DEMEX International Inc. SOP

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Offshore Operations

DEMEX Standard Operating Procedures
Blasting Operations

Prepared by DEMEX

During blasting operations Communication is the most important factor. The order of operation and clearance of fire should be planned out and the contingencies for no clearance and misfire should be addressed before starting operations.

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ISSUE	1.1
DATE	02/05/09

Once Finished SOP 1.2 Connecting Detonators, and the barge is ready to move away.

1. Moving Off Location:

1.1. Give clearance to barge via Radio or PA that they may begin to move away.

1.2. If using shot line, Explosive Technician must observe or tend line.

1.2.1. Be aware of amount of line left on reel.

1.2.2. Keep a loose tension on line.

1.2.3. Do not let current take control of line.

1.2.4. Be vigilant of any vessels in area and warn them not to pass between the target and your position.

1.3. If using remote:

1.3.1. Be sure to check status before moving away to ensure both parts communication between transmitter and receiver.

1.3.2. Check the status again once vessel is finished moving away.

1.4. Warnings over radio and over PA system, that explosives are about to be detonated:

1.4.1. Be sure all vessels in the area have moved far enough away as to be clear of any flying debris.

1.4.2. Be sure that all **dive vessels** in the area have received warning and **responded.**

2. Clearance of Fire and Initiation:

2.1. NMFS in most cases must give operational clearance to initiate the explosives.

2.1.1. If technician sees turtles or marine mammals during this operation he must inform NMFS and must wait for conformation and NMFS to do another search or tell him it is clear.

2.1.1.1. Even if clearance has already been given if technician sees turtle or marine mammals follow 2.1.1

2.1.1.2. If Technicians see a turtle or marine mammal after the shot, this must also be reported to NMFS, remember to record location and condition of sited animal.

2.2. The Vessel also needs to give clearance to initiate usually the deck foreman or supervisor will relay NMFS clearance and give clearance for vessel.

2.3. Once clear to fire, Explosive technician will initiate the firing sequence:

2.3.1. An "All Clear" notification with a short count down to a warning of "Fire in the Hole" just before firing.

2.3.2. The explosive Technician will observe the detonations and make certain all targets initiated.

3. Misfire:

3.1. If any of these situations occur, then the Explosives Technician will follow the Misfire S.O.P.

3.1.1. If none of the detonators initiate, technician will try shot again from clearance of fires.

3.1.2. If charges still do not fire - see MISFIRE SOP.

3.1.3. If only some of the targets initiate – see MISFIRE SOP.

3.1.4. If you cannot confirm that all targets have been initiated – see MISFIRE SOP.

4. When Blasting is complete:

4.1. Give clearance to vessel via radio or PA system to move back in, and return to regular operations.

4.2. Recover shot line (if being used) rinse, and check condition and continuity.

4.3. Clean and secure all tools.

4.4. Stow and secure all explosives in magazines.

4.5. Once on site observe and record the results of blasting operations in log book, (when possible take pictures/video).

4.6. Recover remote, (if being used) clean and recharge.

DEMEX Standard Operating Procedures
Connecting Detonators

Prepared by DEMEX

References:

- SOP 1.20 Capping-In to Det-cord
- SOP 1.1 Blasting Operations

DEMEX SOP's are meant to be a guide and are subject to change to meet the requirements of the job.

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Issue	1.2
Date	02/05/09

1 Connecting to Detonators:

1.1. Before connecting Detonators Explosive Technician shall:

1.1.1. Check his lightning detector if squalls or possible lightning in area.

1.1.2. Ensure that there are no divers in the water or consult with dive supervisor.

1.1.3. Remove all non essential personnel from structure or work area.

1.1.4. Test (shot line/remote).

1.2. Turn on remote and secure or buoy (remote/shot line):

1.2.1. When using remote find a place that is protected to tie it down.

1.2.1.1. if on freestanding conductor or three pile use shot line if able otherwise buoy it instead of tying it off

1.2.1.2. also if platform is low in to water buoy instead of tying off

1.2.2. Make sure that you tie shot line off to a spot that will hold as you back away (i.e. some handrails are rotten and will break).

2 Connecting Non Electric Detonators:

2.1. The Explosive Technician will first decide what order the targets will be shot.

2.2. The Explosives Technician will plan the path and best ensure no obstacles or possible damage to series will occur thru falling loose objects.

2.3. Once all the Non Electric detonators are connected and run in series the Technician will double check all connections and shot path.

2.4. Connecting the detonators See SOP 1.20 Capping-In to Det-cord.

3 Connecting Electric Detonator:

3.1. Will call for radio silence.

3.2. If using a remote turn receiver on before hooking detonator to (receiver /shot line).

3.3. See SOP 1.20 Capping-In to Det-cord.

4 The Explosive Technician should do a final check, end radio silence, and return to vessel ready to back away.

5 After finished Capping-in procedures move on to SOP 1.1 Blasting Operations.

DEMEX Standard Operating Procedures
Initial Jobsite Actions

Prepared by DEMEX

** The Technician should inspect personal gear to be sure it is in working condition before going on a job. This will also allow the technician to inventory the equipment and be sure that nothing is forgotten. Make a list of the equipment that needs to be carried on each job and go over it before leaving on that job.

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Issue	1.3
Date	03/04/14

1. Upon Arrival The Explosive Technician will
   1.1. Survey the vessel
   1.2. Determine a safe location for the storage of the on-board magazine
      1.2.1. Location to the decided upon after consultation with the Captain of the Vessel or Barge.
      1.2.2. The Explosive Technician will define and establish a safe perimeter for the "Restricted Area" that is to surround the Magazine(s) and Work Area.'
      1.2.3. The Explosive Technician will also utilize barriers, and warning signs that prohibit
         1.2.3.1. Smoking;
         1.2.3.2. Open flames
         1.2.3.3. "Hot work"
         1.2.3.4. Unauthorized personnel
      1.2.4. Electric blasting caps and delays will be stored in a separate magazine from the other explosives
2. These should be done ASAP:
   2.1. Sign in with vessel clerk and get room/bunk assignment.
   2.2. Check toolbox and magazine for damage and water
   2.3. Maintenance locks
   2.4. Complete inventory and compare to records
   2.5. Locate were extras such as T-bars Swede's and cable have been stowed.
   2.6. Meet with each of supervisors you will be working with i.e. vessel superintendent, deck foremen, dive supervisor, and company rep.
   2.7. Locate emergency plan for your room and study
   2.8. Be sure your room has flotation devices and that they are stored correctly.
3. It is imperative that the Explosive Technician participates in all job meetings and safety meetings pertaining to the explosives work.
4. The Explosive Technician will, after surveying all job info and the work area will:
   4.1. Provide all and be familiar with all MSDS's pertaining to the explosives operations.
   4.2. Write up and/or print JSA's to go over in pre-work safety meeting for work being done on that shift.

4.4. Go over and be familiar with all SOP's for work he will be doing, and be ready to provide them upon request.

4.5. Request and receive any work permits or other such safety requirements as required by vessel.

5. At contractors request on the location, the Explosive Technician will begin the preparation of explosive devices (without actually arming the devices) in the aforementioned Restricted Area.

5.1. Be sure to fallow correct SOP.

5.2. Keep an accurate account of explosives, and non explosive materials usage. (i.e. rope, cable, shackles).

5.3. If not loading Explosive right after preparation explosives must be secured in magazine, or Restricted Area

5.4. Be sure to go check with oncoming shift leaders and foreman at shift change to be sure they are informed of your Restricted Area and what work you are doing.

DEMEX Standard Operating Procedures
Load-Lift-Stow Magazine

Prepared by DEMEX

The moving loading and unloading of a magazine should not be done alone if possible!

