



**SLÄCKMEDELS-  
CENTRALEN  
SMC AB**

#### **Shareholders in SMC:**

Svenska Statoil AB, AB Svenska Shell, OK-Q8 AB, Preem Petroleum AB, Norsk Hydro Olje AB, ConocoPhillips Nordic AB and Skandinaviska Bensin AB din-X.



SMC carries out emergency exercises on a regular basis in the Swedish oil terminals.

## Contact



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## Background

Safety is a high priority in an oil terminal. The preventive work has been very successful and accidents and fires are rare. Quality certification and internal control are additional ways to improve and develop safety in order to minimise risks for accidents and fires.

Only one large scale fire in an oil tank has occurred in Sweden (1956) during the time we have used oil and petrol.

According to current regulation it is the owners or operators of plants who are liable to maintain and finance emergency services with personnel and equipment on facilities where operations entail an inherent risk of accidents causing serious damage to people or environment.

The Swedish Rescue Services Agency has issued guidelines for fire protection measurements in oil terminals. The recommendation is developed in consultation with Swedish National Testing and Research Institute, The Swedish Fire Protection Association, Swedish Petroleum Institute and local fire brigades.

Tank fires are rare but in order to keep the necessary



Two SMC modules.

resources available if such a fire should occur, the Swedish oil companies formed Släckmedelscentralen – SMC AB in 1994.

Basic facts regarding tactics and equipment come from SP's report 1992:02 »Design, equipment and tactics are critical when fighting large tank and bund fires«.

## Tactics

The conclusion in SP's report is that the best way to reach successful extinguishment is to use mobile equipment. SMC's equipment is designed for an application rate of 10 litres high quality foam per m<sup>2</sup> and minute for 90 minutes on a burning surface.

If a tank fire should occur it is SMC's task to extinguish the fire. The local fire brigade shall stop the fire to spread by cooling threatened objects until SMC can extinguish the fire.

## Släckmedelscentralen – SMC AB

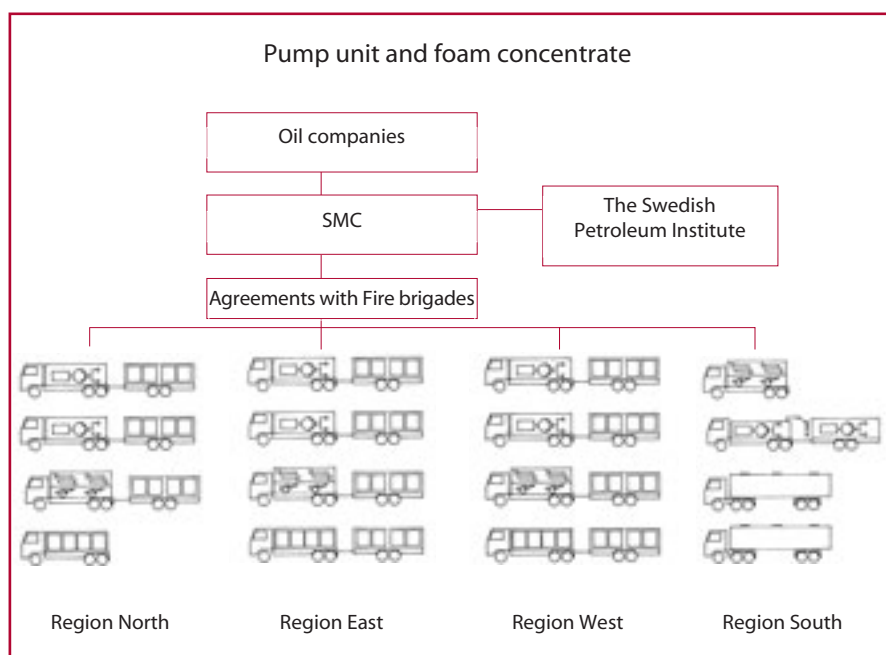
Seven Swedish oil companies have established SMC, invested in equipment and reach agreement with the fire brigades in Stockholm, Gothenburg, Malmö and Sundsvall regarding operations of SMC and emergency preparedness.

The Swedish terminal network is divided into four regions. Each region has a base location that is responsible for all terminals within the region.

In addition to the owners, other companies that store and handle petroleum products, have agreements with SMC.

## Organisation

SMC is administrated through SPI. The daily operation is based on agreement with local fire brigades. On each base location a coordinator is responsible for basic training, emergency exercises and other SMC



issues in the region.

All personnel working with SMC on base locations have been specially trained for their working duties.

On each base location there is also a number of team leaders who are trained in tactics and strategy on extinguishing tank fires.

In the country there is in total about 200 specially trained firemen and about 30 team leaders.

In case of a fire an operational SMC team consists of one team leader and five firemen. Emergency preparedness is maintained 24 hours a day, 365 days a year.

