
18. With the leading edges of the current buster in the vicinity of the king post, heave in on the outboard tow line to retrieve the connector plate for the paravane aboard the T-ATF. Attach the boom vane bridle on the paravane assembly to the outboard hole in the connector plate. Feed the bitter end of the control line through the small pulley. Launch the paravane using the davit on the king post or any davit/crane available. The paravane may also be launched manually. (T-ATF/ESSM)
19. The current buster is now moved into the skimming mode by hauling in on the inboard tow line until the leading edges of the current buster tow plate are near the king post and secured. The paravane will be outboard of the outboard current buster skimmer leg (see Figure 10-60). (T-ATF/ESSM)

Figure 10-60. Fully Deployed High Speed Current Buster with Paravane

20. Secure the outboard tow line as far forward and as low as possible on the T-ATF. Secure the tow line so the leading edge of the outboard current buster tow plate is in line with the king post. (T-ATF/ESSM)
21. Prepare the Oil Recovery Bladder for deployment. Rig the skimmer discharge hoses, and mouse all cam lock fittings. Lash the discharge hose to the tow line. Cap the inboard end of the hose, and open the valve on the Oil Storage Bladder. Attach the At Sea Bladder Pumping System if required by the operational concept. (ESSM)

NOTE

If two current busters are being used, one on each side of the T-ATF, the one on the starboard side of the T-ATF will need to be hauled in and the Oil Storage Bladders launched outboard of the current busters. Alternately the Oil Storage Bladders can be deployed first and positioned of the stern of the T-ATF. Oil Storage Bladders can also be positioned on the stern of the T-ATF and deployed by rolling them off. (T-ATF/ESSM)

22. Rig the bladder for a stern tow. (T-ATF/ESSM)
23. Deploy the supporting Oil Recovery Bladder using the T-ATF crane, and position astern of the T-ATF. Connect the discharge hose from the skimmer to the Oil Storage Bladder receiving hose. (T-ATF/ESSM)

24. Coordinate with the T-ATF bridge, and slowly make headway. The forward movement will cause the paravane to pull the outboard leg of the current buster into the open position. Speeds up to 4 knots through the water are considered ideal for skimming operations. Adjustment to the paravane is accomplished with the rudder control line, and adjustment to the overall current buster location in relationship to the T-ATF is accomplished with the tow lines. (T-ATF/ESSM)
25. Coordinate with the T-ATF to commence skimming operations. (T-ATF/ESSM)
26. When the current buster separator is full of recovered product, offload the recovered product in the current buster separator into the Oil Storage Bladder. Depending on the scenario, the skimmer may be left in the separator or removed until more oil is collected. (T-ATF/ESSM)
27. Skimming operations require continuous coordination between the T-ATF bridge and the ESSM support personnel. This is especially true when maneuvering in congested areas and when offloading the current buster (Figure 10-61). (T-ATF/ESSM)

