

A launch and retrieval system

The present invention relates to a launch and retrieval system suitable for handling loads such as lifesaving equipment.

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The invention may be applied to lifesaving systems comprising lifeboats that are to be lowered to, and retrieved from, the surface of the sea from vessels or rigs and the like.

- 10 According to the first aspect, the present invention relates to a launch and retrieval system for a lifesaving system. The system includes:
- an enclosure configured for at least partially accommodating a lifeboat or equivalent,
 - means, at least partially arranged inside the enclosure, configured for
- 15 suspending a lifeboat or equivalent by means of one or more wires from an upper portion of the enclosure. The means is configured for hoisting and lowering a lifeboat or equivalent in or out of the enclosure.
- 20 Abovementioned enclosure refers generally to all kinds of housings or encapsulations configured for accommodating means for lifesaving such as, but not limited to, lifeboats.

25 It is understood that the expressions ship, boat or vessel, throughout this specification, are meant to denote any kind of floating structure suitable for carrying either persons, cargo or a combination thereof.

It is further understood that the expression fall, throughout this specification, is meant to denote any kind of wire or rope which is suitable for being wound

30 up on, or wound from, a drum.

Background

Recent developments have lead to encasement of various types of lifeboats.

- 5 The various types of lifeboats includes the type typically suspended from two falls connected to opposed ends of the boats, as well as free fall lifeboats.

The encasements or enclosures may or may not form or constitute modular enclosures. The advantages rendered by stowing the lifeboats in enclosures

- 10 are multifarious and are further disclosed e.g. in applicants WO 09153240 A.

Background art

US 6,510,808 B discloses a rescue system including at a space operable to
15 be completely closed from a surrounding environment for long-term occupation therein. According to the disclosure, a plurality of lifeboats may be arranged within an enclosure. The lifeboats may be boarded while present inside the enclosure, i.e. prior to deployment. The lifeboats may be lowered to the surface of the sea out underneath the enclosure.

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WO 0 702 885 1 A1 discloses an abandon station for a maritime unit. The abandon station is isolated from the surroundings by an enclosure. According to the disclosure, a lifeboat may be arranged within the enclosure, and the lifeboat is operable to be occupied while inside the enclosure prior to de-
25 ployment. The lifeboat may be lowered to the surface of the sea out underneath the enclosure.

WO 1 009 212 7 A discloses a launch and retrieval device for handling means for lifesaving to be lowered to the surface of the sea from inside of an
30 encasement. The device inter alia comprises a winch comprising a drum, one or more pulleys and a structure accommodating the winch and one or more

pulleys. The structure further comprises coupling means adapted to provide a releasable connection between the structure and an interior part of an encasement adapted to accommodate means for lifesaving.

- 5 WO 0 915 324 0 A discloses a lifesaving system for rescuing crew on board ships or rigs and the like. The system includes a lifeboat and an encasement adapted to accommodate the lifeboat. The encasement including the lifeboat form part of a modular system allowing maintenance to be carried out on modules not arranged on the ship or rig.

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Brief description of the invention

- The abovementioned references all disclose lifesaving systems configured for launching and retrieving means for lifesaving through a bottom face of an enclosure. The hoisting and lowering operations are performed by means of
15 wires, or falls, connected to an upper part of the enclosures.

- As loads in free suspension, such as loads suspended below pivot points, in its nature act as a pendulum, the loads inherently swings about the pivot
20 point as a result of any disturbance. The disturbance could constitute any shift of internal loads within a lifeboat, e.g. occupants moving around within a lifeboat, or disturbances or impacts rendered by the systems surrounding environment, e.g. motion of the ship or rig, waves, or wind etc.

- 25 In scenarios wherein a lifeboat or equivalent is positioned in any position in between its upper and stowed position inside an enclosure and a position below the enclosure, any transverse or lateral swing or movement may cause the lifeboat or equivalent to bump into surrounding structures such as the internals of the enclosure or the lower edges of the enclosure. Lifeboats and
30 its surrounding equipment are delicate equipment, and therefore any impact

or even gentle contact with surrounding structures may damage the equipment potentially rendering the equipment unusable.

The present invention seeks to overcome the above drawbacks of today's launch and retrieval systems. Up to this day, prior art has failed to teach a simple and yet reliable and inexpensive launch and retrieval system which in a safe and reliable manner, without substantially increasing the weight and/or particulars of the system, provide a reliable and durable launch and retrieval system minimizing any risk of injuries to crew as well as damages to the equipment resulting from swinging of the lifesaving equipment.

According to the invention, there is provided an improved launch and retrieval system as per the introductory part of this specification, and in particular upon providing the launch and retrieval system with means preventing a lifeboat or equivalent from swinging freely in positions in-between an uppermost and stowed position and a lowermost position wherein a lifeboat of equivalent at least partially is positioned outside the enclosure, a launch and retrieval system eliminating the abovementioned drawback of the prior art launch and retrieval systems is provided.

