Main Seminar's Manuscript

The U.A.E. government considers environment protection as one of the cornerstones of the development.

ADNOC as a national oil producing company considers protection of the environment the centerpiece of its Policy.

In a combined effort to protect the environment from any oil spill that might occur in the Gulf Area, ADNOC (Abu Dhabi National Oil Company) and PAJ (Petroleum Association of Japan) have scheduled a joint Oil Spill Training Exercise in ESNAAD Base – Abu Dhabi – U.A.E.

This exercise is designed with two main purposes.
Firstly, to jointly train with the PAJ who have actively supported ADNOC over the last 18 months with ready access to their oil spill equipment.
Secondly, to facilitate the operational testing and exercising of the ADNOC spill response equipment.

In light of the equipment purchases completed over the last year and the establishment of the new spill response center in Mussafah it was deemed timely to focus attention on the commissioning and operability of the Center and new equipment. Much of the benefit from an exercise such as this is derived from the preparatory work leading up to the exercise.

Attendee's of the exercise

Representatives of ADNOC GROUP COMPANIES, PAJ (The Petroleum Association of Japan), FEA (UAE Federal Environmental Agency), ERWDA (Environmental Research and Wild Life Agency) and Port of Mina Zayed attended the exercise. Invitations had also been made to the Coast Guard and the Oilfield Security Police.

The Exercise:

Date: December 16-18, 2002
Place: Abu Dhabi – Mussafah – ESNAAD Base

Objectives of the exercise:

- Familiarize ADNOC Staff with PAJ Oil Combat Equipment newly added to ADNOC's Oil Spill Center.
- Familiarize & train PAJ Staff with ADNOC Shore line Clean Up & Dispersant Application Equipment.
- Confirm readiness as one team in case of emergency.

Focus Point

- Deployment of PAJ Equipment, which ADNOC has direct access to in case of emergency.
- Shore line protection & clean up techniques.
- Aerial Dispersant System demonstration.

Day 1 Preparation

16th December 2002

Time: 08:00 – 11:00

Initial Meeting

Issues discussed:

- Introduction of participants
- Safety session done by HSEQ Division of ESNAAD explaining Safety Procedures during the exercise
- Risk Assessment of the Drill, and analysis explained to all participants.
- Commanding structure discussed and agreed upon.
- Action Plans distributed, a presentation was done by ADNOC and ESNAAD Representatives.
- Vessels involved in the exercise:

  M/V "NMS 301"
  M/V "Warris"

- M/V "NMS 301" is the mother ship with the equipment loaded on board.
- M/V "Warris" is the lead ship.