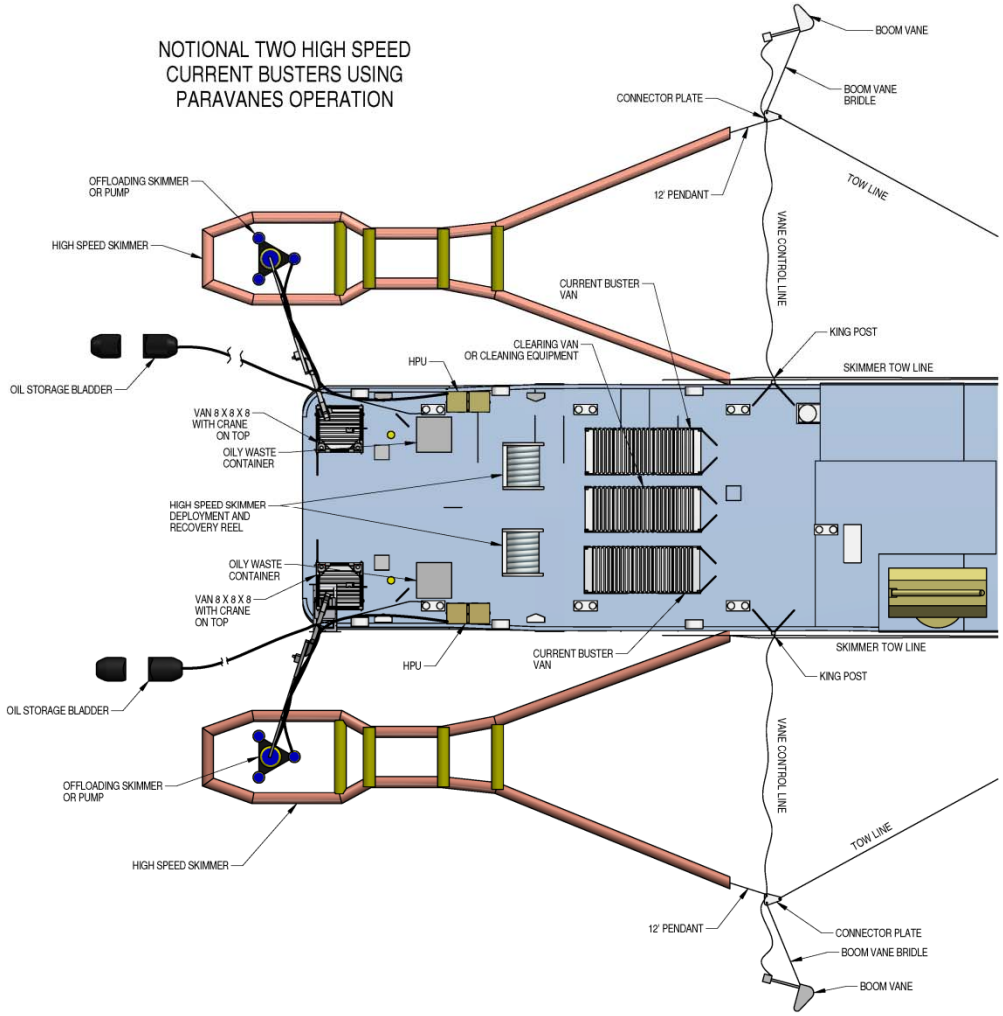

Figure 10-61. Notional Two High Speed Current Busters using Paravanes on the T-ATF

10.3.2.3 Recover Current Buster Equipment.

OPERATING PROCEDURE

OP 10-11 RECOVER CURRENT BUSTER SYSTEM ABOARD THE T-ATF

NOTE

The T-ATF, ESSM small boats and deck crew leader must maintain radio contact at all times to control speed and recovery of the NOFI skimmer system and associated equipment.

Gross decontamination of all equipment should be accomplished prior to retrieving the assets back aboard the T-ATF (see Figure 10-62). In most scenarios, the responsible party will have established gross decontamination stations throughout the operational area.

Figure 10-62. Recovering the High Speed Current Buster Aboard the T-ATF

CAUTION

Recovery of the current buster is a slow operation allowing water to drain from the large pocket.

CAUTION

The oil recovery bladder can be recovered back aboard only if it is empty. The oil recovery bladder, with recovered product or water inside, is best left in a stern tow until it can be offloaded.

1. Develop a plan and sequence for High Speed Current Buster System component recovery. (T-ATF/ESSM)
2. Prepare hydraulic reel and anti-chafing mat for recovering the current buster. (ESSM)
3. Coordinate with the T-ATF to create a lee, and position the stern of the current buster astern of the T-ATF. (T-ATF/ESSM)
4. Slowly reel in the current buster over the stern roller allowing water to drain, deflating the air chambers as they come over the stern roller. (T-ATF/ESSM)
5. Recover the outrigger. The outrigger can be fully retrieved by unlocking it from the king post and pulling it back on board, or it can be stowed along the aft bulwark by swinging it aft over the stern roller using the capstan. (ESSM)
6. Recover the Oil Storage Bladder (empty) using the T-ATF crane. (T-ATF/ESSM)
7. Secure all system components for transit in accordance with T-ATF requirements. (T-ATF/ESSM)

