

The Prestige Operation Norwegian Lessons Learned

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Abstract

During the accident with M/V Prestige off the Spanish coast in November 2002, several nations were asked to assist the Spanish government with the oil spill combat and clean up operation.

The Norwegian Clean Seas Association for Operating Companies, NOFO, was requested to participate with equipment and personnel for offshore operations.

NOFO, being an organisation for oil spill response on the Norwegian Continental Shelf, has luckily been involved in very few incidents within own area of responsibility. Therefore, given the possibility to participate in oil spill combat like the Prestige Operation, enables the organisation to gain valuable experiences.

In this paper, the request, participation and lessons learned from the Prestige Operation, together with areas suitable for improvement, will be discussed.

Introduction

The Norwegian Clean Seas Association for Operating Companies, NOFO, was requested to participate in the Prestige Operation with two systems.

Luckily, there have been very few incidents on the Norwegian Continental Shelf, hence participating in the Prestige Operations provided fruitful experience.

First, be aware of what NOFO is and what the main purpose of this organisation is.

The Norwegian Clean Seas Association For Operating Companies (NOFO) is an organisation for oil spill recovery established by the operating companies on the Norwegian continental shelf. NOFO ensures that the authorities oil spill recovery requirements are followed. This is undertaken on behalf of and together with, the operating companies and comprises a regime that includes personnel, equipment and vessels.

As NOFO maintain the preparedness on the Norwegian Continental Shelf, deploying equipment outside this area will in principle weaken own ability and the Norwegian Authorities must approve such reduction in preparedness.

Furthermore, the General Assembly is NOFO's governing body in which all member companies are represented. If requested to participate in an operation outside the Norwegian Continental Shelf, the General Assembly must concur.

NOFO was requested to assist with vessels and equipment. The Spanish authorities made the request to the Norwegian Pollution Control Authorities who in turn contacted NOFO.

An agreement was reached, and two NOFO systems were mobilised. The systems were placed under SASEMAR control, one in the end of November 2002 and one in mid December 2002.

Both systems participated in the cleanup operations up to the middle of February 2003.

For a period the systems was handed over to the French authorities and assisted in the clean up in the Bay of Biscay.

Both systems participated in the operations until mid February 2003.

Cleaning of the vessels and equipment took until the end of March and must have been an extremely expensive operation.

Employment

What is a NOFO system?

The recovery equipment **and** the vessels are designated a “NOFO System”.

Designated Oil Recovery Vessels are supply vessels classified as such and equipped according to NOFO’s standard for oil recovery vessels.

The vessels are adapted in accordance with NOFO’s standardised oil recovery equipment and have about 1000 m³ loading capacity for recovered oil. The standardisation of oil recovery vessels contributes greatly to reducing response times and makes more flexible access to vessels.

In addition, there are certain minimum requirements related to towing vessels.

NOFO recovered in total upward of 2000 m³, whereof 800 m³ were recovered during the first week of the operation.

The standard NOFO equipment was employed.

NOFO has a total of 14 oil spill recovery systems shared between the bases. Each system consists of

- 1 Transrec 350 with weir skimmer
- 400 meters boom lengths
- 1 designated oil recovery vessel
- 1 towing vessel
- 1 spare parts container.

In addition, NOFO has nine Hi-Wax skimmers shared between bases in areas where oil with a high wax content is produced.

The NOFO systems and resources are stored at different bases along the coast, from Stavanger in the south to Hammerfest in the north.

The number of systems available at any of the five NOFO bases is based on the activity and therefore the potential risk in the area.

In addition, one system is deployed afloat at Haltenbanken, two at the Troll area and one at the Balder/Jotun area, forming Area Preparedness.

NOFO has standardised the oil spill recovery equipment so that it is identical at all oil spill recovery bases.

Lessons Learned

As for the lessons learned, these are related to both the operation itself and the use of equipment.

Operations

Lessons learned to the operation itself covers command relationships, tactical direction and use of resources and logistic support.

Chain of Command

While under Spanish command, orders were issued from SASEMAR through Finisterre. Orders were issued directly to the individual vessel, hence operating as single recovery units. Most of the communication was considered a one-way communication.

Logistics were also a challenge - long lines of communications and, of course, the language barrier is not always easy to climb.

The provision of an agent for the vessel did, however, help the logistics.

When transferred to the French Authorities in early January, the vessels were formed into groups with an On-Scene Commander (OSC) in directly, two-way communication with the vessels. This proved an efficient and well-received modus operandi, which at least the Norwegian participants found fruitful.

The OSC also assisted with the logistics by forwarding requests through their system to the proper agency on shore.

Tactical Directions

The tactical directions were both those directed from the authorities and those conducted autonomously.

When the units knew there were oil slicks in the coastal waters, it was quite frustrating being directed to the wreck position knowing that a much better job could have been conducted elsewhere. Anyway, this was the decision of the Command Authorities, and was conducted as long as the weather did not pose a safety threat to the vessel.

