

Providing a ship with a cabin

This invention relates to a method of providing a sea-going or marine structure, e.g. a ship or oil rig, with at least one self-supporting box-like cabin element. For the sake of simplicity in the ensuing description and claims, such sea-going or marine structures will be referred to as ships.

In the shipbuilding industry, equipment for the fitting-out of a ship is to an ever increasing extent prepared in advance, at a location remote from the ship. In this way certain entities, for instance, standard-size prefabricated units, can be provided with necessary installations prior to the transfer of the unit to the ship. This speeds up the building of the ship considerably.

It is known to transfer prefabricated, partly or fully fitted-out units to a ship for building up a passenger compartment. Thus, U.S. Patent Specification No. 3,363,597 discloses the use of prefabricated space elements comprising several cabins. The space elements are mounted in a rigid matrix of girders to form several floors, with the elements resting on the girders. In such a structure, the units of the lower levels are difficult to install, and units at the corners of the girder matrix are only supported by girders at two sides. Thus the mounting of the units in this known construction is rather complicated.

Swedish Patent Specification No. 377,681 discloses a container ship with a removable and reassemblable passenger compartment consisting of cabin containers instead of the usual goods containers. The containers are connected by means of temporary arrangements to heating, water, air conditioning and electrical networks present in the ship. The units are lowered into the passenger compartment through openings in the upper deck, but the assembly method is not described in detail. Obviously, the aim is to form a temporary arrangement usable as a passenger compartment. Thus, special

solutions and arrangements are needed, which are complicated and unsuitable for a fixed passenger compartment.

The present invention aims to provide a simple method of providing a ship (as hereinbefore defined) with at least one cabin element to form a stationary passenger compartment, and what constitutes the method according to the invention is defined in the following claim 1.

In this specification the term support surface of a ship means a deck, platform or other even surface capable of receiving a cabin element.

By making the cabin element(s) self-supporting and by mounting it (them) on said support surface, a sufficient strength is obtained without the need of auxiliary stiffeners. The movement of the bottomless cabin element to its desired location can be carried out, for instance, by pushing the element from its free interior. In this way, the cabin element is easily moved, even into very confined spaces. The cabin element can be stiffened with partial bottom members. For instance, such members can protrude inwardly from the lower portions of the walls. The cabin element can also be provided with temporarily attached, re-usable devices for storage and transport.

By making the roof and/or the walls of the cabin element of cassette-like plate members having spaced-apart plate surfaces between which a suitable, relatively stiff insulating material is inserted, a sufficient rigidity is obtained

in an economical way, especially if plate members of a standard size are employed. The plate members can be attached to a rigid frame of the cabin element.

5 The cabin element can be provided in advance with fixed pieces of furniture and other similar equipment. Such furniture and other equipment have a certain rigidity, and this property is made use of by attaching the furniture and other equipment to the walls of the cabin element in order to increase the structural stiffness of the cabin element.

10 Preferably, the transport means comprises temporarily attached transport units which preferably do not extend, or only extend slightly, in the horizontal direction, outside the cabin element. The cabin element can easily be supported by such transport units, which may comprise at least one
15 wheel, air cushion device or the like.

The free interior portion of the cabin element is available for the installation and the control of the transport units. Also changing of transport units can take place through the interior of the cabin element.

20 In order that the cabin element should be firmly supported by its transport units, the latter are preferably arranged at corners of the cabin element. If the cabin element is to be moved by means of an air cushion device, the cabin element is provided with a bag-like unit covering the
25 open bottom portion, in which the air cushion is formed. The bag-like unit is preferably attached to the lower edge of the walls of the cabin element.

The cabin element may be provided with a lavatory unit, which according to the regulations for sanitary rooms has its
30 own bottom. The lavatory unit is so attached to the cabin element, that it increases the stiffness of the cabin element, thereby increasing the strength of the total assembly.

The invention will now be described, by way of example,

with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of a cabin element for use in the method according to the invention,

Figure 2 is a horizontal sectional view of a cabin element for use in the method according to the invention,

Figure 3 shows the ringed portion III of Figure 2 on an enlarged scale,

Figure 4 is a perspective view of one embodiment of a transport unit for use in the method according to the invention,

Figures 5 and 6 are side views of another embodiment of a transport unit for use in the method according to the invention,

Figure 7 is a schematic perspective view of a lifting device for a cabin element, and

Figure 8 is a sectional side view of the ringed portion VIII of Figure 7 on an enlarged scale.

Figure 1 shows a cabin element 1 which comprises side walls 2, end walls 3 and a roof 4, the lower corners of the element being designated 5 and 5b. At the lower edge of the walls there is a frame member 7, to which plate cassette members 8 are attached. A cabin door opening with its door 9 is located in one of the end walls 3.