10.3.3 Containment Boom and Boom Mooring Operations from the T-ATF. (OP 10-3)

The procedure for the loadout, deployment, and recovery of the Oil Containment Boom and associated Boom Mooring Systems from the T-ATF discussed here is one of many alternatives available for deploying boom. The principals addressed are proven and applicable to variations of this scenario. As with all operations aboard the vessel, they must be discussed and reviewed by the NAVSEA Representative, the Ship's Master, the Chief Mate, and ESSM On-Scene Leader prior to deploying the T-ATF as a vessel of opportunity for oil booming operations. A pre-stow plan, developed by NAVSEA and ESSM personnel, will be coordinated for approval with the Ship's Master and the Chief Mate and revised as necessary to meet their requirements. Prior to the loadout of the Oil Containment Boom and associated Boom Mooring Systems, an operations and safety meeting will be held with all parties involved in the oil booming operation. In addition, the vessel will provide a vessel-specific safety briefing to all embarked personnel.

Integrated within the boom deployment scenarios is the requirement for the T-ATF to provide logistics support including berthing, messing, communications, force protection, decontamination assistance, and husbandry to the skimming and containment crews embarked.

10.3.3.1 Containment and Deflection Operations with the Oil Containment Boom Systems and the Associated Boom Mooring Systems. All necessary equipment for containment and deflection

operations with the Oil Containment Boom Systems will be delivered to the designated staging area for the spill recovery operation and unloaded as directed by the ESSM designated Person In Charge (PIC).

All equipment will be rigged for loading aboard the T-ATF by ESSM personnel. The majority of equipment will be loaded aboard the T-ATF via a pier side crane (i.e., equipment stowed aft of the reach of the ship's gear). Equipment will be stowed and secured on the aft deck of the T-ATF. Typical equipment for this operation includes the following: Boom Mooring Systems with 500 or 1000-lb anchors, 5000-lb buoyancy mooring buoys, 24″ x 36″ 350 lb buoyancy crown buoys, and shots of 2 1/4″ x 90′ stud link chain as well as the pallets of boom to be deployed. The boom is normally deployed in 1000 foot or less increments with an anchor system on each end. This may vary depending on the operational situation.

10.3.3.2 Deployment of Containment Boom and Boom Mooring System. The boom and Boom Mooring System can be transported to an offshore location and deployed from the aft deck of the T-ATF (Figure 10-63) or commercial off-shore supply vessel with a large open aft deck space. All equipment can be unpacked, assembled on deck, and launched as a unit from the aft deck and stern rail of the T-ATF. For efficient boom deployment operations, the tow bow and tow pin unit must be removed to allow for a free and clear stern rail. The T-ATF provides enough deck space to carry one 1000′ length of assembled and inflated boom. In addition another 1000′ of boom and two mooring systems can be carried on pallets and in storage containers to be assembled after the deployment of the fully assembled system. The boom and Boom Mooring Systems can be deployed from these vessels in various modes for a variety of uses, including the following:

- 1000′ or less fully assembled lengths of boom and associated mooring systems for deflection or for containment around the spill
- Boom Mooring System deployed individually (e.g., center anchoring point in a three-point mooring configuration)
- Boom Mooring System deployed individually with a small boat being used to tow the boom to the mooring sytems

Figure 10-63. Boom and Mooring Systems Positioned for Deployment Aboard a T-ATF

WARNING

Ensure that safety lines are attached to both the anchors to prevent accidental or premature release. Ensure there is an unobstructed access path to cut the anchor securing line and an escape route for the individual releasing the anchor/chain.

NOTE

There are a variety of ways to lay out systems on deck. Ensure that the anchor is cantilevered over the stern so that when the safety line is released/cut that the anchor falls without assistance and pulls the chain and the remainder of the system with it. Be sure that the 2nd chain and anchor are secured on the stern so as not to disrupt the flow of the boom launch. Ensure that the chain is not laying on any system components. Ensure that all components will have a clear path to the launching point on the stern before the launching sequence begins.

