The report contains a list of fire hazards in engine rooms, shows the results of investigations on a board a number of ships and from fullscale experiments performed with different spray fires, together with a proposal for designing and dimensions of a local applications system for ship's engine room. The proposal is based on a system employing fast response IR-detectors and water or foam sprinklers.

A technical fire study of a ship's engine room reveals that spray fires in connection with oil leakage creates a predominant risk for fires. Most fires are caused due to fuel leakage or lubricating oil system. Such type of spray fires can easily cause serious damage.

To extinguish a spray fire manually involves considerable risks. Hence, it´s justifiable to have good safety measures against such fires, first and foremost, taking into cionsideration personal protection and also economical reasons.

Experience from fire accidents show that the existing fire extinguishing system in use today for total protection works extremely slow to limit the damage at an acceptable level. One or more local applications system is therefore needed as a complement to protect first and foremost the area around the main and auxiliary machines.

Normally, a Halon based system is used for that purpose. As Halon agents will be prohibited soon, an alternative has to be developed. The experiments carried out show that a system with water which is discharged through high speed nozzles can be used to extinguish a spray frie in heavy oil products. Spray fires in light products can be extinguished by foam application or at least controlled untill the fuel flow can be shut off.

Special foam nozzles however are not required as conventional high speed nozzles work extremely well. Foam mixture also gives a good protection against pool fires.

In order to define the different engine rooms and possible fire scenarios, the engine types are divided into four different categories. The results of the experiments performed correspond well to the fire situation in an engine room with medium spin engines.

It is extremely difficult to come to any conclusion regarding the effectiveness of foam or water sprinkler systems in the event of a fire on top of a long stroke ship's engine. The simulated oil spray fires however, correspond very well to what can be expected even in case of leakage on a big engine.