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Issue	1.4
Date	03/04/09

1. Loading of Magazines:
   1.1. Safety:
      1.1.1. Use of proper safety equipment i.e. hard hat, gloves, and steel toed boots required.
      1.1.2. A JSA will be written out and gone over with all personnel involved with task.
      1.1.3. Make sure door of magazine is secured open so it cannot shut on someone, nor shut them in.
      1.1.4. Use proper lifting techniques.
      1.1.5. Get help with heavy loads.
      1.1.6. Visually inspect the condition of box and ensure lifting handles secure.
      1.1.7. Ensure correct labels and stickers are on box and visible.
   1.2. Bracing :
      1.2.1. All boxes in magazine must be made secure with 2'x4'so they cannot move in any direction.
      1.2.2. Wood and nails will be used to brace boxes against floor, sides, and roof of magazine.
      1.2.3. Caulk or silicone should be used to cover all nail heads and metal.
      1.2.4. Comply with USCG requirements, and relevant CFR's.
      1.2.5. No explosive should be exposed in the open during lightning storms.
2. Lifting of Magazines:
   2.1. Safety:
      2.1.1. All relevant safety gear should be worn.
      2.1.2. Inspect all equipment for defects i.e.:
         2.1.2.1. Crane.
         2.1.2.2.sling
         2.1.2.3.hooks
         2.1.2.4.pad eyes
      2.1.3. Designate **one** person to relay **all** signals to crane operator.
      2.1.4. Use 2 tag lines of at least 20 ft. length.
      2.1.5. No lifting of explosives should occur when lightning is in the area.
      2.1.6. Lifting in rough weather and seas should be done only if absolutely necessary.

3. Stowing of Explosive Magazine:

3.1. Explosives should not be stowed on or near:

3.1.1. Welding and cutting, or hot work area. (50 ft unless fire watch mounted).

3.1.2. High traffic areas.

3.1.3. Smoking areas .

3.2. Correct stowage includes:

3.2.1. Positioning doors with easy access.

3.2.2. Posting no smoking signs and proper placards and danger tape around toolbox & Magazine.

3.2.3. Using chain binders and four point tie down.

3.2.4. Referring to DOT and CFR for proper segregation distances from other hazardous materials.

NOTE - Always inform DEMEX International Inc. if magazines are to be moved to another vessel or if you plan to send them in to the dock. 3 to 5 working days notice is needed if sending Magazines inshore.

DEMEX Standard Operating Procedures
Load Sub- Sea Conductor

Prepared by DEMEX

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Date	03/04/09

1. Setting the Charge:
   1.1. A soft line with det-cord attached, will be connected to the bridle of the charge for the sub-sea well.
   1.2. A T-bar/or marker is attached to the soft line and det-cord at the proper distance to allow the diver/ROV pilot to place the charge in the sub-sea target and suspend the charge to proper cut depth. (See figure 1)
   1.3. The diver/ROV proceeds to the designated sub-sea target.
   1.4. The charge is lowered to a depth just above the sub-sea target to meet with diver/ROV. (See Figure 2)
   1.5. Diver/ROV stabs target with charge and lowers till T-bar/marker is in place at top of target.
2. Diver/ROV ties off T-bar/marker and surveys det-cord to ensure no damage has occurred.
3. 1 thru 2 is repeated till all planned sub-sea targets are loaded.
4. Diver/ROV evacuates to surface.
5. After diver/ROV is clear the Explosives Technician will follow the correct Capping In,and Blasting SOP.
6. The vessel can then proceed with regular operations.

Note: It is imperative that the Explosive Technician participate in all job safety and on-site location meetings.

Figure 1:

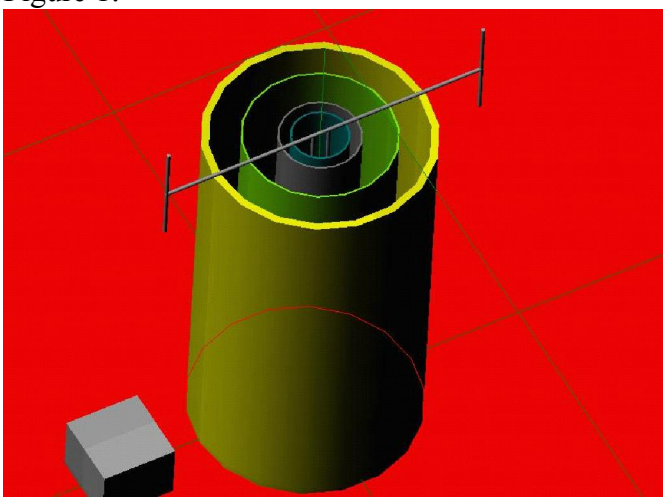
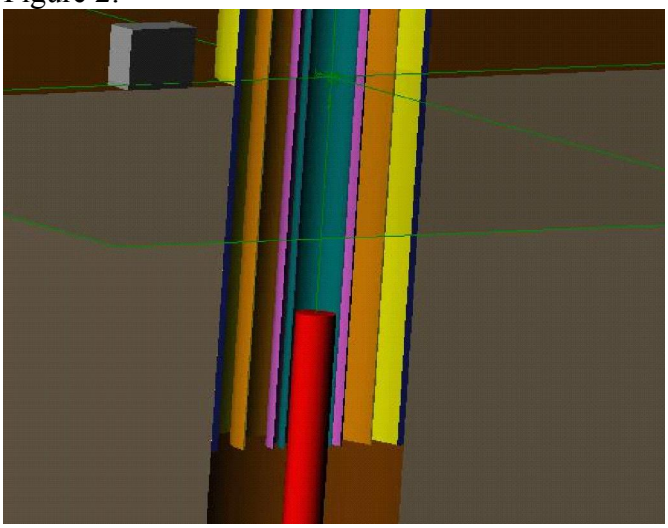


Figure 2:



DEMEX Standard Operating Procedures
Load Bulk Charges from Surface

Prepared by DEMEX

It is always good to inspect the DETCORD as it is unreeled and do your best to protect it from abrasions.

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Date	03/04/14

1. Setting Charge/s:
   1.1. The Explosive Technician will insert the explosive charge into the Pile/Conductor and lower it to the pre-determined depth.
   1.2.While lowering charge technician will take care
      1.2.1. To ensure det-cord is not cut, abraded, or kinked.
      1.2.2. To correctly splice any breaks in rope or det-cord
      1.2.3. To correctly tie off rope and secure det-cord
      1.2.4. To make sure charge goes all the way to agreed upon shot depth
         1.2.4.1.Note: If not report immediately to responsible person for instruction.
   1.3.Record any discrepancy in
      1.3.1. Depth
      1.3.2. String size
      1.3.3. Grout (grout/no grout)
      1.3.4. Strings moving or stable
   1.4.The explosive technician will mark Pile/Conductor in such a way with paint or such, so any movement during the shot can be noted.
      The above actions are repeated as needed for each Pile/Conductor
2. The explosives technician decides on the order of blast if more than one charge being shot
   2.1.Making sure none of the det-cords cross
   2.2.Taking into account the best shot path and sequence to prevent shoot outs from dropping conductors or falling debris.
   2.3.Finding best place to set up remote/shot line
3. Once shot path is decided on and laid out the Explosives Technician will follow the correct “SOP Connect Detonators,” and “SOP Basting Operations”.
4. After Initiation the explosive the technician will
   4.1.Take note of any movement that has occurred to Piles/Conductors
   4.2. Also note any grout displacement in strings or of structure.
5. The vessel may begin the salvage operations as best determined by its Captain.

Note: It is imperative that the Explosive Technician participates in all job safety and on-site location meetings

DEMEX Standard Operating Procedures
Loading of Centralizers Sub Sea

Prepared by DEMEX

Before beginning work loading devices sub-sea the technician should go over JSA and procedures with assisting crew, divers, and/or ROV drivers. The path and order of operations should be planned out and all safety concerns and questions met and answered.

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Issue	1.7
Date	02/05/09

1. Loading Centralizer into Target.

   1.1. Move charges, cables and t-bars to staging area.

      1.1.1. Following all safety practices.

      1.1.2. Ensure no hot work within 50ft. of critical path, and work area.

   1.2. Shackle the cable to T-bar and T-bar to the block or stinger from block. Have Barge lift block to let all twist out of cable.