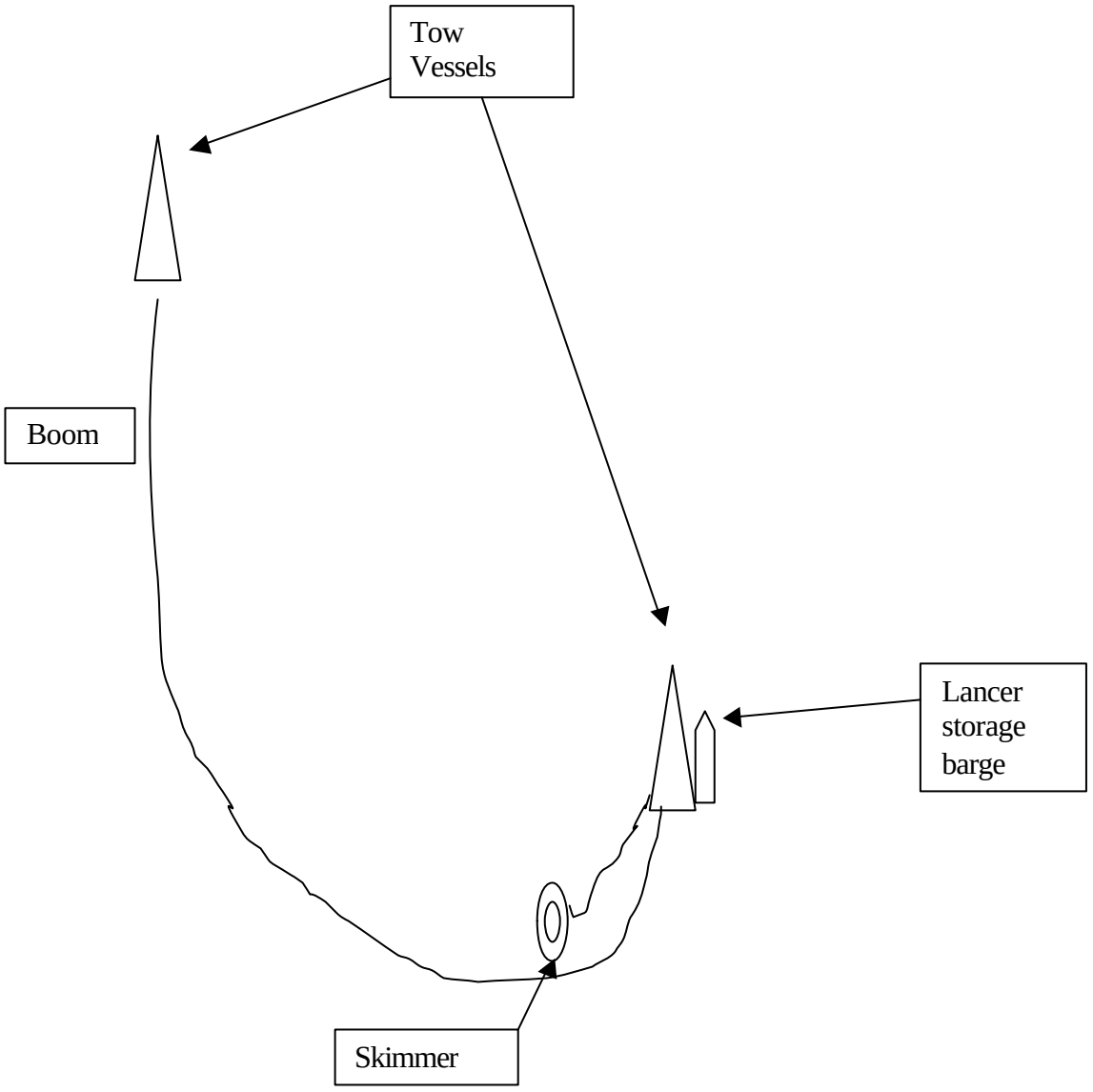
- **Boom deployment procedure:**

  PAJ Staff explained that the two vessels should stand in opposite direction to deploy the boom, but due to area restriction it was suggested that both vessels to be along side

during Boom deployment, and after completion of deployment to proceed in the “J” configuration.

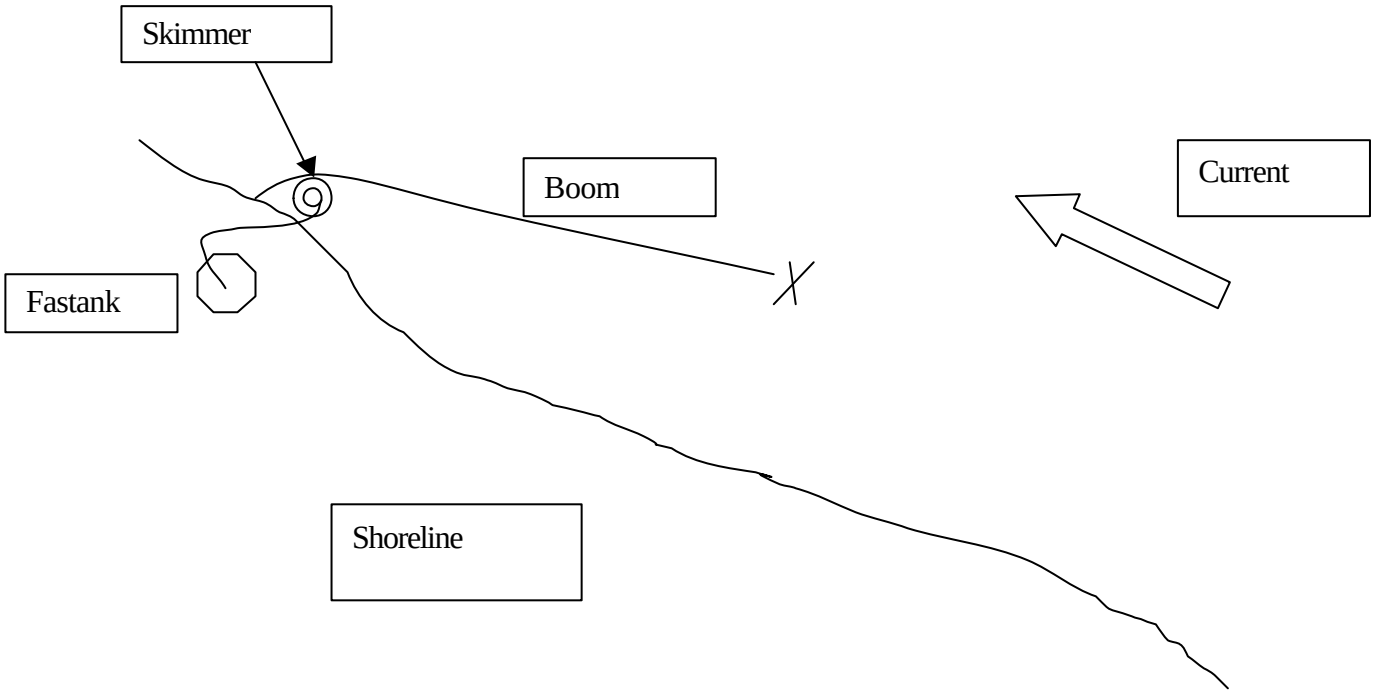
- **deployment of Boom and Skimmer equipment to be done by PAJ staff.**

