

VOLUNTEERS AND OIL SPILLS – A TECHNICAL PERSPECTIVE

Andrew Tucker, Senior Technical Adviser; Dr Michael O'Brien, Technical Team Manager;
The International Tanker Owners Pollution Federation (ITOPF)

Abstract

Many oil spill cases around the world have experienced significant volunteer turnouts. One of the most recent was the HEBEI SPIRIT incident in South Korea in 2007, where 10,500 tonnes of crude oil were spilled, 400km of shoreline were contaminated and 1.2 million volunteers came to help. The sheer number of people involved in such cases can, however, create extra issues that add to the core work of cleaning up the spill. The use of volunteers in oil spills has been far from consistent and there have been many incidents where volunteers did not attend, were actively discouraged or even prohibited from participating.

This paper reviews the use of volunteers in oil spills based on ITOPF experience and describes some of the factors which may influence volunteer turnout, such as management attitudes towards volunteers and the role of the media.

Introduction

The frequency of major ship-source oil spills has fallen dramatically over past decades with improvements in ship design, operation and management, as well as increased safety measures. However, accidents do still occur and can generate large public and media attention, as witnessed during the 2010 Deepwater Horizon incident. One unpredictable feature of oil spills around the world is the occasional desire for individuals to volunteer to assist with clean-up. These volunteers typically present themselves on site, each with different expectations, requirements and varying levels of experience, but all will ultimately wish to play a role in the response. Dealing with volunteers is a challenge that the spill

management must meet, especially considering the ever-growing need to deal appropriately with public perception and media. This paper considers issues that arise with volunteers, so that spill managers might better prepare for the associated challenges and potential benefits.

Around the world, responsibility for managing volunteers can vary, for example, between private contractors, local authorities or national governments. Regardless of who is running the incident response, volunteer effort will only be successful if consideration is made in advance regarding what type of volunteers are likely to turn up, how they should be trained and kept safe, how they should be managed and controlled, and ultimately who will finance the costs related to their involvement. Although they work ‘for free’, there are special needs and costs which must be considered if their involvement is to be safe and meaningful.

Volunteer Types

It is well understood in the oil spill community that the effectiveness of the response depends more on the effectiveness of management of people than the provision of large amounts of equipment and physical resources. For this reason, dealing with the human element is particularly important.

A volunteer is an individual who is willing to contribute his/her time or services in order to achieve an objective, often beyond the confines of his or her normal responsibilities and paid employment. Two basic categories include:

- ‘Spontaneous’ – skilled or unskilled volunteers who simply arrive on site in the days and weeks following an incident, often not usually affiliated to any specific organisation. They can be local, or travel from further afield, even internationally.
- ‘Affiliated’ – people from ‘recognised’ organisations, many with some degree of pre-training, often from animal rescue organisations, but also church groups, company groups, youth and school groups, and charity groups. They are more likely to have

some form of leadership hierarchy in place, as well as insurance cover.

A further classification, based on the skills the individuals bring with them, is as follows:

- ‘Professional’ – volunteers with transferable, specialist skills. These include veterinarians, medical workers (such as nurses or doctors), accountants (to record expenditures), lawyers (to assist with claims), or computer (IT) professionals.
- ‘Unskilled’ – volunteers with no specialist skills, but who are offering their time and are willing to be trained to undertake whatever tasks assigned to them.

Both types of volunteers are commonly seen during oil spills, but the majority tend to be treated as ‘unskilled’, due to the difficulty in recognising and testing skills and channelling these to appropriate tasks. Ideally, it would be productive to identify in advance what skills a volunteer may have, and to put these to the most relevant use. This might be achieved if volunteers were to register before coming to site. In situations where volunteers are actively recruited, it may be beneficial to “advertise” the task that volunteers may be asked to undertake. Efforts have been made to maintain databases of volunteer types, independent of specific oil spills, but they are difficult to keep current and accurate. Web-based solutions involving spill-related sign-up sheets may be worth investigating further. These issues are much less problematic when ‘affiliated’ volunteers are used.