   1.3. Connect bottom end of cable to centralizer with shackle.

   1.4. Connect Det-cord to pigtails coming out of top hole of centralizer and run det-cord out to T/bar.

   1.5. Lift device off deck to safe swing height then swing over water.

   1.6. Lower device to desired depth to meet diver/ROV.

   1.7. Technician should tend Det-cord over side.

   1.8. Technician should try to keep device from spinning by holding det-cord firm and out at an angle.

   1.9. Diver/ROV wills Guide Centralizer to stab into target.

      1.9.1. Diver/ROV will instruct barge to lower device till T-bar settles at top of target.

      1.9.2. As the centralizer reaches the severing depth, the diver/ROV will pay special attention in guiding the T-bar so that it rests across the top of the pile.

      1.9.3. Be aware of det-cord as T-bar comes down, Diver/ROV should watch det-cord carefully to ensure it is clear of T-bar as it settles on top of target.

      1.9.4. Diver/ROV Unshackle the T-bar.

2. Repeat process 1 thru 1.9.4 for the next device.

3. Once all charges are set, and the diver/ROV is clear Explosive Technician will follow the correct "Connection and Firing SOP" for situation.

4. The vessel may resume salvage operations.

DEMEX Standard Operating Procedures
Loading Centralizer to Pile

Prepared by DEMEX

Remember to keep hands and det-cord out of pinch points between centralizer and inside wall of pile. This is especially true when connecting to centralizer with det-cord before lowering.

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Issue	1.8
Date	02/05/09

1. Loading Centralizer into Target.

    1.1. Move charges, cables and t-bars to staging area. Staging area is predetermined in pre job meeting and is the location where charge will be hung from derrick for lowering into piles.

    1.2. Shackle the cable to T-bar and T-bar to the block or stinger from block. Have Barge lift block to let all twist out of cable. Connect bottom end of cable to Centralizer with shackle. Lift device off deck to safe swing height then swing out to jacket.

    1.3. Guide Centralizer to stab bottom end into target.

    1.4. Connect det-cord to pigtails coming out of top hole.

    1.5. Instruct derrick operator to lower device.

        1.5.1. While lowering device into pile make sure not to damage det-cord or trunk line.

        1.5.2. As the Centralizer device reaches the severing depth, guide the T-bar so that it rests across the top of the pile.

        1.5.3. Be aware of det-cord as T-bar comes down, tech should handle det-cord to ensure it is clear of T-bar.

        1.5.4. Unshackle the T-bar then tie ends of bar to target to prevent loss.

    1.6. Repeat process 1.2 -1.5.4 for the next device.

    1.7. Once all charges are set, Explosive Technician will follow the correct "Connection and Firing SOP" for situation.

2. After Detonation Tasks

    2.1. DEMEX personnel will retrieve, or have retrieved by barge personnel, the T-bars, and cables. The loss of any will be recorded.

    2.2. The cable has been shock loaded and cannot be reused, however the t-bars are reusable and are to be stowed with magazines.

    2.3. The Explosives Technician will then observe the water level inside each pile & record in logbook.

The vessel may resume salvage operations.

DEMEX Standard Operating Procedures
Loading of FLBC

Prepared by DEMEX

Communication with the dive supervisor and good planning with the diver is the key to correctly utilizing this typeof charge.

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Issue	1.9
Date	03/04/09

1. Conduct a pre-dive meeting to review step-by-step operation of charge placement
2. Placement of Charge
   2.1. Diver conducts an inspection of the inside of the caisson
      2.1.1. Look for sharp edges of previously severed well/conductor
      2.1.2. Take note of how level the bottom is along the inside wall of the caisson
      2.1.3. If the slope is too steep leading away from the inside wall of the caisson: the Diver may have to take time to prepare a shelf to support the charge: as well as the sand bags which will be used as a stemming material.
   2.2. Receiving Charge
      2.2.1. Rig up to one end of flexible linear charge.
      2.2.2. Lift charge and begin to lower into the caisson.
      2.2.3. The diver should receive the charge at the top of the caisson and guide it to the bottom.
   2.3. Actual placement:
      2.3.1. The diver will choose a starting point and place one end of the charge against the caisson wall.
      2.3.2. As the charge is slowly lowered, the diver will continue to guide the charge along the inside caisson wall and ensure its placement on the shelf.
      2.3.3. The diver will continue along the inside wall of the caisson until the opposite end of charge is reached (As per picture below).
      2.3.4. Any gap or overlap should be reported to tech and corrected as per plan. (See Figure 1)
   2.4. Diver will de-rig charge from surface.
   2.5. Diver will inspect the det-cord leads for nicks and abrasions.
   2.6. If using more than one FLBC the above procedure will be repeated making sure to follow technician's orders on the overlapping of charge ends.

3. Tamping Charge
   3.1. Crane will rig to a pallet of sand bags and lower it next to the caisson.
   3.2. Diver will receive the pallet next to the cassion, and then the diver will drop sand bags into cassion.
   3.3. The pallet will then be cleared from cassion.
   3.4. Diver will reposition sand bags to place them on the charge. (As in picture below) This operation will continue until the entire FLBC is covered with sand bags. (See Figure 2)
   3.5. The diver will climb out of caisson. Again, care should be taken not to snag or cut the det-cord leads.
   3.6. Diver will again inspect the det-cord leads for nicks and abrasions before leaving the bottom and will tie off the rubber hose (optional as per need) protecting the det-cord at top of cassion.
4. After diver board's vessel, the operation will follow normal Connection and Firing SOP as per situation.
5. Repeat operations for next cassion. If required.
6. Vessel may resume normal operations.

Figure 1:

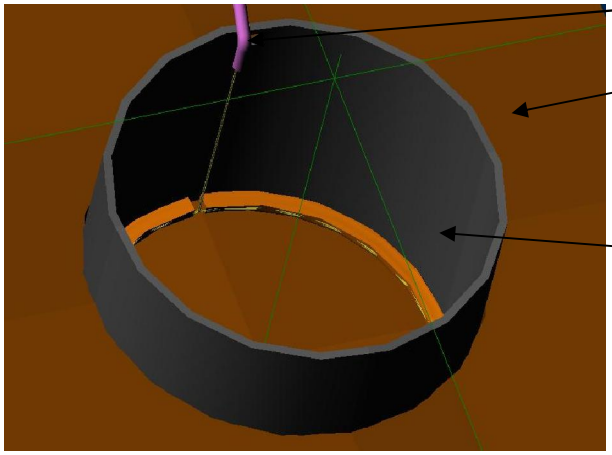
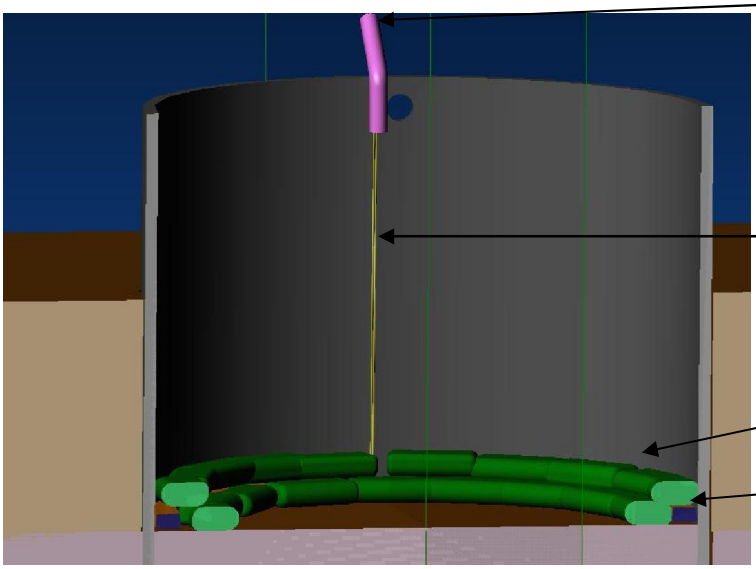


Figure 2:



DEMEX Standard Operating Procedures
Loading SWEDe from Surface

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Watch sea and weather conditions. Make sure it is not to ruff to load before you start picking up the charges with the crane.

