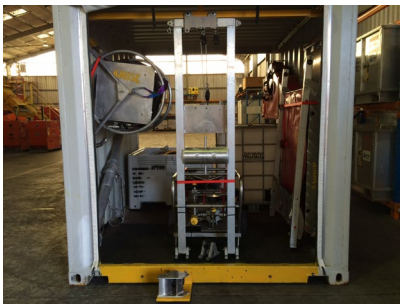
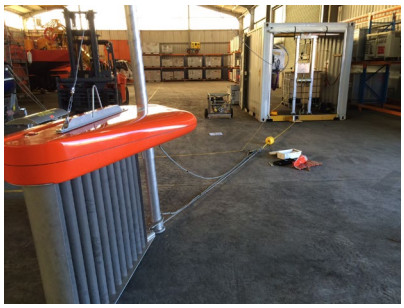
AMOSC
Australian Marine
Oil Spill Centre Pty Ltd

Standard Operating Procedure

Coastal BoomVane Dispersant Spray System

Equipment Description

The Elastec Coastal BoomVane Dispersant Spray System combines a multi-nozzle dispersant delivery system with a BoomVane to give a vessel based dispersant system with a swath width of up to 20 metres. The system consists of a control frame with winch mounted in a customised 10' container and includes a reel mounted flexible hose with delivery nozzles, the BoomVane, and associated ropes and fittings. Alternatively, the frame can be removed from the 10' container and mounted directly on a vessel. Dispersant is delivered via an AFEDO Boat spray pump unit. One IBC of dispersant, along with the AFEDO Dispersant Spray System can be supplied and mounted within the 10' shipping container.

Technical Specification

Weight: 3500kg
Fuel type: Diesel
Engine: Yanmar L70 Diesel Engine
Pump: Hypro 1500 roller pump

Health and Safety

Gloves to be chemical resistant. Eye protection to be goggles. Chemical or Tyvek type suit, complete with hood, to be made available for use where required. The SDS for dispersant is to be referred to during dispersant operations

To safely complete this task a minimum of 2 people are required.

Safe Operating Requirements

- All personnel are to be trained or under the close supervision of a trained operator
- Job Safety Analysis (JSA) to be conducted prior to work commencing. Identification of the following safety factors are critical, but not limited to:
  - Manual Handling,
  - Slips/Trips/Falls,
  - Vehicle/Vessel Movements,
  - Pinch Points and Personnel
  - Contamination/Decontamination.
- Ensure adequate Personal Protective Equipment (PPE) is worn – as detailed above.
  - * Life jackets must be worn near water depending on operation.

- A communication plan must be decided upon to ensure clear and concise communication at all times
- Do not ingest or inhale dispersant vapour, or allow contact of dispersant with skin or eyes. In the case of skin contact, flush skin with clean fresh water. Seek medical advice.
- Eyewash facility is required and must be available.
- Clean up any spillage immediately.
- Deck areas which are exposed to dispersant spray will become slippery and must be washed down before personnel are able to use the affected deck areas.
- Safety Data Sheet (SDS) must be available at all times.
- All incidents, accidents and near misses must be reported as per AMOSC HSSE Plan.

Operational Instructions

Emergency shutdown

In the event that an emergency shutdown is required, the following measures should be taken.

- Move the throttle to the “off” position
- Turn key to the “off” position
- Close all valves, including Intermediate Bulk Container (IBC) valve if applicable.

Pre-start checks

- Check general condition of all equipment and ancillaries.
- Check operation of engine stop lever.
- Check all engine fluid levels.

For detailed information on specifications, operation and servicing, refer to the Elastec Operation and Service Manual for the Coastal BoomVane Dispersant Spray System

Note: prior to commencing dispersant spray applications, ensure that authorisation to apply dispersant has been provided.

Pre-operation setup

The system is housed and transported in a customised 10’ container. This will need to be positioned to one side of the vessel, aligning the externally fitted, deck level, towline pulley with appropriate access through the side of the vessel i.e. beside either a deck gate, freeing port or panama fairlead. Configuration will depend on the vessel available, but orientation of the container must be with the two opening doors inboard and the curtain side outboard, as close to the gunnel as possible.

The system is designed by default to deploy from the starboard side of the vessel, though it is deployable from either side of the vessel. Both the Boom Vane and the set-up of the shipping container will require changes if being deployed from the port side of the vessel. The two sheaves at the bottom of the winch/pin rail assembly (tow tower) will need to be aligned such that the towline is directed out at a 45 deg angle towards the stern, through the gunnel. The top hitches for the pulley system will need to be switched over when changing from port to starboard such that the hose/nozzle feed line has its fixed point toward the stern and the hose/nozzle line is fed from toward the bow. Total time to change the set-up should take no more than 20 – 30 minutes.