OPERATING PROCEDURE

OP 10-12 PREPARE BOOM AND MOORING SYSTEMS FOR DEPLOYMENT

1. Position and lash the crown buoy for the first mooring system to the stern of the T-ATF as directed by the Chief Mate. The crown buoy will be deployed first, followed by the anchor, chain, mooring line, buoy, boom, followed by the second mooring buoy, mooring line, chain, anchor, and finally the crown buoy. (T-ATF/ESSM)
2. Position the anchors on the stern roller, and secure with a safety line. The safety line needs to be strategically placed in order that a crew member may cut the line without being endangered. Position the anchors cantilevered over the stern so that gravity will allow them to self-deploy when the safety line is cut. (T-ATF/ESSM)
3. Attach one end of the 90′ shot of 2 1/4″chain to the anchor stock using the provided pear link. (ESSM)
4. Fake out the chain, and in turn the mooring line adjusted for the depth of the water so as to allow a free flow over the stern when the anchor is released. (T-ATF/ESSM)

NOTE

Since the chain weighs more than the anchor, the chain must be faked out close to the stern roller so the weight of the anchor and the drag of the crown buoy automatically pulls it overboard when released. Chain may be faked with bites fore and aft or athwartships.

5. Attach the mooring buoy to the mooring line, and position the buoy so it will follow the chain overboard. (T-ATF/ESSM)
6. Attach the first section of boom to the mooring buoy. Fake out and inflate the boom in accordion fashion so it will deploy without entangling itself. (T-ATF/ESSM)
7. Prepare the second crown buoy, crown wire, anchor, chain, line, mooring buoy and attach to the boom. (ESSM)
8. Fake out as noted in steps 2, 3, 4, and 5 above ensuring that the deck arrangement allows for a free flow of the system on release of the anchor. The second anchor layout will mirror the first one, except that it will deploy in reverse mooring the buoy, line, chain, crown wire, crown buoy. (T-ATF/ESSM)
9. Carefully examine the final layout (see Figure 10-64) to ensure that the system will deploy in the desired sequence: crown buoy, crown wire, anchor, chain, mooring line, mooring buoy, boom, mooring buoy, mooring line, chain, anchor, crown wire, and crown buoy. (T-ATF/ESSM)