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Issue	1.10
Date	03/04/09

1. Before loading:
   1.1. Make sure Vessel has sounded and drifted pile sand that they are clear to targeted depth.
   1.2. Make sure work vessel has filled pile with water.
2. Loading SWEDe into Target:
   2.1. Move charges, cables and t-bars to staging area. Staging area is predetermined in pre job meeting and is the location where charge will be hung from derrick for lowering into piles.
   2.2. Shackle the cable to T-bar and T-bar to the block or stinger from block. Have Barge lift block to let all twist out of cable. Connect bottom end of cable to SWEDe with shackle. Lift device off deck to safe swing height then swing out to jacket. (See Figure 1)
   2.3. Guide SWEDe to stab bottom end into target.
   2.4. Connect Det-cord to pigtails coming out of top hole.
   2.5. Instruct barge to lower device.
      2.5.1. While lowering device into pile make sure not to damage det-cord trunk line.
      2.5.2. As the SWEDe III device reaches the severing depth, guide the T-bar so that it rests across the top of the pile.
      2.5.3. Be aware of det-cord as T-bar comes down, tech should handle det-cord to ensure it is clear of T-bar.
      2.5.4. Unshackle the T-bar then tie ends of bar to target to prevent loss.
   2.6. Repeat process a thru h for the next device.
   2.7. Once all charges are set, Explosive Technician will follow the "Capping In" and "Blasting Operations" SOP for the situation.
3. After Detonation Tasks:
   3.1. DEMEX personnel will retrieve, or have retrieved by barge personnel, the T-bars, and cables. The loss of any will be recorded.
   3.2. The cable is trash, however, the t-bars are reusable and to be stowed with magazines.
   3.3. The Explosives Technician will then observe the water level inside each pile & record in logbook.
   3.4. The vessel may resume salvage operations.

Figure 1:

DEMEX Standard Operating Procedures
Loading SWEDe Sub-Sea

Prepared by DEMEX

Good communications with the dive supervisor and the divers/ROV drivers is very important in this procedure. Planning and organization with them should be done well in advance of beginning the loading procedure.

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Issue	1.11
Date	03/04/09

1. Loading SWEDe into Target:
   1.1. Move charges, cables and t-bars to staging area:
      1.1.1. Following all safety practices.
      1.1.2. Ensuring no hot work within 50ft. of critical path.
   1.2. Shackle the cable to T-bar and T-bar to the block or stinger from block. Have Barge lift block to let all twist out of cable.
   1.3. Connect bottom end of cable to SWEDe with shackle.
   1.4. Connect Det-cord to pigtails coming out of top hole of SWEDe and run det-cord out to T/bar taping every so often to support cable. And tape off to T-bar.
   1.5. Lift device off deck to safe swing height then swing over water.
   1.6. Lower device to desired depth to meet diver/ROV.
   1.7. Technician should tend Det-cord over side.
   1.8. Technician should try to keep device from spinning by holding det-cord firm and out at an angle.
   1.9. Diver/ROV will Guide SWEDe to stab into target:
      1.9.1. Diver/ROV will instruct barge to lower device till T-bar settles at top of target.
      1.9.2. As the SWEDe device reaches the severing depth, the diver/ROV will pay special attention in guiding the T-bar so that it rests across the top of the pile.
      1.9.3. Be aware of det-cord as T-bar comes down, Diver/ROV should watch det-cord carefully to ensure it is clear of T-bar as it settles on top of target.
      1.9.4. Diver/ROV Unshackle the T-bar.
2. Repeat process 1 thru 1.9.4 for the next device:
3. Once all charges are set, and the diver/ROV is clear Explosive Technician will follow the correct "Connection and Firing SOP" for situation.
4. The vessel may resume salvage operations.

DEMEX Standard Operating Procedures
Misfire Operations

Prepared by DEMEX

These operations should be mentioned and referenced in your planning sessions.
During misfire operations it is important that the technician stay in control and be aware of all operations going on around him.

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Issue	1.12
Date	02/05/09

1. Upon initiating with shot line or Remote System No detonation or partial Detonation:

   1.1. With shot line No Detonations:

      1.1.1. Try shot box again if still under clearance from NMFS, and if you have warned the barge you are trying to again.

      1.1.2. If still no initiation tries back up shot box and or plug in to socket, count to one, pull out.

      1.1.3. If still no initiations then wait 30 minutes and follow procedures starting section 2.

   1.2. With Remote system No Detonations:

      1.2.1. Explosive Technician will perform status check.

      1.2.2. If status shows interference, ask for radio silence then try to initiate again.

      1.2.3. If status does not clear wait 30 min and follow procedures starting in section 2.

      1.2.4. If status OK, again after checking clearance with barge and NMFS, try to initiate.

      1.2.5. If still no detonation occurs wait 30 minutes then follow procedures in section 2.

   1.3. With either Shot Line or Remote for a Partial Detonation.

      1.3.1. Observe how many targets did not go off.

      1.3.2. Use binoculars to see if any reason for stoppage of series can be observed.

      1.3.3. If the reason for misfire can be seen and poses a threat (i.e. Gas fire, or burning and smoking det cord) Technician will inform vessel of danger and wait till danger is past and 30 min. then follow section 2 procedures.

      1.3.4. If the reason for misfire cannot be seen or is uncertain wait 30 min. then follow section 2 procedures.

1.4. Only if Technician is certain there is no danger and positively knows the reason for shoot out can the 30 minute wait period be dispensed with and allow the vessel to immediately return to target area.

2. Returning to Inspect and Correct Misfire:

2.1. Only if necessary, and a safe personnel transfer is possible, a boat can take the Explosive Technician back to structure alone.

2.2. If Vessel must return to site:

2.2.1. Radio silence will be called and observed until Technician gives clearance.

2.2.2. Technician will be transfer over to structure alone on personnel basket.

2.3. If targets are sub sea then the deck and work area will be cleared of all nonessential personnel.

2.3.1. The Technician will first disconnect any electric detonators, both from shot line/remote, and from det-cord.

2.3.2. If divers are needed to inspect, and fix the problem they may not enter the water or work area until all detonators have been disconnected from prima-cord.

2.4. The technician will check the shot line and/or remote for problems. The Blasters ohmmeter and a voltmeter can be used to test the shot line and remote.

2.5. If shot line or remote is sound and in working order the technician will then check all detonators and the lines between charges for damage.

3. Once problem is found and corrected technician may return to the beginning of normal Blasting operations.

Note: There can be No divers in the water while detonators are capped into a charge.

DEMEX Standard Operating Procedures
SOP Packing SWEDe

Prepared by DEMEX

It is always a good idea to look at weather before you start loading SWEDe's to see if any storms or lightning is in the area.
SWEDe's take a while to load and you should always discuss this with the contractor so the correct amount of time can be planned for packing and loading.

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Issue	1.13
Date	03/04/14

1. Preparation of SWEDe III
   1.1. Make four pigtails according to the size of the device.
      1.1.1. Make sure the pigtails are long enough to extend 16” to 18” above the upper housing plate.
      1.1.2. Place pigtails in device.
      1.1.3. Tape the four pigtails together. See Figure 1
   1.2. Proceed to pack device with C-4 or inserts.
   1.3. It is crucial to hand pack the C-4 as tight as possible until it is flush with back of inserts and fills area behind inserts. See Figure 2
   1.4. If not using inserts must be flush with the outside edge of the explosive chamber.
   1.5. Cover the C-4/inserts by wrapping the ring with 3 or 4 layers of duct tape. See Figure 3
2. Cutting Cables for SWEDe
   2.1. Determine exact severing elevation in order to properly place the SWEDe device.
   2.2. Confirm all measurements with the
      2.2.1. Superintendent,
      2.2.2. Dive Supervisor,
      2.2.3. Project Engineer
      2.2.4. Company Representative.
   2.3. Check all measurements against available pile drawings.
   2.4. When making final adjustments to the cable,
      2.4.1. Make sure all measurements are taken from the ring of explosives, not the end of the cable or the stabbing guides
      2.4.2. Once measurements are confirmed, cut cable to length
      2.4.3. Make an eye in each end of the cable.
      2.4.4. Remember to leave enough cable so that measurement is correct eye to eye.
3. The technician will have a pre dive meeting with Divers/ROV pilot to discuss.
   3.1. Correct rigging
   3.2. Safety measures
   3.3. Best way to pass explosives from surface
   3.4. Placement and tie off
   3.5. Clearing to surface

Figure 1:

Figure 2:

Figure 3:

DEMEX Standard Operating Procedures
Personnel Transfers

Prepared by DEMEX

Always insure that you have the correct safety equipment and that you are wearing or using it correctly.
I.e. Work vest or type 3 flotation vests.
Make sure your landing area is safe.
Some companies have specific rules for working on and transferring to their vessels and platforms.
Follow the laid down procedures of the company you are doing the work for.