The means preventing a lifeboat or equivalent from swinging freely in positions in-between an uppermost and stowed position and a lowermost position may constitute a movable follower or a guide configured for reducing the arm of pendulum defined by the suspended lifeboat and its point of pivot.

The simple design of the means preventing a lifeboat or equivalent from swinging freely in positions in-between an uppermost and stowed position of a lifeboat or equivalent and a lowermost position wherein a lifeboat of equivalent at least partially is positioned outside the enclosure, virtually eliminate any risk of damage to the equipment.

According to one embodiment, the guide means may constitute a vertically displaceable guide configured to maintain a pendulum arm defined by the lifeboat suspended from the one or more wires and its point of pivot essentially unchanged during the lifeboats descent or ascent inside, or partially inside, the enclosure.

According to one embodiment, the means preventing a lifeboat or equivalent from swinging freely may constitute a movable follower provided with a wire guide. The follower and the wire guide may be configured for at least partially following, relatively or not, a connection point between a lifeboat or equivalent and the wire such that a pendulum arm defined by a suspended lifeboat or equivalent and its point of pivot about the wire guide is minimized.

According to one embodiment, the wire guide may be provided with one or more rollers arranged to define an internal gap through which the suspending one or more wires are run. The rollers are beneficial if the lifeboat or equivalent is to be elevated over a substantial distance below the encasement.

According to one embodiment, the means preventing a lifeboat or equivalent from swinging freely may be configured to descend inside the enclosure together with a lifeboat or equivalent. The means may descend by means of gravity.

According to one embodiment, the movable follower and the wire guide may be configured to be lowered through a bottom plane, defined by a lower periphery or edge of the enclosure, by means of an extendable and retractable guide.

According to one embodiment, the system may be provided with two opposed wires configured for suspending a lifeboat or equivalent from connec-

tion means arranged forward and aft of a lifeboat or equivalent as well as two opposed means preventing a lifeboat or equivalent from swinging freely.

According to one embodiment, the system may be configured for, in a stowed
5 position of a lifeboat or equivalent, completely enclose a lifeboat or equivalent'.

According to one embodiment, the lifesaving system may further comprise a
lifeboat.

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Brief description of the drawings

Figure 1 is a perspective view of the system according to the present invention wherein the means preventing a lifeboat or equivalent from swinging
15 freely is located in an upper position inside the enclosure.

Figure 2 is another perspective view according to that of figure 1.

Figure 3 is a perspective view of the system according to the present invention wherein the means preventing a lifeboat or equivalent from swinging
20 freely is located in a lower position outside the enclosure.

Figure 4 is another perspective view according to that of figure 3.

25 Figures 5 – 20 are perspective views of a system according to the present invention.

Detailed description with reference to the figures

30 Figure 1 shows a part of a launch and retrieval system for a lifesaving system. For illustrative purposes, the figure shows one end only of the launch

and retrieval system. The skilled reader will realize that systems configured for twin fall lifeboats will be provided two substantially equal but opposed ends.

- 5 Numeral 10 refers to an enclosure which, again for illustrative purposes, throughout the figures is shown as a cage only. In typical embodiments, the enclosure 10 may constitute an at least partially closed box or equivalent having lower edges defining a bottom face 11 through which means for not shown lifesaving may be lowered through, inter alia by means of wires or falls
- 10 20.

In typical embodiments, the top and side faces of the cage may be closed by panels or equivalent.

- 15 As can be seen in the figures, the fall 20 interconnects coupling means 70 for coupling with, or attachment to, a lifeboat or equivalent and means 80 configured for hoisting and lowering the means for lifesaving. The means 80 may constitute an arrangement of motors, wire drums and pulleys or equivalent.

- 20 As per the present invention, the launch and retrieval system comprise means 50 preventing a lifeboat or equivalent from swinging freely. The positions illustrated in the figures are positions in-between an uppermost and stowed position, as illustrated by figures 1 and 2, and a lowermost position, as illustrated by figures 3 and 4.

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The means 50 preventing a lifeboat or equivalent from swinging freely may be obtained by various arrangements.

- For the sake of simplicity, we will in the below explain one working embodiment of the means 50 configured for preventing a lifeboat or equivalent from swinging freely in positions below an uppermost and stowed position.
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Referring to figure 3, the means 50 preventing a lifeboat or equivalent from swinging freely constitute an assembly comprising inter alia a movable follower 51 configured to be guided vertically by a rail or guide 55. The rail or
5 guide may in a simple form constitute an I-profile or equivalent. The follower 51 is provided with a wire guide 52 comprising rollers arranged to define an internal gap 54. The internal gap or space 54 is configured for guiding the fall
20 in-between the rollers through the wire guide 52 and the follower 51.

10 The follower 51 and the wire guide 52 are configured for following a connection point, or hook, between a lifeboat or equivalent and the wire 20 such that a pendulum arm defined by a suspended lifeboat or equivalent and said wire guide is minimized due to prevention of movement in planes lying normal or
perpendicular to the orientation of the fall 20 extending through the gap or
15 space 54.