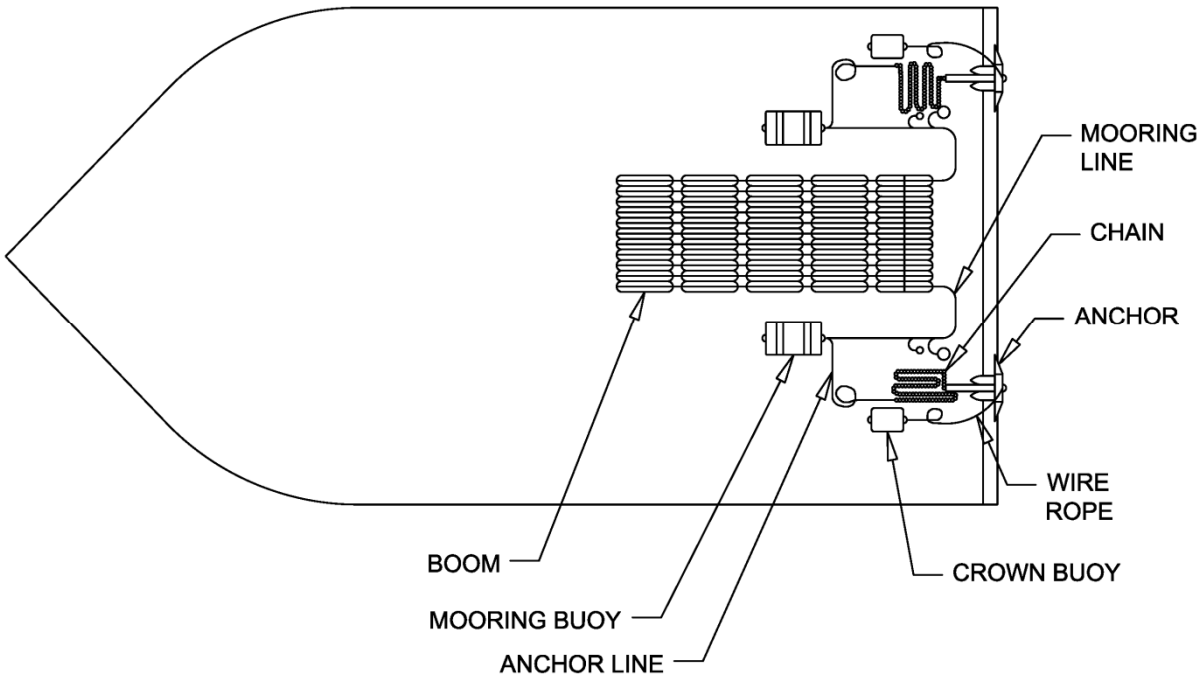

Figure 10-64. Single Leg of Boom and Mooring Systems Positioned for Deployment

OPERATING PROCEDURE

OP 10-13 DEPLOYMENT OF CONTAINMENT BOOM AND BOOM MOORING SYSTEM

WARNING

When an anchor and chain are being deployed, all personnel are to stand well clear to avoid becoming entangled in the anchor chain, line, and boom as it is paying out. The designated anchor cutting person should have a clear emergency escape path should something malfunction.

1. In coordination with the T-ATF bridge, steam up current at a slow speed to the desired first anchor location. (T-ATF/ESSM)
2. Position the designated anchor cutting individual with his ax ready to take the signal of the supervisor to cut the line. All other personnel should be well clear of the deployment area around the chains and anchors. (T-ATF/ESSM)
3. Fifty yards from the first anchor point, release and stream the crown buoy and wire astern. (T-ATF/ESSM)
4. Upon arrival at the first anchor point, cut the anchor safety line starting the deployment. The T-ATF continues on course at slow speed toward the second anchor point. (T-ATF/ESSM)
5. Position the line cutter for the second anchor. As the last section of boom, buoy, mooring line, and chain deploys, signal the line cutter to cut the second anchor securing line. (T-ATF/ESSM)
6. Coordinate with the T-ATF to steer the stern away from the second anchor when it is released so as not to foul it in the propeller. (T-ATF/ESSM)
7. The second crown buoy will self-deploy from the pull of the boom and weight of the anchor. (T-ATF/ESSM)
8. Adjust the position of the boom mooring points as necessary by pulling on the crown buoy to relocate the anchor. This can be done by using the T-ATF, a BHB, the ship's workboat, or a small boat of sufficient horsepower to move the system. (T-ATF/ESSM)

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10.3.3.4 Recovery of the Containment Boom and Boom Mooring Systems.

OPERATING PROCEDURE

OP 10-14 CONTAINMENT BOOM RECOVERY

CAUTION

Do not choke the boom or lift it with the handles.

1. Contaminated boom should receive a gross cleaning at the designated decontamination station before retrieving back aboard the T-ATF. (T-ATF/ESSM)
2. Position the T-ATF to take advantage of the wind and current so the boom can be retrieved over the stern roller. (T-ATF)
3. Pass the boom tow line to the stern of the T-ATF, and using a snatch block, obtain a fair lead to the ship's capstan. (T-ATF/ESSM)
4. In a coordinated effort, ease the boom up over the stern rail while simultaneously snugging with the capstan. (T-ATF/ESSM)
5. Deflate each boom chamber as it is pulled onto the aft deck of the T-ATF. (ESSM)
6. When the leading tow plate reaches the snatch block, secure the leading edge of the boom section nearest the stern roller. Disconnect this section from the sections on deck, and pull the on-deck sections of boom aside. (ESSM)
7. Remove the tow plate, and reconnect it to the lead section of boom secured to the stern rail. (ESSM)
8. Haul in the next sections of boom with the capstan repeating steps 5, 6, and 7 above. (T-ATF/ESSM)
9. Repeat the operation until all the boom is retrieved and stowed so as to have a clear deck for retrieving the anchors. (T-ATF/ESSM)

NOTE

Boom may be cleaned using an environmentally approved, biodegradable cleaner/degreaser. Facilities must be available to contain the accumulated cleaning waste and product residue for disposal. If cleaning cannot be performed onsite at an established gross decontamination facility, spray boom with a water source as it approaches the stern of the vessel. A thorough cleaning shall be accomplished where cleaning facilities are available.