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Issue	1.14
Date	03/04/09

1. Transferring between vessel and Structure via walkway:
   1.1. Before going out to structure inform deck foreman (or person of responsibility) you are going out onto structure.
   1.2. Wear work vest, hard hat gloves, steel toe boots and any other required safety equipment.
   1.3. Check that walkway is secured at both ends.
   1.4. Check for trip hazards, mud, and trash.
   1.5. Look out overhead for:
      1.5.1. Hot work on higher deck over landing area.
      1.5.2. Crane swinging load over walkway.
   1.6. Avoid marked danger areas and note and report any that are not marked.
   1.7. Always keep one hand free for yourself.
   1.8. If more than one item needs to be out on structure with you get help or make more than one trip.
   1.9. Always look ahead for hand holds and sturdy foot placement.
2. Transferring via Personnel Basket:
   2.1. Always wear correct floatation device if transferring over water.
   2.2. Observe weather conditions if you feel you cannot safely board or land personnel basket do not attempt.
   2.3. Look out for protruding items .
   2.4. Make sure all baggage and parcels in center of basket.
   2.5. Observe that basket is not overloaded before boarding.
   2.6. Make sure both of your hands are free to hold on side ropes correctly.
   2.7. When landing have one foot sweep back to catch yourself as basket lands.
   2.8. Be aware of baskets rate of decent to be ready incase of hard landing.

3. Transferring From Vessel to Platform via Swing Rope:
   - 3.1. Always wear correct floatation device if transferring over water.
   - 3.2. Inspect rope before using.
   - 3.3. Take weather and seas into consideration.
   - 3.4. If weather is bad rain, lightning and such postpone transfer.
   - 3.5. If seas rough and vessel is having trouble holding station postpone transfer until better conditions prevail.
   - 3.6. Do not transfer until vessel captain gives the word he is ready for transfer.
   - 3.7. If possible observe landing area looking and being prepared for these dangerous situations:
     - 3.7.1. Wet slippery surface to avoid if possible.
     - 3.7.2. Mud, rope, fishing line and any possible trip hazards.
     - 3.7.3. Rusty thin grating that may not support weight!
     - 3.7.4. If landing area on vessel is awash.
   - 3.8. Always Use both hands on rope.
   - 3.9. Baggage and tools can be handed over before or after you are across:
     - 3.9.1. Time rise and fall of vessel to make transfer on rise for soft landing.
     - 3.9.2. If possible have someone spotting on both sides of transfer.

DEMEX Standard Operating Procedures
Preparing Centralizers

Prepared by DEMEX

Be sure to inform the people on shift that you have explosives on deck. Make sure you cordon off your work area as per the vessels requirements before starting to prepare centralizers. Plan work area with deck Forman so as to be sure your critical path and the vessels ongoing work do not cross or interfere with each other.

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Issue	1.15
Date	02/05/09

1. Placing charges in Centralizer
   1.1. Check job scope and inventory to ensure you have correct amount of charges for job.
   1.2. Remove charges from magazine and take them out of boxes.
   1.3. Place charges inside centralizer as close to center as possible.
      1.3.1. Tape, tie and secure charges in place so the do not move.
      1.3.2. Insure det-cord is accessible for tie in.
   1.4. Connect To Surface Det-Cord
      1.4.1. run surface det-cord down through top hole in Centralizer
      1.4.2. Tie in det-cords from charges to the surface det-cord.
2. Cutting and Preparing Cables
   2.1. Determine exact severing elevation in order to properly place the Centralizer.
   2.2. Confirm all measurements with the
      2.2.1. Superintendent,
      2.2.2. Dive Supervisor,
      2.2.3. Project Engineer
      2.2.4. Company Representative.
   2.3.Check all measurements against available pile drawings.
   2.4.When making final adjustments to the cable,
      2.4.1. Make sure all measurements are taken from the ring of explosives, not the end of the cable or the stabbing guides
      2.4.2. Once measurements are confirmed, cut cable to length
      2.4.3. Make an eye in each end of the cable.
      2.4.4. Remember to leave enough cable so that measurement is correct eye to eye.
3. Meeting with Crane Operator, Divers/ROV Driver, and Deck Foreman
   3.1. Correct rigging
   3.2. Safety measures
   3.3. Best way to pass explosives from surface
   3.4. Placement and tie off
   3.5. Clearing to surface

DEMEX Standard Operating Procedures
Weather Safety Considerations

Prepared by DEMEX

Citing for safety considerations for lightning and inclement weather;

1) Institute of Makers of Explosives, Safety Library Publication NO. 4, Warnings and Instructions for Consumers in Transporting, Storing, Handling and Using Explosive Materials (Copyright March 1992):
(2) Blaster's Handbook, 16th Edition, Prepared by the Explosives Products Division, E.I. du Pont de Nemours & Co. (Inc.), 1977, page 177
(3) Explosives and Demolitions, Department of the Army Field Manual, FM 5-25, May 1967, page 71:
(4) Practical Blasting Fundamentals Level 1, Blasting Safety Lesson One, I.S.E.E. Certificate Program, International Society of Explosives Engineers, page 1-9:
(5) Handbook of Electric Blasting, Atlas Powder Company, Copyright 1985, page 42:
(6) Guidelines for the Safe Use of Explosives Underwater, Marine Technology Directorate, MTD Publication 96/101. page 18:
(7) WCB Blasters' Handbook, The Workers' Compensation Board of British Columbia, 26 March 1990, page 41:
(8) Rules and Regulations of the State of Louisiana Pertaining to Explosives, LAC 55:I.1521 General Requirements, page 53:
(9) Code of Federal Regulations, OSHA, Labor 29 Part 1910.109 (vii):

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Issue	1.16
Date	03/04/14

NOTE Remember lightning is the single most unpreventable danger to explosives from weather. The Lead Technician on the job should be the only and the final authority on if work should continue or even start in inclement weather. The only way to be safe is to not have it out in a situation where there is lightning in the area. It only takes once!

Be sure to watch weather carefully when explosives are out on deck, and pick up explosives if possible if the nearby area becomes active. If explosives cannot be put up, (i.e. they are loaded in targets already) then evacuate area where charges are until lightning desists.

1. Squalls, Fronts, and Electrical Storms
   - 1.1. A squall can come up fast and include high winds, lightening, and rain
     - 1.1.1. No work out of a basket should be performed in high winds (30+ mph)
     - 1.1.2. No explosives should be exposed while lightning is in area (Technician's discretion)
     - 1.1.3. Rain is so thick the work area can not be seen from deck then explosive operations should be postponed (visibility 50 ft.)
   - 1.2. Fronts usually carry winds, high seas, rain, and lightning.
     - 1.2.1. No work out of a basket should be performed in high winds (30+ mph)
     - 1.2.2. In high seas personnel transfers and basket work become dangerous. Technicians should use their discretion on weather it is safe enough to commit to any actions.
     - 1.2.3. No explosives should be exposed while lightning is in area (Technician's discretion)
     - 1.2.4. Rain is so thick the work area can not be seen from deck then explosive operations should be postponed (visibility 50 ft.)
   - 1.3. No explosive work is done during an electric Storm
     - 1.3.1. While lightning is in the area no explosives will be brought out on to deck
     - 1.3.2. If explosives are already loaded the tech will inform vessel of dangers and ask it to move a safe distance away.
     - 1.3.3. No detonators will be brought out while there is lightning in the area, or in sight.

2. Tropical Storms & Hurricanes

2.1. DEMEX personnel will follow "Offshore Hurricane Procedures". STAGE 1, and confirmation of Stage two before coming in.