The means 50, i.e. inter alia the follower 51 and the wire guide 52, is according to the embodiment shown throughout the figures configured to descend inside and ultimately also outside, the enclosure 10 together with a not
20 shown lifeboat or equivalent, by means of gravity. Upon retrieval of the means for lifesaving, the follower 51 and the wire guide 52 is raised into the enclosure 10 by means of contact with coupling means 70 or equivalent, alternatively, the means for lifesaving.

25 In certain not shown embodiments, the launch and retrieval device may be provided with means controlling the position of the follower 51 and wire guide 52. Such means could constitute servos or even simple wire operated arrangements or equivalent.

30 The movable follower 51 and the wire guide 52 may, as shown in figures 3 and 4 be configured to be lowered through a bottom plane 11 defined by a

lower periphery or edge of the enclosure 10. As the encasement 10 preferably shall be free of, in a stowed position, parts protruding through the bottom plane 11, the means 50 preventing a lifeboat or equivalent from swinging freely in positions in-between an uppermost and stowed position of a lifeboat
5 or equivalent and a lowermost position, the follower may be guided by telescopic guides allowing a portion of the guide rail to descend below the bottom face of the enclosure 10, i.e. the guide may constitute an extendable and retractable guide 55.

10 The launch and retrieval system will typically be provided with two opposed wires or falls 20 configured for suspending a lifeboat or equivalent from connection means 70 arranged forward and aft of a lifeboat or equivalent as well as two opposed means 50 preventing a lifeboat or equivalent from swinging freely.

15 The application and combination of features and solutions presented by the present invention is not limited to the presented embodiments. One or more features of one embodiment can and may be combined with one or more features of other embodiments, whereby not described but valid, embodiments
20 of the present invention may be obtained.

The term "comprises/comprising/comprised of" when used in this specification incl. claims is taken to specify the presence of stated features, integers, steps or components but does not preclude the presence or addition of one
25 or more other features, integers, steps, components or groups thereof.

Claims

1. A launch and retrieval system (1) for a lifesaving system including:

- 5 – an enclosure (10) configured for at least partially accommodating a lifeboat or equivalent,
- means, at least partially arranged inside said enclosure, suspending a lifeboat or equivalent, by means of one or more wires (20), from an upper portion of said enclosure (10), said means is configured for
- 10 hoisting and lowering a lifeboat or equivalent in or out of said enclosure (10),

characterized in that said launch and retrieval system (1) further comprise guide means (50) preventing a lifeboat or equivalent from swinging freely in positions in-between an uppermost and stowed position of a lifeboat or

15 equivalent and a lowermost position wherein a lifeboat or equivalent at least partially is positioned outside said enclosure (10).

2. A launch and retrieval system according to claim 1, wherein said guide means (50) constitute a vertically displaceable guide configured to maintain a

20 pendulum arm defined by said lifeboat suspended from said one or more wires (20) and its point of pivot essentially unchanged during a lifeboats descent or ascent inside, or partially inside, said enclosure (10).

3. A launch and retrieval system according to claim 1 or 2, wherein said

25 guide means (50) preventing a lifeboat or equivalent from swinging freely constitute a movable follower (51) provided with a wire guide (52), where said follower (51) and said wire guide (52) is configured for following a connection point between a lifeboat or equivalent and said wire (20) such that a pendulum arm defined by a suspended lifeboat or equivalent and said wire guide is

30 minimized.

4. A launch and retrieval system according to claim 4, wherein said wire guide (52) is provided with one or more rollers (53) arranged to define an internal gap (54) through which said suspending one or more wires (20) are run.

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5. A launch and retrieval system according to any one or more of the preceding claims, wherein said means (50, 51, 52, 53) preventing a lifeboat or equivalent from swinging freely is configured to descend inside said enclosure (10) together with a lifeboat or equivalent by means of gravity.

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6. A launch and retrieval system according to any one or more of the preceding claims, wherein said movable follower (51) and said wire guide (52) is configured to be lowered through a bottom plane (11) defined by a lower periphery or edge of said enclosure (10) by means of an extendable and retractable guide (55).

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7. A launch and retrieval system according to any one or more of the preceding claims, wherein said system (1) is provided with two opposed wires (20) configured for suspending a lifeboat or equivalent from connection means (70) arranged forward and aft of a lifeboat or equivalent as well as two opposed means (50) preventing a lifeboat or equivalent from swinging freely.

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8. A launch and retrieval system according to any one or more of the preceding claims, wherein said system is configured for, in a stowed position of a lifeboat or equivalent, completely enclose a lifeboat or equivalent.

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9. A lifesaving system according to any one or more of the preceding claims, wherein said lifesaving system further comprises a lifeboat.

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10. A lifesaving system according to claim 8, wherein said lifeboat constitute a twin fall lifeboat.