

SPECIFICATION

A helicopter landing platform

This invention concerns a helicopter landing platform.

- 5 Helicopter landing platforms are found in large numbers both offshore and on land, particularly in the oil exploration industry. It is common practice on offshore drilling rigs and other marine installations to cover the landing platforms with a ropemesh to prevent the helicopters from slipping.

- 10 Should a helicopter crash during landing or take-off, there is considerable fire hazard. If there is a fire, burning fuel oil will most probably flow on to the landing platform and spread rapidly to surrounding areas. The anti-slip ropemesh will burn away. In windy conditions, that portion of the landing platform down wind of the helicopter will be covered in flames. Under these circumstances, it is imperative for anyone on board the helicopter to disembark quickly and through the flames on the landing platform to safety. It is widely recognised that the action taken during the first few instants of a fuel oil fire determines whether anyone on board the helicopter can be brought to safety and the fire put out.

- 25 Fire extinguishing equipment at existing helicopter landing platforms is usually portable equipment stationed along the perimeter of the landing platform. If a fire occurs in windy conditions, with the portion of the landing platform down wind of the helicopter covered in flames, it will be impossible to gain access to the fire extinguishing equipment stationed on this side of the helicopter.

- 30 In windy conditions, foam based fire extinguishing equipment is useless on existing landing platforms as the foam will be blown away by the wind instead of covering the fire and suffocating the flames. The only suitable fire fighting substance is therefore power-based. Water hoses are usually installed on helicopter landing platforms, but water cannot be used to put out a fuel oil fire. Water may be used for cooling purposes after the fire has been extinguished as hot materials may easily re-ignite the fuel oil.

- 45 In order to ensure a reasonable level of safety at existing helicopter landing platforms, a large number of portable fire extinguishers are required and also a large number of trained personnel to operate these.

- 50 The intention of this invention is to provide a landing platform where burning fuel oil escaping from a wrecked helicopter can be suffocated as it reaches the landing platform.

- 55 A helicopter landing platform according to the invention comprises a level surface; a grid structure disposed above the level surface; a supporting framework supporting the grid structure above the surface thereby defining a space between the grid structure and the surface and a number of fire extinguishing substance nozzles positioned in the space. Preferably the fire extinguishing substance is foam based.

The grid structure and the supporting

- 65 framework are preferably surrounded by a rim. Further it is preferred that the helicopter landing platform includes several separate elements, each element consisting of a grid structure, a supporting framework, piping with nozzles for fire extinguishing substances, and a surrounding rim.

- 70 One embodiment of the invention will now be described by way of example and with reference to the accompanying diagrammatic drawing which shows in perspective a section of a helicopter landing platform in accordance with the invention and with part of a surrounding rim removed.

- Reference number 1 in the drawing denotes a level surface, which could well be an ordinary known landing platform. On surface 1 rests a number of elements 2 which are positioned adjacent to each other and together make up a helicopter landing platform according to the invention. Each element 2 has on its underside a supporting framework 3 which rests on surface 1. A coarse-mesh grid structure 4 rests on the supporting framework 3. A fine-mesh grid structure 5 rests on the coarse-mesh grid structure 4 and forms the top surface of the helicopter landing platform. Framework 3 and grid structures 4 and 5 are surrounded by a rim 6 which has a number of openings for drainage 7 along its lower edge. In the space 8 between surface 1 and the coarse-mesh grid structure 4 is disposed a network of pipes 9 with nozzles (not shown on drawing) for fire extinguishing substances from a central foam producing plant (not shown on drawing). A curved cover is placed above each nozzle and thus forcing the foam from the nozzle downwards to ensure that the elements 2 are filled first from the bottom and the foam then rises evenly in the elements 2. The fine-mesh grid 5 restricts the foam and prevents it from being forced through the top surface of the element before the element 2 has first been completely filled. Excess foam will thus be forced through the upper surface of element 2 as long as foam is supplied through the nozzles.

- 100 It will only take a few seconds to fill the elements 2 with foam once the foam producing plant starts supplying foam through the nozzles. Burning fuel oil from the wreckage of a helicopter on the landing platform will flow into the elements 2 and be suffocated instantaneously. The fuel oil will remain at the bottom of the elements 2 or it will be drained away. The elements 2 are of such height that any fuel oil at the bottom of the elements will be covered by a sufficiently thick layer of foam to avoid re-ignition. Wind, regardless of force, will not be able to blow away the foam in the elements 2.

- 115 Anyone on board a crashed helicopter will be safe from the hazards of a fuel oil fire as soon as they get out from the craft and on to the foam covered platform. Persons whose clothing is on fire may roll on the platform, where foam is constantly rising up through the grid 5, and thus effectively extinguish the burning clothes.

The helicopter landing platform may also be

equipped with portable fire extinguishing equipment. This equipment may be used to fight the fire in the helicopter itself, a task greatly reduced as the landing platform will not be covered with burning fuel oil.

It is obvious that the helicopter landing platform need not be covered by a ropemesh to prevent the helicopter from slipping as the grid structure 5 provides a non-slip surface.

It is a considerable advantage that the above described landing platform will always provide a dry landing surface, as rainwater cannot collect in large shallow pools of water as it often does on existing platforms.

A further advantage is that small quantities of lubrication oil which normally leak helicopters when stationary on the platform, will not collect on the surface and thus make it slippery, as is the case on existing landing platforms.

Should a helicopter experience any difficulties during flight, and an emergency landing can be foreseen, the landing platform can, of course, be covered by foam in advance and without any possibility of the foam being blown away. The same procedure may be followed if one is concerned with the danger arising from static electricity being discharged as a helicopter touches down on the landing platform.

CLAIMS

1. A helicopter landing platform comprising a level surface; a grid structure disposed above the level surface; a supporting framework supporting the grid structure above the surface thereby defining a space between the grid structure and the surface and a number of fire extinguishing substance nozzles, positioned in the space.
2. A helicopter landing platform as claimed in claim 1 wherein the grid structure consists of a finemesh grid structure over a coarse-mesh grid structure.
3. A helicopter landing platform as claimed in claim 1 or claim 2, wherein a rim surrounds the grid structure and the supporting framework.
4. A helicopter landing platform as claimed in claim 1 or claim 2 wherein the platform includes several separate elements, each element consisting of a grid structure, a supporting framework, piping with fire extinguishing substance nozzles, and a surrounding rim.
5. A helicopter landing platform as claimed in any preceding claim wherein the nozzles are for a foambased fire extinguishing substance.
6. A helicopter landing platform as claimed in claim 5 wherein each nozzle has a curved cover disposed thereabove.
7. A helicopter landing platform substantially as hereinbefore described with reference to the accompanying drawing.



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