2.2. Running from storms

2.2.1. If vessel with explosives is running from storm to a port

2.2.1.1.The vessel must arrange for emergency off load of explosives thru DEMEX and USCG

2.2.1.2.The Vessel must not arrive at dock without notifying and receiving permission to do so with USCG.

2.2.2. If vessel is running but not going into port then at must insure that Explosives Magazines are securely chained down

Riding out storm in protected waters

2.2.3. The vessel must make sure the explosives are chained down and secure.

2.2.4. If storm changes course and vessel is forced in to dock. It must still inform DEMEX and the USCG and receive an emergency waiver to dock.

2.3. If explosives magazine is lost overboard

2.3.1. DEMEX should be informed immediately!

2.3.2. The position and circumstances should be noted and forwarded to DEMEX.

Facts About Lightning
(http://www.fema.gov/hazard/thunderstorm/index.shtm)

- Lightning's unpredictability increases the risk to individuals and property.
- Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall.
- "Heat lightning" is actually lightning from a thunderstorm too far away for thunder to be heard. However, the storm may be moving in your direction!
- Most lightning deaths and injuries occur when people are caught outdoors in the summer months during the afternoon and evening.
- Your chances of being struck by lightning are estimated to be 1 in 600,000, but could be reduced even further by following safety precautions.
- Lightning strike victims carry no electrical charge and should be attended to immediately.

DEMEX Standard Operating Procedures
Connecting Det-Cord to Charge

Prepared by DEMEX

Be sure to follow referenced figures and pictures at end of SOP.

Always use correct DEMEX approved cutter or a knife to cut Det cord.

Remember when working with det-cord to keep it out of pinch points and protect it from abrasion at key points.

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Issue	1.17
Date	03/24/14

1. Inspection of Det-Cord:
   1.1. Inspect det-cord on the charge for cuts and abrasions.
      1.1.1. Repair any cuts or abrasions with electric tape.
      1.1.2. If cut is serious enough to compromise continuity make sure you connect to det cord below (closer to charge) than the cut with transfer det-cord.
   1.2. Inspect the det-cord on spool and insure spool and det cord are not damaged.
      1.2.1. Check for factory splice, if one then resplice with square knot and tape.
      1.2.2. Check any previous square knot splices to see if correct.
2. Inspection of charge: (figure 1)
   2.1. Check top and bottom of charge for damaged areas or voids.
   2.2. Check rope to insure it is secure and undamaged.
3. Tying in the Det-Cord:
   3.1. When using a square knot to connect det-cord from the charge and from the spool:
      3.1.1. The dead leads coming off of the knot should be at least 6 inches long. (Figure 2)
      3.1.2. The entire knot and leads all the way to the charge should be taped tightly. (Figure 3)
   3.2. When using a clove hitch to connect det-cord from charge and from the spool:
      3.2.1. Tie a clove hitch around the base of det-cord on the top of the charge.(Figure 4) future
      3.2.2. Make sure the clove hitch is pressed down against the charge and tight on the det-cord.
      3.2.3. Tape the det-cord from the charge over the clove hitch and 3 inches past the lead ends from the knot and the charge.(Figure 5) future
   3.3. When putting two charges together end to end:
      3.3.1. The det-cord from the spool can be attached to the top charge using the square knot or clove hitch method.
      3.3.2. The det-cord can also be attached to the bottom charge then run up the side to the det-cord at the top of the two charges.
         3.3.2.1.Tape the charge from bottom to top with duct tape also covering the det-cord.
         3.3.2.2.If fit is an issue do not attach det cord to bottom charge just insure good contact with top change.
         3.3.2.3.The Det-cord should be taped tightly at both ends.

3.4. When tying in to several charges set next to each other:

3.4.1. In this situation you can either attach with a clove hitch or a square knot.

3.4.2. It is a good practice to make extensions to the det-cord on all the charges so that each is long enough to come together for the connection.

3.4.3. The extensions should be brought together parallel with the main line and taped together from 8 inches blow connecting knot to 3 inches past top of connection leads tightly.

3.5. When tying into a charge that has badly damaged or no det-cord: * Only use a damaged charge if there is no other alternative*

3.5.1. Remove 4 to 6 inches of the cardboard tubing on the side of the charge.

3.5.2. From the top of charge to 4 inches below the det-cord wraps should be tightly wrapped in duct tape.

3.5.3. Wrap the det-cord in a layered pyramid fashion around the outside of the charge:

3.5.3.1. The bottom layer should be 3 to 4 inches wide.

3.5.3.2. There should be one or two strands of det cord coming off of the layers above the charge for at least 24 inches allowing for a good tie into the charge.

3.5.3.3. At least two layers of det-cord should be wrapped.

3.5.3.4. From the top of charge to 4 inches below the det-cord wraps should be tightly wrapped in duct tape.

Figure 1:

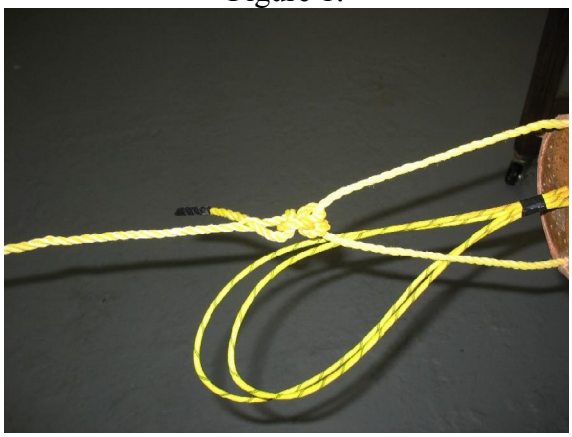


Figure 2:

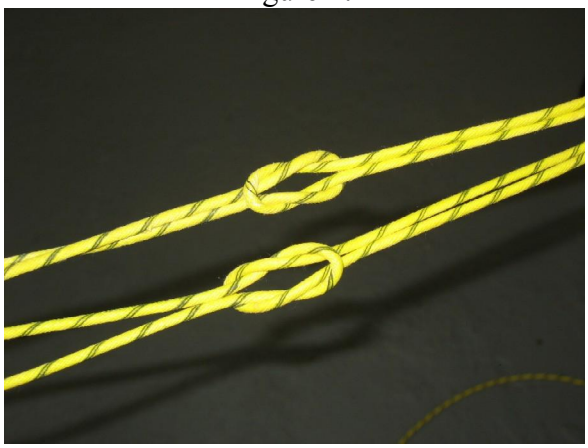
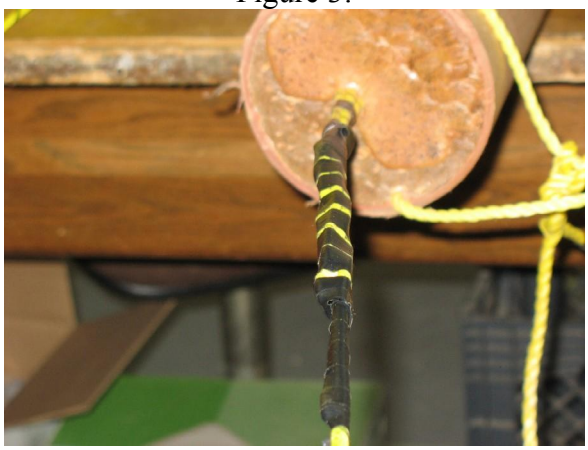


Figure 3:



DEMEX Standard Operating Procedures
Loading Sub-Sea Stubs with Bulk

Prepared by DEMEX

Extra equipment-

Long Board, pallet or a raft depending on # of Sub Sea shots being attempted.
2 or 3 buoys (can be made from one gallon water jugs)
A short length of rubber hose 2 to 3 ft. long
2 x 4 or suitable length of small round stock or angle iron to act as T-bar.

Make sure you have all needed work permits, and JSA's needed before working on deck.