To Use Or Not To Use.

Volunteers are potentially a valuable, flexible workforce which, if managed appropriately, can free up professional contractors and specialist workers. They may also have valuable local knowledge and the trust of local communities. Using them may bolster public relations as they are viewed sympathetically by the media and local communities.

There are also a number of challenges that must be considered before decisions are made to either accept or dissuade volunteers. These challenges can include:

Ability to work

It is a fact that volunteers come with a variety of skills, ages, and physical conditions. In the extreme, volunteers may expect to be involved in clean-up of bulk oil. In reality however, this is physically demanding work often involving heavy lifting, walking/standing for long periods of time, working in exposed conditions (winds, cold, rain), loose terrain, slippery underfoot conditions (oil, water, algae), sometimes with air quality issues. Furthermore, they must also possess good eyesight and hearing to enable them to work safely as part of a team and remain aware of on-site dangers (machinery, tides, other workers).

Keeping them focused

Volunteers are often either ‘over‘ or ‘under-qualified’ for the tasks assigned to them. ‘Overqualified’ individuals may quickly become bored with their relatively simple tasks, tempting them to stray outside their role. They may feel that they ‘know best’ and disregard the proscribed procedures or even shift to other work that they feel is more appropriate. This can result in inadvertent environmental damage or delays to the planned work. Conversely, it is also important that volunteers are not given tasks for which they are ‘under-qualified’. This is particularly important when using volunteers in wildlife rehabilitation, as handling procedures and cleaning protocols have advanced so much that a minimum level of training is required. In fact, in many countries, only professionals or pre-trained workers (sometimes called “para-professionals”) are incorporated into wildlife rehabilitation efforts.

Keeping them motivated

It is a challenge to maintain motivation for volunteers, particularly in adverse weather conditions, or when the oil spill affects individuals emotionally. Non-professionals can be emotionally overcome by a large oil spill, having no similar terms-of-reference with which to compare it. The perceived environmental impact, the progress of the response, and the

technically-based end-points are easily misunderstood. All of these factors can lead to a loss of motivation, particularly when shorelines are continually re-oiled.

Control of Volunteers

Volunteers are more difficult to control than contracted/employed staff (including services such as the military/civil defence) who can be organised and are more responsive to instructions, especially regarding working times, locations and the ‘quality’ of work.

The hours that volunteers are willing or are able to work, as well as the number of days in total is unlikely to be the same as a paid worker. As described later, there are important cost implications that can arise from short working hours or a short overall working commitment.

Clean-up sites can be busy and dangerous places, and for safety and efficiency reasons, it is important that workers stay in the working area to which they have been assigned. Volunteers are potentially more difficult to keep in place, as they are not held under employment contracts, and they can tend to be interested and curious in the response. Keeping the volunteers focused on their allocated task is, however, key to ensuring quality and effectiveness of the work. However, even when they do stay focused, volunteers will not generally produce the same quality of results as a paid professional due to the greater experience that a professional brings to the spill or gains on-site through a longer working commitment. While it is common for professional workers to work for the whole duration of a response, even if this lasts months, it is rare for volunteers to be able or willing to stay for extended periods.

Liability Issues

Increasingly, spill managers express concern that allowing volunteers onto site opens the door to personal injury claims. The use of disclaimers and liability waivers are beyond the

scope of this paper, although it is likely that their relevance and enforceability will vary greatly across countries. It is worth noting that ‘affiliated’ volunteers may already have insurance as part of their parent organisation, and as such can be viewed as less ‘risky’.

Other issues

Although not a common problem, there have been times when volunteers have been the source of friction with contractors and other local people. This might happen when large numbers of volunteers are utilised and a feeling develops that volunteers are ‘taking over’. Full-time professional staff may have to spend more time managing and supervising volunteers and are thus kept from doing their ‘usual’ work. There is also the possibility that resentment rises amongst employed staff due to a perception that the volunteers are working for free on tasks they themselves may have otherwise been employed to undertake.