When the best position has been located, secure the 10’ container to the deck by use of chains, twist locks or by welding.

Setup and deployment

Remove the boom vane and dispersant spray system components from the 10’ container, noting that:

- The winch/pin rail assembly remains bolted in position and is not to be removed unless the system is to be transported onto and deployed from a vessel without the shipping container.

- The dispersant IBC can remain inside.
- Loose equipment must be controlled at all times and secured in position to prevent unexpected movement due to vessel movement or sea state.

Prepare the system in accordance with the Operation & Service Manual, but in general follow the steps below:

- Assemble boom vane and boom vane mast, noting that it has two configurations – one for port and one for starboard deployment.
- Attach the externally mounted sheave onto the container base underneath the winch/pin rail assembly, ensuring that the pulley is mounted in the correct alignment for port or starboard deployment
- Discuss and note how the boom vane will be deployed into the water, ensuring that any method used will allow recovery after completion of operations
- Run all control lines from the winch/pin rail assembly to the boom vane and connect, ensuring that the line-up is clean and there will be no tangles on launch
- Use extra snatch blocks if required to ensure clean leads with no chafe points on any lines.
- Assemble spray system.
- Align vessel facing into current or wind to allow the boom vane to be held off during launch.
- Deploy boom vane into the water and pay out all lines until one full wrap of the mast top line remains on the winch, adjusting vessel speed to generate pull if/as required
- Vessel speed and direction will need to be determined and adjusted to optimise deployment but a minimum boom vane speed of 3 to 5 knots through the water will be required to ensure enough tension to keep the delivery hose above the sea surface
- Check for potential wear/chafe points and rectify as required
- Hook on flexible dispersant spray nozzle hose to upper tension line, attach carousel (feed) line and deploy
- If the dispersant spray nozzles come into contact with the sea surface regularly vessel speed may need to be increased to increase tension on the top mast line
- Once the delivery hose and nozzles are deployed, attach the pump system and commence spraying as required

Operation

When in position, commence spraying operations in accordance with the relevant section of the Incident Action Plan, continually consideration of the prevailing weather conditions.

Note that ‘inside’ turns (Turning the vessel towards the direction of the boom vane) will result in loss of tension in the boom vane mast top line, and can potentially result in nozzles hitting the sea surface or coming into contact with the tow line.

Retrieval

Flush delivery system (Pump), hose, and nozzles with water prior to retrieval. Retrieval is basically a reversal of the deployment. Minimal vessel speed and favourable heading based on current/wind will assist in reducing line tension and retrieval.

Post operation

When spraying is complete and equipment is retrieved:

- Flush the pump, hoses and spray system with fresh water.
- Disassemble and wash all equipment, and when clean and dry return into position in the 10’ container.
- Ensure that all equipment is returned to response ready condition.

Additional information

Dosage rates should be set based on visual or scientific observation and monitoring techniques.

A dispersant spray log must be kept – template included below.

Maintenance

- All maintenance and repairs are to be completed in accordance with the manufacturer or AMOSC procedures.
- All equipment must be left in an operational condition when not in use.
- All defects must be repaired immediately or the equipment be “tagged out” for maintenance and repair.

Related Documents

AMOSC HSSE Plan
PN08 - HSSE Policy
AMOSC JSA Template
SOP 1001 Ops; Forklift Operations
SOP 1002 Ops; Loading and Securing of Cargo
SOP 1003 Ops; Transporting Equipment To/ From Warehouse
Coastal BoomVane Dispersant Spray System – Operation & Service Manual.
Dispersant application observers guide – NOAA.
Dispersant SDS

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Incident		Date	

Operator		Vessel name	
Company		Vessel IMO no	
Equipment type		Contact details	

Oil description and dispersant type

Oil type		Dispersant Type	
Description of oil		Date of manufacture	

Weather and sea state

Wind speed		Sea state	
Wind direction		Current speed	
Weather conditions		Current direction	

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Run No	Vessel speed	Start Time	Start Position Lat / Long		Finish Position Lat / Long		Finish Time	Volume applied	Application rate	Dispersant observed as effective	Remote sensing used
1											
2											
3											
4											
5											

Dispersant application Log

Total volume applied	
Total dispersant remaining	