

RESPONSE TO HAZARDOUS AND NOXIOUS SUBSTANCES (HNS) BY THE SWEDISH COAST GUARD (SCG).

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History:

For the SCG it all started with an accident in 1973, when a small bulker, m/v Viggo Henriksen sank on the Swedish east coast with some HNS in the cargo. Some of the HNS, a marine pollutant, **Chrometrioxyde** (CrO₃), stored in barrels were spread on the sea bed. The problem faced at that time was that no one knew if they had the responsibility to deal with this! There were a lot of acting parties, like the Royal Navy, Maritime Rescue Coordination Centre (MRCC), SCG and the municipal fire brigade, but no one knew who was in charge of the operation.

At that time the Swedish Coast Guard took the lead, without any clear mandate to do so and all the others just lined up behind!

The Swedish Government then appointed SCG as competent authority to deal with HNS spills at sea in addition to our earlier given assignment to deal with response to oil spills at sea.

We realized that the need for having a command structure and training was crucial for our ability to deal with this new assignment. Since SCG already had an organisation including scuba divers it was a natural step to choose candidates for our new first responder groups among them. They were given sufficient training on fire fighting on board ships as how to deal with hazardous substances on board and in water as well as decontamination of people and contaminated equipment. Since then we train all our divers for water diving, fire fighting and first responders and after this training they are assigned SCG rescue divers.

Part of the training is also conducted at the maritime university for practical and theoretical familiarization of ships (tankers) and medical (first aid) training. The number of trained divers is today approximately 70.

To assist decision making for the Response Commander how and when to use our divers during a response operation a chapter in the SCG Response plan has been developed including guidelines and instructions concerning these issues.

Development until today:

In case of a HNS incident there will not be enough responders available within the Swedish Coast Guard. In order to strengthen the capability to respond to an accident at sea a special

agreement including six municipal rescue services along the Swedish coast line has been established. According to the agreement each rescue service should provide a task force of 6 fire fighters (RITS) that could be transported out to a ship/accident on 365/7/24 stand by. The task force should be specifically trained for rescue duties onboard ships, such as firefighting at chemical incidents, embankment of chemicals, seal leakages of containers or packages as well as other situations. The teams of the fire brigades are specially trained on:

- Orientation on board a ship
- Handling of life boat
- Use of helicopters
- Ship stability measurements

The equipment of the teams should be kept pre-packed and be transportable by helicopter. Training and exercises are carried out together with SCG response teams. The decision to engage RITS is taken by SCG Response Commander and they are under SCG command together with our own response teams during the engagement.

Regarding our own development there has been a regularly update of our response system in terms of equipment such as protective clothing, IR cameras, gas detectors/indicators and use of remote operated vehicles (ROV).

All our response vessels could serve as platforms for the response teams as they are equipped with over pressured compartments and decontamination stations for contaminated persons and have fire fighting capacity and storage capacity in permanent tanks or special containers. There are also some of the pumps and skimmers and booms that could be used to handle chemicals as well as oil.

Threats/ Traffic patterns:

The Baltic Sea is a sea area with a lot of ship traffic. Approximately 2000 ships are sailing in these waters every day and about 15-20 % of them are tankers. Oil transports are of course the main risk for large scale pollution in this sensitive sea. It is estimated that a normal regular turnover for water exchange is about 25-30 years and that gives us an idea how vulnerable the Baltic Sea is. Among all the ships there are also many carriers of HNS in bulk and in packaged form. A major problem is how to find out the exact amount and proper names of the products and this is significant for container carriers. If in the event of an accident, this kind of information is very important in order to respond safely for our personnel and to use the proper methods and tactics. Safe Sea Net (SSN) is a promising reporting system where some information regarding HNS transports could be found. The existing reporting system does not provide us with all the information needed and in case of an accident this has to be considered before any action is being taken. Hopefully we will have more clear information in the future and we foresee a more efficient reporting system and perhaps additional information by a further developed AIS system.

There are 46 ports around the Baltic Sea handling about 10 million tonnes of chemicals every year. Annually there are about 1300 ships, specially designed for chemical transports, on route in that area carrying acids, bases and gas which are used for industrial purposes around the coast.



High risk areas identified by HELCOM



Liquid chemical ports in the Baltic Sea

Future development:

To increase our capacity to meet the requirements for responding to accidents where oil or HNS is spilled at sea the Swedish Coast Guard is building new ships. There are three ships in stock at Damen Shipyard with the first to be delivered in May 2009. With a length of 81 m and a storage tank capacity of about 1000 cbm each, these ships will certainly improve our capacity on open sea response. The ships are also built for emergency towing purposes with a bollard pull of 100 tonnes, which will be sufficient in order to handle a ship of 100.000 tonnes in bad weather conditions. Two of the ships will be operating in the Baltic sea. The other one in the North sea. One of the ships will be specially designed as chemical recovery vessel and will be equipped with sophisticated detectors and stainless steel tanks and decontamination facilities in order to deal with chemicals.

The crew, (normally 16), will always have a strike team with response divers onboard. In addition the ship design allows up to 36 people to work in severe conditions.

Regarding our response divers we are upgrading our recent diving system with a new type of helmet system which will allow us not only to dive deeper in water but also to be able to dive in contaminated environment. This system will also be in use on our new chemical recovery ship.



Furthermore we have just ordered 4 oil recovery vessels to be delivered in 2011 – 2012. The ships are designed for regular Coast Guard patrol duties as well as oil recovery operations. They will as well be able to serve as platforms for strike teams dealing with HNS. There will be some extra equipment, such as cover drums stored onboard and decontamination facilities for our emergency responders.



We are also looking into a closer cooperation with our neighbouring countries in order to have mutual exercises in the area of HNS and contacts have been taken with members of Helcom/Bonn agreements for exercises at sea. Together with Denmark and Norway within the frame work of the Copenhagen agreement we have performed a table top exercise which will be followed by additional ones to improve the tactics when dealing with HNS and to train the command structure.

Since real accidents including larger amounts of HNS are rare exercises becomes very important. Dealing with all detectors and protective clothing during a HNS incident is very complex and different from a "normal" oil spill.

Finally there is an ongoing project, partly funded by the EU, called BRISK (Subregional risk of spill of oil and hazardous substances in the Baltic Sea) where one of the objectives is to identify the risks concerning transports of oil and HNS in the Baltic Sea. This project has participants from all Helcom member states (all countries around the Baltic Sea). The result of the risk assessment will hopefully point out where the real high risk areas are and if the preparedness to deal with an accident is good enough or if we need to upgrade our capacity.

Even if the main focus is on oil preparedness and prevention we should look into HNS as well in the risk assessment and hopefully we will have a better overview of what kind and how much HNS being transported in our waters and what each country has to do in order to meet that risk.

Even though we think we are in the right direction strengthening our capability to deal with HNS accidents we realise that there is a long way forward and much more has to be done before we are prepared to meet a big accident. We believe in cooperation with our partners in the regional agreements, such as Helcom, Bonn and Copenhagen agreements as we do when dealing with large oil spills is the way to success.