Understanding the Likelihood of Volunteer Turnout

No one can accurately predict when and where large numbers of volunteers are going to appear, but the reality is that most oil spills do not actually attract many volunteers. When they do turn up it can be in any number, small or large. A good example is the HEBEI SPIRIT incident in 2007 in which 10,500 tonnes of crude oil was spilled along the western coast of South Korea. A large clean-up operation was mounted, including a significant number of volunteers who travelled from all corners of the country to help. It was estimated that 1,000,000 volunteers turned out within the first 6 weeks! In all, some 1,200,000 volunteers participated, making this the most significant volunteer effort ever seen on an oil spill. The second largest followed the 1997 NAKHODKA incident in Japan in which 6,200 tonnes of fuel oil were spilled and some 500,000 volunteers participated actively in the response. Other large turn-outs of volunteers were recorded during the 2002 PRESTIGE spill in Spain and the 1999 ERIKA incident in France.

Although large oil spills such as these are rare, smaller oil spills do happen more frequently and the likelihood of volunteers arriving to assist is a real possibility. Experience has shown that a few factors may play a role.

The geographic location and spread of the spilled oil

Technically speaking, the geographical spread of spilled oil is a function of the quantity spilled, the characteristics and behaviour of the spilled oil, and the interaction of the oil with wind, waves, and sea currents. Up to a point, the further offshore the oil is spilled, the greater is the potential for the oil to spread and to affect much greater lengths of coastline. Interestingly, this was a key common denominator with the NAKHODKA, ERIKA, PRESTIGE, and HEBEI SPIRIT cases, all of which saw large turnouts of volunteers.

The media

It is common that the initial stages of an incident coincide with both the peak media coverage and the arrival of the majority of volunteers. The role of the media in raising the profile of the incident is a significant factor governing how many people are likely to become aware of the incident and how many may come as volunteers.

Increasingly, it is not just the traditional media, but also the newer 'social media' that play a role in motivating the public. New technology means that very quickly the public can receive much more information about an incident than before. On occasions, they may 'drum up' that special mix of sympathy and national/regional pride that motivates people to volunteer. Websites such as Facebook, YouTube, and Twitter quickly become populated with pictures, videos and messages from the public showing aspects of an incident.

Public perception on the appropriate role of the government/authorities responsibilities

Countries around the world differ in terms of public perception of the appropriate role of government in public works. In some cases there are higher expectations for government

intervention, in others, higher expectations for private sector solutions. In the United States, for example, responsibilities for oil spill clean-up lie more firmly with the private sector than in most other countries. The government, of course, plays an oversight role. The fact that US spills are therefore addressed by professional oil spill response organisations (OSROs) has resulted in a situation where volunteers tend to play a lesser role in spills than in other countries. This is an interesting development, considering that volunteering in other sectors (e.g. after natural disasters) is particularly strong in the US. The point is demonstrated well with the 2007 COSCO BUSAN incident in San Francisco bay. The proximity of the incident to a large city, and the influence of the media resulted in a large volunteer turnout for a spill which was relatively small in terms of the volume of oil spilled and the low in terms of the distribution of oil along the shoreline. However many of these volunteers were turned away because they did not have the appropriate health and safety training and associated certification.

In other countries, government authorities have greater practical responsibility for organising and carrying out the clean-up of ship-source oil spills, using either their own resources or those of private contractors. In these situations, volunteers may be welcomed, or even actively encouraged. This was seen, for example, during the HEBEI SPIRIT incident, where the Korean government appealed to the community spirit and national pride of the people to assist with clean-up, irrespective of their skills, age or numbers. This call, coupled with the media coverage and a population already used to the concept of national service (e.g. military) resulted in the phenomenal volunteer turnout already mentioned. For weeks following this appeal, new volunteers came, sometimes as many as 30,000 arriving per day.