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Issue	1.18
Date	03/04/09

1. Move charges, rope and shot line to staging area:
   1.1. Following all safety practices.
   1.2. Ensuring no hot work within 50ft. of critical path.
2. Prepare rope:
   2.1. Acquire length needed to reach shot depth from top of stub from dive supervisor or Company rep.
      2.1.1. Measure ropes and attach T-bars (wood if available).
         2.1.1.1.Go over placement of t-bar on top of target with dive supervisor.
      2.1.2. Make 8 ft (longer if needed) long length of rope for either side of T-bar for tie offs.
         2.1.2.1. Secure one end of tie offs to each end of t-bar, coil and tape excess
3. Attach rope and Det-cord to Charge:
   3.1. Tie rope into the charge.
   3.2. Tie into charge with Det-cord then tape det-cord to rope every couple of ft. until the T- bar.
   3.3. Det-cord should be taped to rope at least once above T-bar.
   3.4. When possible it is a good practice to put an abrasion protector (rubber hose or extra tape) on det-cord and rope from 1 ft below, to 1 ft above, the T-bar.
4. Have a quick JSA with diver, dive supervisor, and deck foreman:
   4.1. Go over charge and correct way it should sit in target.
   4.2. Discuss rigging and how it will be transported to dive (i.e. down line).
   4.3. If using crane to lower charge discuss correct movement plan and signals with crane operator.
   4.4. Have diver and dive supervisor look at and suggest rigging they may need.
5. Lower charge to diver:
   5.1. Make sure diver and you know which target you are loading.
   5.2. Explosives tech should tend det-cord and rope unless he has an experienced responsible party to help.
   5.3. If there are any problems immediately notify dive supervisor and diver.
   5.4. Make sure diver knows to communicate any discrepancy I.E.:
      5.4.1. Charge does not fit in stub.
      5.4.2. The charge hits bottom inside stub before T-Bar hits top of Stub. Rope should be tight and T-bar resting on top of target.

7. Once diver has tied of T-bars and all charges loaded the diver will return to surface.
8. Two choices present for initiation:
   8.1. Float the Detonators on a board or buoy with a standard shot line.
      8.1.1. Connect the det cord to the board or floatation device so that different cords from separate charges are not entangled.
      8.1.2. Setup detonation sequence and Follow SOP Connecting Detonators.
      8.1.3. Attach a buoy of some type to either end of separation board (not always a board, pallet, pipe, and raft.
      8.1.4. Rope from charge T-bar to surface is used to anchor separation board and buoys.
   8.2. The other option is to doe the same except float a remote in a protective box instead of shot line.
      8.2.1. As above in 7.1.1
      8.2.2. As above in 7.1.2
      8.2.3. The protective box and floatation is anchored to the separation board and the anchor rope from the charge or charges will keep the remote floating above charge until detonation.
9. SEE and Follow SOP Blasting Operations.

DEMEX Standard Operating Procedures
Demobilization Actions and Checklist

Prepared by DEMEX

This SOP is ment to be a guide and reminder these actions are complete before leaving a job!

(A) - Refer to JSA by tasks “Load, Lift, and Stow Magazines”

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Issue	1.19
Date	03/25/09

After all explosive work has been finished for the job:

1. A final inventory should be made:
   1.1. Take inventory of all explosives, tools, detonators and magazines.
   1.2. Make sure you mark inventory on sheet in door of magazine.
   1.3. Check all locks to ensure they are locked.
   1.4. Put inventory in your logbook.
   1.5. Send inventory to Jan and include any:
      1.5.1. Left over cable.
      1.5.2. Count signs and placards.
      1.5.3. Recovered or unused T-bars.
      1.5.4. Centralizers or SWEDe's.
      1.5.5. Separate inventory by what box, or magazine, it is in.
      1.5.6. Need to specify if a magazine has no explosives in it.
         1.5.6.1. If so take signs off of it.
         1.5.6.2. Mark magazine with tape on door as "empty return to DEMEX".
         1.5.6.3.Place welding rod in door of empty box to hold door close.
   1.6. Give inventory of all equipment that needs to go in to clerk.
2. Dunnage (or brace) the boxes and explosives in the magazine: (A)
   2.1. Ensure with bracing that the boxes cannot move around. (up, down, and side to side)
   2.2. Nail any boards all the way in that might have shifting weight on them for added strength.
   2.3. Clean out any loose boards, nails, or paper.
3. Check all daily sheets and ensure they are signed.
4. Check with barge clerk, or controlling body, to confirm transportation arrangements for personnel and for the explosives if separate.
5. Check and pack up your remote, shooting machine, and other personal assigned gear to make sure you have all of it and it is in working order.

7. When possible notify the office when and where you are coming in and what transportation arrangements have been made for you:
   7.1. Are you coming in at a different port than you went out.
   7.2. If you have a ride to your vehicle or if the office needs to arrange a hot shot.
8. While driving home from offshore be sure to:
   8.1. Drive safely.
   8.2. Stop and get a room if sleepy or sea sick.

DEMEX Standard Operating Procedures
Capping-In to Det-cord

Prepared by DEMEX

- References:
  - SOP 1.1 Blasting Operations
  - Figure one page 3 is from Warnings and Instructions for transporting, storing, handling, and using explosive materials pamphlet sent in det cord box from manufacturer.

- DEMEX SOP's are meant to be a guide and are subject to change to meet the requirements of the job.

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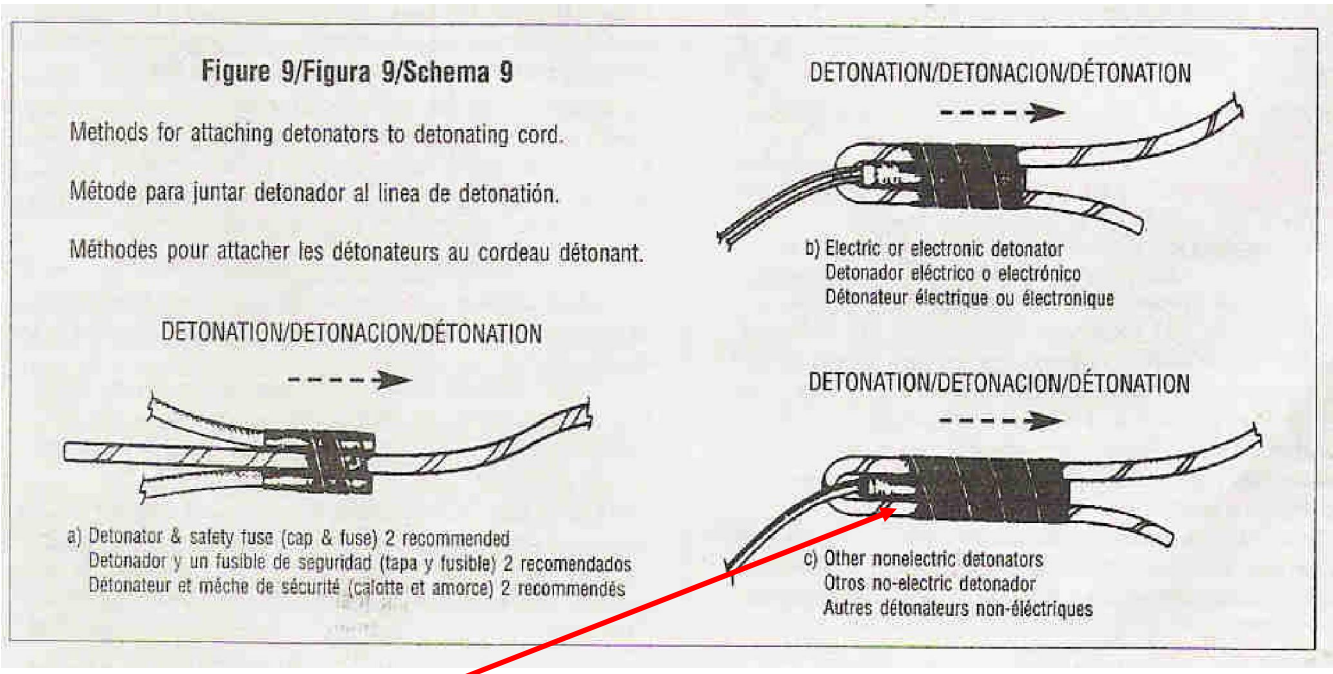
	Reviewer:
Issue	1.20
Date	03/26/09