10.3.3.5 Boom Mooring System Recovery. The ship's crane, or capstan, may be used to recover the Boom Mooring System. If possible the gear should be hosed down as it is brought aboard. In addition a freshwater rinse and drying are required before repacking the boom to prevent additional corrosion in storage.

NOTE

The inflatable rubber boat facilitates the recovery of the lights and the crown buoy.

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OPERATING PROCEDURE

OP 10-15 RECOVER BOOM MOORING SYSTEMS

1. Recover the navigation lights. (ESSM)
2. Pick up the crown buoy and haul aboard. Haul in on the crown wire using either the ship's crane or the capstan with ESSM provided slings and 5/8″ carpenter stoppers. (T-ATF/ESSM)
3. Continue hauling in on the crown wire until the anchor breaks free. The crown wire can be stopped off with the second carpenter stopper, and the hauling wire relocated to a new bite to continue recovery. Continue leap-frogging with the carpenter stoppers until the anchor is aboard. (T-ATF/ESSM)
4. Secure the anchor with a safety line, taking into consideration that the shot of chain weighing approximately 6000 pounds is still hanging. Using slings, and either the ship's crane over the side or the capstan for over the stern roller, grab sections of the chain with the sling and haul aboard. (T-ATF/ESSM)
5. Continue hauling the chain aboard by taking additional bites with the sling in the links and hauling them on deck. As each bite is hauled aboard, secure the chain on deck to the vessel well before taking the next bite of chain. (T-ATF/ESSM)
6. When all of the chain is on deck, release the anchor from the chain. (ESSM)
7. Disconnect the anchor chain from the polypropylene line. (ESSM)
8. Haul in the polypropylene line, and coil it on deck. (T-ATF/ESSM)
9. Using the T-ATF crane, haul in and retrieve the mooring buoy and mooring pendant. (T-ATF/ESSM)
10. Disconnect all parts. If cleaning facilities are available, clean the parts with an environmentally approved, biodegradable, commercial degreaser in the same manner as the boom. Rinse in freshwater, and ensure that all parts are dry before repacking. (T-ATF/ESSM)
11. Offload all components of the boom and Boom Mooring System, repack, and return to the ESSM facility.

10.3.4 Mother Ship and Cleanup Habitability Requirements. (OP 10-16)

During pollution response operations, the T-ATF is tasked to provide security, fuel, berthing, messing, communications, and resupply for the deployed ESSM personnel and equipment. In conjunction with these requirements, the vessel needs to consider the additional load of heavily soiled clothing that will need washing and the accumulation of waste in the form of heavily soiled disposable tyvec suits, sorbent pads, and debris that will be accumulated on a daily basis requiring additional large waste containers.

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10.3.4.1 Ship Decontamination Zones.

OPERATING PROCEDURE

OP 10-16 ESTABLISH DECONTAMINATION ZONES ON THE T-ATF

The objective of establishing decontamination zones on the T-ATF is to limit the spread of oil and contamination to designated areas on the ship while simultaneously keeping the ship operating spaces, accommodation, and messing facilities free of contamination.

1. Designate a Red Zone for gross decontamination of personnel and equipment. (T-ATF/ESSM)
2. Clearly mark the Red Zone boundaries. (T-ATF/ESSM)
3. Outfit the Red Zone with oily waste and debris containers, washdown facilities, sorbents, and a PPE outer garment decontamination station. (T-ATF/ESSM)
4. Designate and clearly mark Yellow Zone boundaries, and outfit for general cleaning after gross decontamination in the Red Zone. (T-ATF/ESSM)
5. Designate and clearly mark areas on the vessel as Green Zones where personnel and equipment that are contaminated are prohibited from entering. (T-ATF/ESSM)

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