In other countries there may be strong perceptions regarding the positive role of government, yet little desire to involve volunteers. In fact, governmental authorities may actively discourage volunteers from the heavier, initial stages of clean-up, and instead look

for safer, cleaner tasks for them be involved with, such as support roles, or secondary cleaning. Following the 2001 BALTIC CARRIER spill in Denmark, for instance, the task of emergency response was given to a combination of military and professional contractors/equipment operators, with no real use of volunteers in the emergency phase. Once the majority of the bulk oil was removed, the local municipality asked for volunteers to help clean-up long stretches of lightly oiled shorelines as part of an annual “grand beach cleaning day”. A short safety and work briefing was given on site in the morning, before the volunteers were issued with basic PPE and simple tools. The effort gave the local population a chance to participate safely and effectively and it allowed the professionals the chance to focus on the heavily impacted shores elsewhere.

In countries where the public has high expectations for the role of government it is common for many people to remain relatively disengaged if they believe the government will take care of everything. In any case, their propensity to help the government ‘for free’ may be greater than to help a private company, especially if it is perceived as being ‘to blame’ or suffers from PR issues. A ‘tipping point’ can, of course, occur when the government appears unable to meet its usual role and volunteerism increases rapidly. This is what is understood to have happened in Japan following the 1995 Kobe earthquake when government services could not respond because they themselves were caught up in the quake. A new volunteer movement arose from the incident as the population realised that it would have to help itself. This carried over to the response to NAKHODKA oil spill nearly 2 years later.

Leadership of Volunteers

Dealing with volunteers can, of course, be a real issue for spill managers, resulting in them often being under-utilised or even prevented from assisting at all. Conversely, if used, they may take up much valuable time of the professionals and hinder operations. In the worst case, they may even hurt themselves, or cause undue environmental damage.

It is essential that experienced teams undertake primary, bulk oil removal to ensure that clean-up is efficient and effective. Adding volunteers has the potential to cause delays as they generally have no oil spill experience, may never have worked on a shoreline before and are unlikely to be aware of the physical and repetitive nature of manual bulk oil clean-up. It can be more difficult to instruct volunteers to carry out tasks in a systematic way in comparison to paid contractors. Enforcing the length of breaks, start and finish times, and the way in which work is done are all more difficult with volunteers. To learn and work effectively volunteers must be willing to listen, take directions, and follow instructions.

One way to regulate the working patterns of volunteers is to mix them in small numbers with professional/military workers. This was done to good effect during the 2003 FU SHAN HAI response along the southern Swedish coast (in the Baltic Sea), where volunteers participated directly in the main operations. Because access to the affected beach was difficult (and needed to be kept clear for the response equipment) checkpoints were set up along the highway turnoffs, allowing the authorities to effectively discourage people from travelling to the beaches themselves. Instead, volunteers were asked to meet at a local community centre, a number of miles inland. There, volunteers were briefed on safety and work practices. After leaving their personal cars at the centre they were transported by bus to site. This approach kept the beach areas free of cars and maximised the effectiveness of the volunteers' time by keeping them on site for the pre-agreed work day.

During the ERIKA response in France, volunteers often travelled considerable distance to the spill site. There was a strong political will to utilise the volunteers, but a healthy reluctance to use them on difficult terrain or during the primary, bulk oil removal stage. Instead, many of the volunteers were allocated to the secondary stage of the clean-up, where the work was less strenuous. The disadvantage with this was that in some cases the 'final' clean-up was mistakenly begun before the primary stages of the clean-up had been

completed. Such overlapping clean-up, done simply to utilise volunteers in less physical work, is far from ideal. In most cases it is safer and more cost effective to use military, government and commercial workers who will follow instructions until told to stop and are most likely already trained in general emergency response procedures.