1. When capping in to Det-cord with Non-electric detonator:
   1.1. The end of the det-cord should be folded back on itself to make a loop. (See Figure one)
   1.2. Make sure the loop makes a tail long enough to be 6 to 8 inches longer than the detonator.
   1.3. Place the detonator within the loop parallel to the main line.
   1.4. The shock tube end toward the back of the loop and the detonating end in the direction of the main line.
   1.5. Then tape the loop from behind the detonator over the shock tube and the detonator to the end of the lead end.
   1.6. The tape and loop lead end should extend 6 to 8 inches past the end of the detonator.
   1.7. Then the shock tube can either:
      1.7.1. Hook the shock tube clip to de-cord below the detonator on previous targets initiation point.
      1.7.2. Or it can be cut at the end and inserted into a shock tube initiation device:
         1.7.2.1. I.E.. A cobra,
         1.7.2.2. Or duel use remote receiver.
2. When capping in to the Det-cord with Non-electric detonator:
   2.1. The end of the det-cord should be folded back on itself to make a loop.
   2.2. Make sure the loop makes a tale long enough to be 6 to 8 inches longer than the detonator.
   2.3. Place the detonator within the loop parallel to the main line.
   2.4. The electric leads end toward the end of the loop and the detonating end in the direction of the main line.
   2.5. Then tape the loop from behind the detonator over the electric leads and the detonator to the lead end of the det-cord.
   2.6. The tape and loop lead end should extend 6 to 8 inches past the end of the detonator.
   2.7. Be sure to ask for radio silence before connecting the detonator to the shot line or remote.
   2.8. The detonator should be hooked to the shot line or remote before capping into the det-cord.
   2.9. Remote should be on before hooking up detonator to it.
3. Once capped in move on to SOP 1.1 Blasting Operations.

*Never cap in to any det-cord or charge if a diver is in the water without discussing it with the divers beforehand. *

Figure one:



This figure shows the correct placement of detonator on det cord. The tape used to secure the detonator should cover the entire detonator and past the dead end lead to 6 inches beyond the end of the detonator.

DEMEX Standard Operating Procedures
Vessel Outbound Explosives Transfer

Prepared by DEMEX

- Reference: These are not all of the CFR's that apply to MV vessel transport of Hazardous Materials. The vessel Cpt. should be familiar with CFR's and implementing them.
- 49 CFR Part 176 - Carriage by Vessel
  - Subpart B - General Operating Requirements
    - 176.24 Shipping papers
    - 176.30 dangerous cargo manifest
    - 176.36 preservation of records
  - Subpart C - General Handling & Stowage
  - Subpart D - General Segregation Requirements
  - Subpart G - Detailed Requirements for Class 1 Explosive material
    - 176.138 deck stowage
    - 176.146 Segregation from non-hazardous materials
    - 176.164 Fire precautions and firefighting
    - 176.154 Fueling (bunkering).
    - 176.176 Signals
    - 176.182 Conditions for handling on board ship
- ALL CFR CITES WILL BE IN RED ON SOP.
- DEMEX SOP's are meant to be a guide and are subject to change to meet the requirements of the

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Issue	1.21
Date	10/23/09

1 Vessel captain should not take explosives transfer without first receiving and reading copy of USCG permit, Dangerous Cargo Manifest, USCG load plan, and Hazardous Material Bill of Lading.(176.100)

2 Vessel transferring explosives must be the vessel named on the USCG permit and be ready for USCG inspection.

3 The captain listed on the USCG permit must be on vessel and be going out with vessel.

4 The vessel should be at dock facility no later than 15 min prior to time designated on USCG permit and should contact Dock facility one hour prior with location and ETA.

4.1. If vessel is going to be late this information should immediately be communicated to the dock USCG to facilitate necessary changes for permit and logistics. DEMEX must also be notified.

4.2. It is **NOT** permitted to pump fuel or to stop at any other dock with explosive on vessel, (176.154)

4.2.1. vessel should get fuel before the transfer of explosives

4.2.2. Vessel should load any supplies and other equipment before transfer of explosives.

5 No passengers are allowed while transferring explosives, only the vessels crew and explosives personnel are allowed passage on vessel.

6 The vessel should have the following ready and serviceable:

6.1. Bravo flag raised or ready to be raised upon receiving explosives. (176.176)

6.2. Enough chains and binders to put a four point tie down on each box being transferred

6.3. Fire pump primed and one hose run out on deck and one primed on the dock. (176.164)

7 Correct segregation of explosives should be observed, follow instructions of responsible person, USCG personnel, and USCG approved load plan. (176.140)

8 Once the explosives are on the vessel and secured the vessel must leave the dock and cannot return to dock or land based facility with explosives on board without notifying USCG, and receiving a permit or emergency inbound status. (176.190)

9 DEMEX should be notified anytime the explosives are diverted from original destination, and when they are transferred to another vessel offshore. (see contact info on 1st page)

10 Vessel should keep a copy of the USCG permit on file for at least one year. (176.36)

11 If Captain has any questions about the transfer procedures he can call Jan Kenny at 281-246-4738 or ask the USCG and DEMEX personnel at the transfer.

12 All explosive loading operation will be cancelled, or postponed and stopped if already begun, when dangerous weather threatens the area. (i.e. lightning) (176.182)

DEMEX Standard Operating Procedures
Vessel Inbound Explosives Transfer

Prepared by DEMEX

Cites Reference: These are not all of the CFR's that apply to MV vessel transport of Hazardous Materials. The vessel Copt. should be familiar with CFR's and implementing them.

- 49 CFR Part 176 - Carriage by Vessel

- Subpart B - General Operating Requirements
  - 176.24 Shipping papers
  - 176.30 dangerous cargo manifest
  - 176.36 preservation of records

- Subpart C - General Handling & Stowage

- Subpart D - General Segregation Requirements

- Subpart G - Detailed Requirements for Class 1 Explosive material

  - 176.138 deck stowage
  - 176.146 Segregation from non-hazardous materials
  - 176.164 Fire precautions and firefighting
  - 176.154 Fueling (bunkering).
  - 176.176 Signals
  - 176.182 Conditions for handling on board ship

ALL CFR CITES WILL BE IN RED ON SOP.

DEMEX SOP's are meant to be a guide and are subject to change to meet the requirements of the job.
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Issue	1.22
Date	112/06/09

1 Vessel will not accept explosives magazines and toolboxes without:

1.1. Ensuring it has enough fuel to get to dock since it may not refuel with explosives on deck. (CFR 176.154).

1.2. Receiving a dangerous cargo manifest, USCG permit, and hazardous materials bill of lading. (CFR 176.24)

1.3. Checking the magazines and tool boxes #'s with the permit and insure correct boxes are loaded.

1.4. Ensure the boxes are correctly spaced and loaded as per USCG load plan with correct separations.(CFR 16.138; 176.146; sub part D)

1.5. Flying the Bravo (or red) flag.

2 The vessel captain should insure that:

2.1. The explosives containers are correctly tied down (4 point tie down) on vessel before leaving for the dock.

2.2. Contact dock with ETA.

2.3. Vessel arrives on time (not more that 10 min before or after arrival time) on USCG permit.

3 The vessel will not come to dock until called in by USCG or the dock facility with USCG approval.

4 The Truck should be at dock and under the crane ready to tie down magazines as they are loaded.

5 The Dock facility should:

5.1. Be shut down to any other traffic until explosives load is done.

5.2. Blow siren and put on warning light as vessel approaches dock.

5.3. Comply with all provision in its USCG approved plan for explosives transfers.

5.4. DEMEX representative will be at dock (sometimes on vessel) to:

5.4.1. Open magazines and toolboxes for USCG inspection.

5.4.2. Repair any loose bracing.

5.4.3. Remove magnetic signs from boxes before they go on road.

6 The Explosives are transferred across dock to truck and tied down.

7 Once the truck leaves the yard or USCG releases them the boat is free to continue about its business.

8 The yard stays closed until the truck & explosives leaves and sounds its siren and turns warning light off when it opens back up.