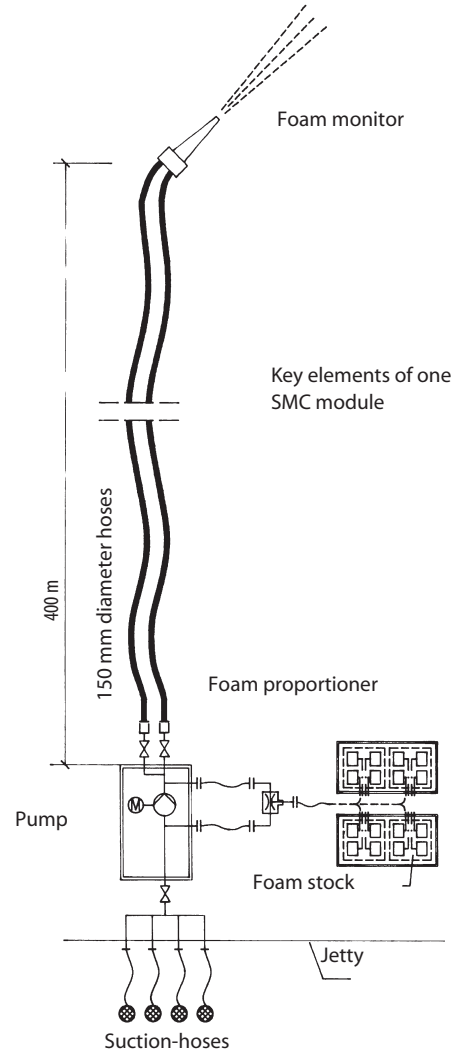
## Equipment

The equipment for each region consists of two modules where each module includes:

- a specially designed pump with a capacity of 10 000 litres per minute at 8 bars
- a foam monitor which has a capacity of 8 000 litres per minute
- 20 tons of alcohol resistant foam liquid
- a foam proportioning system
- 800 metres of 150 mm diameter hoses fitted with Storz couplings and a mobile hose recovery unit to handle the hoses.

The modules can be used either in parallel or in series. The equipment can be transported by lorry or by the Swedish Air-force's Hercules aircraft.

In the country SMC has a total of eight pumps, eight foam monitors, 144 tons foam concentrate, 4 000 meters fire hose, four hose handling units and eight foam proportioning units.



A large-scale exercise includes several parts such as transportation, to set out pumps and fire hose and foam proportioning units.

SMC regions.

The country and its terminal network is divided into four regions where each base location is responsible for all terminals within the region. Gotland is part of Region West.

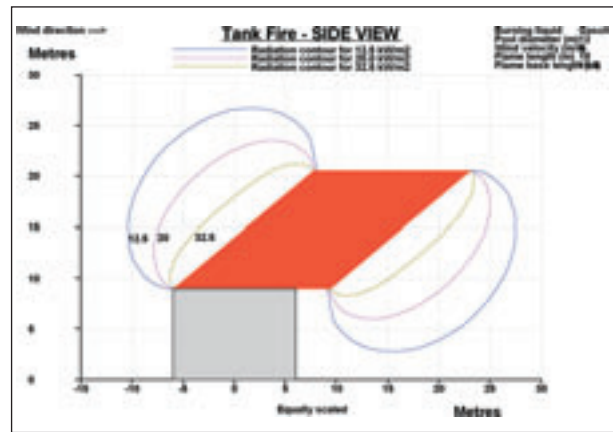
Illustration Viera Larsson



### Emergency training

An important task for SMC is to prepare and develop the fire protection at terminals by giving emergency training. SMC carries out five to eight large exercises each year. Exercises are carried out in cooperation with local fire brigades, oil harbours and terminal operators. Initial discussions are regularly held before each practical exercise. Based on the experiences from the exercises and on discussions with local fire brigades and terminal and harbour operators emergency plans for a number of different fire scenarios are produced for SMC and the local fire brigade. SMC's coordinators have access to computerised tools to simulate different situations.

Emergency exercises have been carried out one or several times at all terminals in the country. The frequency of exercises varies from one to six years according to the size of the terminal and the scale of the operation.



Estimation of a fire scenario by PIPA (Pre Incident Planning Assessment).

SMC equipment can be transported by aircraft. The picture shows the amplitude of two and four hours flight respectively.



### Fire Fighting Contribution

SMC's task is to extinguish tank fires in oil terminals. The equipment can also be used in other situations and has been utilized on several occasions where large fires or accidents have occurred. Some examples; a forest fire in Tyresö in 1999, derailment of a LPG train in Borlänge in 2000, a chemical accident in Venezuela in 2000, fire in a storage for tires in Malmö in 2001 and a fire in a storage for car batteries in Landskrona in 2001.

### Alarm Calls

SMC is alerted by SOS Alarm by the fire officer in charge at the scene of the fire. After an alarm SMC should be on its way towards the place of the fire within 30 minutes.

### Summary

With the Emergency Centre, SMC and the equipment that is currently available, including the professional and specially trained personnel from the Rescue Services, Sweden has the capacity to tackle very serious fires that may occur in an oil terminal.

Thanks to its flexibility, there is no obstacle to utilising this unique resource beyond the Swedish border.