Exercise Plan Day 2
Proposed Boom and Skimmer Deployment



- **deployment of shoreline equipment to be done by ADNOC staff.**

Exercise Plan Day 3
Shoreline Containment and Recovery Set-up



Time: 13:00 to 15:00

Loading of PAJ Oil Spill Equipment on board M/V "NMS 301".

- 250 meters Hi-Splint Boom Container
- Desmi-250 Skimmer Container

The above equipment loaded on board, checked, tested and made ready by PAJ Staff.

Loading of equipment
(PHOTO)

Day 2 Off Shore exercise:

17th December 2002

Summary of December 17 Activities

An operational briefing was held in ESNAAD conference room to discuss safety issues, command structure and communication procedures. Following the briefing, participants boarded the vessels 'NMS 301' and 'Warris' and deployed 250 meters of Hi-sprint boom immediately offshore of the ESNAAD quay in a "J" -boom configuration. The vessels practiced their ability to hold the boom in position while making turns and sweeps. The PAJ Desmi-250 skimmer was deployed into the apex of the boom and operated. The ADNOC 50 tone Lancer barge was launched from the quayside by a crane and then tied onto the port side of M.V. "NMS 301". The practice continued for approximately 2 hours. The skimmer and boom was then recovered on board and the Lancer barge recovered to shore.

Morning Meeting

Operational briefing conducted at ESNAAD Conference Room.
Issues discussed:

- Safety
- Command Structure
- Communications procedures

Exercise commencing

Boom launching and inflation

Figures Initial Boom Deployment

(PHOTO)

Deployment of boom noted to be slower than the conventional method but very practical in close proximity (restricted areas).
"J" Configuration

Figures

(PHOTO)

Some difficulty in maneuverability noted due to unfamiliarity of the Captains of the two Vessels with the boom's connected.
Lancer barge towed to mother vessel NMS 301.

Figures Launching of 50 t Lancer Barge

(PHOTO)

Lancer Barge is proceeding alongside M.V. "NMS 301" ready to receive the recovered oil.

Figures

Launching of the skimmer for Oil Recovery Process.

Figures Sweeping Operation

(PHOTO)

Equipment Recovery

Oil Recovery Exercise by boats with PAJ equipment completed successfully.

Day 3 The Exercise consists of 2 parts:

- Beach Containment and Recovery Set Up Exercise.
- Aerial Exercise.

Summary of December 18 Activities

An operational briefing was held in ESNAAD conference room. A description of the beach/shore cleanup operations was presented. Participants then proceeded to the beach where ADNOC owned equipment was unloaded. A shoreline containment and recovery system was deployed from the beach. This included erection of a temporary storage tank (Fastank), a small disc skimmer (Komara 20K) and a beach vacuum system.