In many countries, wildlife rehabilitation remains an *ad hoc* business, with some volunteer groups acting almost in a competitive manner. Wildlife rehabilitation and volunteers are two subjects that are not always addressed in contingency plans which can result in assumptions by those managing the overall response that wildlife responders will manage and deal with all volunteers. Therefore, there is considerable merit in addressing both of these issues in a more structured manner, using lessons learned from previous spills.

In some cases management of volunteers rises to crisis level when volunteers have a different opinion on methods or clean-up termination points than the authorities who may even be housing and feeding them. In the 1997 NAKHODKA response, clean-up termination criteria were agreed by the authorities, and the contractors and volunteers were stood down and demobilised. One group of volunteers disagreed with ending the clean-up at that point and the local authority was put in a very difficult position given the media attention.

Training

In many countries professional oil spill responders undergo training before they are considered 'competent' to work. A contracting company may be required to have approved internal management and competency training, use IMO accredited training courses, or undertake specific training schemes such as the 40-hour US Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) course. On top of this, reputable companies will run regular exercises and drills, where staff are given a variety of scenarios to practice.

Most volunteers come to a spill site with unrealistic expectations of what role they

may fulfil. The majority wish to assist, but will have no knowledge of how to actually go about clean-up, and will therefore require a degree of training before they start. Different approaches have been employed to train volunteers. During the 2007 COSCO BUSAN oil spill in California, no-one was allowed on the shore without first attending a four hour training session run by the Environmental Protection Agency (EPA) on safety, clean-up techniques and beach-related hazardous waste operations. In addition some restrictions were made regarding volunteers' physical capability. Certificates were issued to volunteers following the training, which had to be carried whenever on site.

Most training is relatively informal. In cases outside of the US, training is most commonly given to the volunteers *in situ* on their first day. No certification is issued, making it potentially difficult to be sure that all were present during 'training'. Clearly, this approach works most effectively when the volunteer turn out is low, as witnessed during the FU SHAN HAI and the BALTIC CARRIER incidents in Europe. Difficulty arises when volunteer numbers are large, such as in the HEBEI SPIRIT and NAKHODKA cases. Training on the shores, using more experienced supervisors and megaphones/PA systems, was utilised, but it was still impossible to be sure that everyone received even the minimum information.

Health and Safety

The health and safety of all workers, be they volunteers or professionals, is paramount while working on an oil spill. Awareness has increased over the past few decades, but it is still far from consistent across the world. Many developed countries have a 'duty of care' placed upon managers to ensure that their staff are working safely. In many spills a safety manager is part of the command structure and will also be responsible for volunteer safety.

The simplest approach is to discourage, or actively prohibit, volunteers from attending work sites to avoid any possibility of accidents (and also any chance of litigation). While this approach may be feasible with relatively small spills that only affected relatively short

lengths of coastline, it is generally not feasible for large spills or those affecting long lengths of shoreline and may not be politically acceptable.

Public and political pressure to utilise volunteers can become so significant that spill managers may feel that they have no choice but to integrate volunteers in some way into the response. A worst-case scenario in health and safety terms is when large numbers of volunteers turn up and are allowed to work in heavily oiled areas, such as was the case with the HEBEI SPIRIT response. In this case the Korean Coastguard and the local government shared a general responsibility for volunteer safety. The first step they undertook was to have large quantities of PPE brought to key points along the shorelines for allocation to volunteers. Each was given a disposable paper suit, gloves, boots and a face. However, the sheer scale and numbers of people arriving made it impossible to undertake any meaningful basic operational or safety training for the volunteers before they started working. It also made it extremely difficult to track the amounts of PPE that had been issued and to whom. The majority of training was given on site by issuing simple instructions either through a megaphone or PA systems set up along the beach. A supervisor from the local government and/or coastguard would often supervise volunteers on the shorelines, directing them to areas of shoreline and ordering them to undertake the type of work that he/she felt was appropriate. However, the training/competence of these supervisors differed greatly, resulting in not all volunteers being given safe and effective tasks.