The first contact made with oil was drifting slicks of up to 50-cm thickness. These slicks were recovered by using the Hi-Wax skimmer. Due to the thickness, recovery operations could be performed using the floating umbilical as a substitute for the boom.

Assisting local fishing-/workboats proved a very efficient way of recovering oil slicks of moderate size spread over a large area.

Operational experiences - conclusions

The operational experiences could briefly be summarised as such:

- Close and timely communication with the command agency, including two way communication, is necessary in order to conduct operation in an effective way
- It is necessary to mobilise necessary units and resources as early as possible
- Early employment gives better results as the oil spill deteriorates over time
- Efficient use of equipment should be self-evident. The sensibility in employing effective oil recovery vessels with heavy equipment as patrol vessels 150 nautical miles off the coast, when a large amount of oil was drifting in close proximity of land, could be questioned
- A Logistic Support organisation must be in-place.

Especially the quick reaction to an oil spill situation is important.

Equipment

The equipment employed during the operation gained NOFO quite a bit of experience as well. This equipment covered both vessels and equipment for mechanical recovery, including the challenges related to offloading recovered oil and keeping personnel, equipment and vessels clean.

Vessels

The four vessels employed were the Oil Recovery vessels Far Scout and Normand Draupne, and the towing vessels Boa Siw and Bamse.

Each Oil Recovery vessel carried the heavy equipment and had a storage capacity of at least 1.000 m³.

The Towing vessels were professional tugs, very strong and equipped for offshore operations.

NOFOs own boom was used only a few times. At one occasion, the slick was too big to be recovered by use of the skimmer alone and would have been lost it in the dark.

Transrec

The Transrec, constructed both for Transfer and Recovery operations (hence the name) was employed during the entire operation, and proved its right to existence. It is rather old - we are in the process of replacing this one with a more timely model - but proved efficient for mechanical oil recovery.

In order to operate over prolonged periods, the ability to perform field repairs is an absolute necessity, as strain on the equipment can influence the endurance in the field. Thanks to skilled operators, repairs of the for example the Transrec hose were completed in the field.

Flotsam kept clogging up the filter on the loading line. As the emulsion became more viscous with time and contained more debris, the use of filters had to be abandoned.

Skimmer

Efficiency of the NOFO equipment changed during the operation. In the early stages the recovery rate was approximately 60 m³/hrs, while later in the operation, when the drifting slicks had collected large quantities of debris, the rate was reduced considerably.

Offloading

Offloading recovered oil into a tank vessel was a challenge. Due to the viscosity of the oil, the offloading was done by employing three different pumping systems: The oil recovery pumps, the drilling mud pumps and portable emergency pumps, assisted by a portable heating system and water injection.

Cleaning

Cleaning personnel and equipment were necessary.

This is essential during an operation, both for the safety of own personnel but also to avoid the oil contaminated areas to spread all over the vessel.

It seemed like the oil was “alive”, and even if the personnel onboard the vessels tried to establish borders between the clean and dirty zones, the dirty zone came closer and closer to the vessel’s quarters. Cleaning the personnel was a challenge as well, as most of the “recommended” soap did not work. Using ordinary olive oil, on the other hand, proved quite efficient, and there were no problems in obtaining this item!

Equipment employed - conclusions

The conclusion regarding the use of NOFO equipment is summarised as follows:

- NOFO systems, mechanical recovery, did work
- Employing Hi-Wax skimmer was successful, but:
 - The equipment was close to overload
 - Repairs in the field was necessary
 - Equipment can be improved
- Employing NOFO equipment in hard conditions requires skilled operators
- Oil spill recovery of heavy oil creates challenges related to the offloading process
- Logistics support, spare parts and the possibility for repairs in the field is a challenge
- Cleaning the personnel and equipment during the operation is important

The most important lesson learned was that mechanical recovery and the NOFO equipment did work, even if not primarily designed for such oil as the Prestige oil!

Beach Cleaning

Even if NOFO did not participate in the Beach Cleaning operation, observers from the NOFO Contingency Groups did visit the areas.

The impression was, however, that there is an enormous challenge in recovering stranded oil slicks, and lot of resources, including personnel, must be employed for a long time.

Conclusion

As an overall conclusion, NOFO Lessons Learned can be summarised as follows:

- It is important to establish a clear Chain of Command!
- It is imperative to mobilise as early as possible - hesitating may prove expensive!
- It is necessary to mobilise sufficient resources - demobilising excess forces is easy!
- There should be a Concentration of Forces in order to recover oil spill at sea!

A lot of experience was gained during the employment in the Prestige Operation, and a lot of areas for improvement were discovered.

NOFO has taken these challenges, and is now into the process of up-grading the equipment, hence improving our capability to carry out oil spill recovery operations in a safe, efficient and self-contained way.

Acknowledgements:

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References:

All material used in this presentation is from the NOFO archives.