Beach Oil Containment & Recovery Set up

Figures

Equipment used with exercise:

Beach Equipment

Figures

Figures Deployment of Shore guardian Boom

(PHOTO)

Figures Vacuum Beach Cleaning System

(PHOTO)

Figures deployment of skimmer

(PHOTO)

Temporary Storage Tank

(PHOTO)

During the exercise a strong current and inability of the boat to maneuver in shallow water hampered the deployment of the shoreline containment system as required.

Due to time limitations, the containment system did not get successfully deployed. This highlighted the problems that can be encountered in a real spill and the need to exercise on a regular basis.

Aerial exercise

In the afternoon a static display of the TC3 aerial spray system was provided. The spray bucket was suspended from a forklift and participants were provided the opportunity to operate the system. Original plans to conduct an actual aerial application using Abu Dhabi Aviation helicopter were cancelled when it was not possible to obtain a permit to fly inside Abu Dhabi, no-fly zone from government authorities.

Operating of dispersant system TC 3.

Dispersant spraying demonstration

- Equipment operated
- Tested to the satisfaction of all participants.

(PHOTO)

Tour around ADNOC Oil Response Center conducted and exercise concluded.

(PHOTO)

Final meeting

A. Exercise Findings

At the completion of each day, a debriefing was held with all participants and the learning points were captured. The key learning points coming out of the exercise are provided below with some additional narrative / explanation.

1. Conduct Spill Response Training On a Routine Basis. There was an overwhelming consensus from the participants on the usefulness of the exercise and the need to conduct spill response training on a regular and routine basis. The training does not need to be overly elaborate or pre-planned. It needs to be done regularly. This is the only way ADNOC can be assured of a trained cadre of response personnel.
2. Additional Equipment for the Spill Centers - A significant inventory of spill equipment has been purchased for the ADNOC spill centers over the last 18 months. However, there is still a need to finish off supplying the oil spill centers with essential equipment such as personal protective equipment (PPE), hand tools and consumable (rope).
3. Make Use of ESNAAD Resources and Capabilities - ESNAAD is very well equipped to play a major support role in oil spill response. They have access to warehousing, logistics equipment and supply vessels. ESNAAD should be incorporated into future plans for responding to oil spills.
4. Emergency Permission to Fly in the vicinity of Abu Dhabi - During the planning for the exercise it was discovered that there is a no-fly zone around the city of Abu Dhabi. A planned aerial dispersant demonstration had to be cancelled, as it was not possible to get permission to fly the helicopter inside the City limits. This issue is problematic for any type of emergency. As a priority, arrangements should be made to get emergency permission to fly when needed.
5. Need a Communications Strategy - The ADNOC Oil Spill Center's communications capabilities were taxed by this small-scale exercise confined to a small area. The Oil spill center is presently limited to 10 handheld VHF radios that are approximately 20 years old. In the event of a large spill, covering a large geographic area, the response would be severely hampered by a lack of adequate communications. This was also a finding during the ADNOC response to Zaynab spill. The ability to effectively communicate in a spill needs to be reviewed and updated.
6. Spill Center Staffing Levels – The lack of adequate staff to bring the spill centers up to an immediate readiness level and provide training to Group Company staff continues to be problematic.
7. Contingency Plan Need to be developed
   Need to work on command system. This includes the identification of team leaders, logistics specialists, communications, procedures and supplies.
   It's vital to have identified an On-scene Coordinator (leader).
   Need to improve the radio/communication system
   With a multi language group it might be beneficial to consider readily understandable signs
8. All area security passes should be available with Oil Spill Team
9. Generate a training video to enhance awareness.
10. Recognize that the configuration has to adjust to existing conditions (weather, maneuvering room).
11. More powerful blower needed for boom inflation.
12. Keep track of trained staff (even if they move).
13. Encourage involvement of other agencies.
14. Medical assistance in a real emergency
15. Regular training needed with ESNAAD and IRSHAD both are marine companies (Vessels owners).

16. Ownership for each piece of equipment: For each piece of equipment that is deployed or operating, an individual should be assigned responsibility for its care and maintenance.
17. A decontamination facility for Personnel is needed.
18. availability of sufficient storage is an issue
19. Develop preferred specifications for vessels to be used in spill response.

The exercise was completed safely with no accidents or incidents. There was a number of positive learning came out of the exercise.

The exercise highlighted:

- The amount of effort and coordination that is required to ensure an effective response.
- The need for a more proactive and concerted effort that is required to insure response preparedness within ADNOC group of companies.

Questions session