During the NAKHODKA incident in Japan (and other incidents elsewhere), older volunteers have suffered fatal heart attacks during response work, which may or may not have been directly attributable to the clean-up work. Screening volunteers to keep out young children and older citizens is a simple way to avoid some worst-case situations. Prohibiting *ad-hoc* volunteer turnout, requiring formal certification, or giving informal training *in situ* are other approaches.

Logistics

The feeding and support of large numbers of volunteers has been approached in different ways around the world. In general, there seem to be three main ways in which the logistical requirements associated with volunteers are handled:

- On-site provisions – food and provisions are provided at the location of the clean-up
- Off-site provisions – food and provisions are provided in a central location elsewhere
- Self-sufficiency – where groups provided their own food and other provisions

During the HEBEI SPIRIT incident it was invariably the affiliated volunteers, particularly larger charity groups, who were better organised and more self-sufficient, organising their own food and shelter. Food stalls and tents were set up, close to the work areas, with hot food and drinks prepared continually throughout the work day by teams of volunteers for all who worked in the area. It was noted that people working in the food tents did not usually work on the shorelines at other times; the larger volunteer groups had divided the work, with the eldest generally working in the food tents, rather than on the shoreline. In many areas, particularly on isolated shorelines, however, the local authorities had to provide hot food and drinks.

The Costs

Many people may think of volunteers as a ‘cheap’ option when it comes to oil spill clean-up, but is this really the case? There are many costs that may not be obvious prior to volunteers arriving on site, but these should be acknowledged and brought into the decision making process. Some of the typical costs categories include: reception and registration, training (both safety and work training), PPE (overalls, gloves, boots, masks etc), equipment and materials (spades, buckets, sorbents), accommodation, transport, and food/ water.

While it is obvious that all of these cost categories are also relevant for professional workers, the important point is that the same level of productivity and cost effectiveness is

hard to achieve with volunteers. PPE for example is generally disposable, but the cost to replace and dispose of it can be high. Volunteers have a tendency to require more frequent replacements because they either wear it out faster or are unwilling to wear oiled, yet still serviceable PPE. In most cases the problem tends to be that volunteers simply do not work for long enough periods to reach the optimal lifespan of some of the (more expensive) items (e.g. boots and gloves). Similar issues arise with training, registration and equipment.

It has been estimated that during the PRESTIGE incident in Spain the cost of each volunteer was at least \$60 per day for PPE and basic cleaning equipment (bucket and a small spade), but not including food, drinks, accommodation costs or any medical expenses. During this incident, many volunteers were housed with willing local residents or in temporary accommodation set up in municipal sports halls or in other public buildings.

Of great significance is the fact that volunteers are more likely to create greater quantities of waste than professionals (e.g. inappropriate use of sorbents, or non-selective removal of clean substrate from the shorelines). This should not be understated, as increasingly the waste disposal costs are becoming one of the most significant cost aspects of a spill.

Ultimately, one of the most important aspects of volunteer-use is to ensure that they are cost effective and that the work they undertake is proportional to the costs incurred.

Conclusions

Large oil spills from tankers or other types of vessels are ever-more-rare events. Prevention measures continue to be developed as do improvements in clean-up techniques, animal rehabilitation and worker training. Of course, no oil spill clean-up operation will ever be viewed as a total success by the general public, media and politicians, simply because it is viewed as an avoidable, negative event. One positive aspect can be the appropriate consideration of volunteers, whether this means using them or not, as long as the message is

communicated effectively that their offer of assistance was considered seriously.

As has been highlighted in this discussion, there have been many different approaches adopted for the use of volunteers. Ideally, the issue of volunteers should be addressed through a specific volunteer management plan or the appropriate oil spill contingency plan where consideration is due as to how a volunteer effort might be managed and financed. Although volunteers are not paid, *per se*, in reality, there are many costs associated with their work, which are often overlooked at the beginning of a response. This is important since the compensation process running in the background requires that costs incurred must be technically reasonable and appropriate to be considered for payment.