In the embodiment shown in Figure 2, the cabin element is provided with a fixed bunk 10, which is fastened to one of the walls 2 and an adjacent wall 3 in order to improve the rigidity of the cabin element. There is also a lavatory unit 11, which has its own bottom 12 and is provided with fixed

sanitary devices 13 attached to the walls. A vertical space 14 in the corner 5b accommodates pipes (not shown) of the water supply and sewerage system as well as for heating and air-conditioning.

5 The cabin elements are provided with fixed furniture, some of which is attached to the walls by means of outside support members 18. Figure 2 shows a fixed table 16 and a clothes rack 17. Movable furniture, for example chairs 15, can be placed, for instance, on the bunk 10 during movement of
10 the cabin element to its intended site.

 The plate cassette members 8 of the walls and the roof are joined together by suitable known means. The cassettes comprise a stiffening insulation 22, for instance a stiff mineral wool board or the like.

15 Detachable transport units 19 are located below the cabin element, these units being fitted to the cabin element at two of the corners 5 and at the location 5a for supporting the cabin element via its frame members 7.

 Figure 4 shows a transport unit 19 which includes a top
20 plate 25 and side walls 24a and 24b forming a corner 23. The lower edges of side walls 24a and 24b are bent outwardly to form U-formed support members 26a and 26b with an outer flange 30 spaced from the side walls 24a, 24b by a distance which is slightly greater than the width of frame member 7
25 of the cabin element. The transport unit has a wheel 20 which is journaled on a shaft 29 in a wheel support 27a. The support 27a is turnably mounted by means of a shaft 27 in the top plate 25. A turning arm 28 can be attached to the end of the swivel shaft 27 for turning the wheel 20 about the axis
30 of the shaft 27.

 In the embodiment of the transport unit 19 shown in Figure 5, there is a support plate 33 between the wheel support 27a and the plate 25. This makes the wheel support more flexible. The support plate 33 is movable relative to

the plate 25 by means of guide members 31 and flexible members 32, for instance rubber pads. If the steel wheel 20a of this transport unit collides with a small obstruction 34 (Figure 6), the speed of the wheel 20a slows down temporarily.

5 At the same time the body of the transport unit maintains its speed due to the inertia of the cabin element. As a result, the plate 33 tilts slightly under guidance of the guide members 31 and flexible rubber pads 32 and the wheel 20a rides over obstruction 34. Due to the small contact

10 surface between the steel wheel 20a and the deck or other support surface on which the transport unit is being moved, the wheel 20a turns easily and no turning device attached to the wheel mechanism is necessary.

In order to hoist the cabin element 1 by means of a

15 crane or other hoisting device, separate hoist members can be temporarily connected to the cabin element. As shown in Figures 7 and 8, the hoist members may include cables 36 and a hoist link 35a for connection to a crane hook 35. Each cable 36 has a claw 37 provided with a support surface 39

20 having an upturned flange 40 (see Figure 8). Since the hoist members extend only slightly outside the walls 2 and 3 of the cabin element 1, the latter is easily lowered onto a ship's deck through narrow openings. The weight of a cabin element is preferably from 0.5 to 1 ton, so that a worker can easily

25 lift one side of a cabin element, using a lever, in order to apply a hoist claw 37.

The invention is not limited to employment of the embodiments of cabin elements described above. For instance, a cabin element may comprise several cabins located side-by-side

30 so that a single side-wall, built-up from plate cassette members, is common to adjacent cabins. Such a cabin element will thus comprise both outer element corners and corners confined by two cabins, in the open lower portions of which transport units can be attached.



CLAIMS

1. A method of providing a ship (as hereinbefore de-
fined) with at least one self-supporting box-like cabin
element having walls, a roof and an open bottom, wherein
said cabin element is placed on a support surface (as here-
5 inbefore defined) of the ship and moved to a desired loca-
tion on said surface employing transport means secured to
the cabin element and supporting the weight of the cabin
element from said surface to an extent enabling the cabin
element to be moved laterally on said surface, the cabin
10 element being moved, and/or the transport means being re-
leased from securement to the cabin element, by acting
from within the cabin element via the open bottom.
2. A method according to claim 1, in which the cabin
element employed is made from plate cassette members
15 attached to a carrying frame, to which frame the transport
means is attached.
3. A method according to claim 1 or 2, in which the
cabin element, prior to its location on said support sur-
face, is fitted with fixed items of furniture and other
20 equipment so attached to the walls of the cabin element in
order to increase the rigidity of the cabin element.
4. A method according to any of the preceding claims,
in which the transport means employed comprises detachable
transport units each having a frame, a transport member and
25 means for temporary connection of the transport unit at the
lower edge of a wall of the cabin element.
5. A method according to claim 4, in which each trans-
port unit does not extend to any substantial extent, in the
horizontal direction, outside the cabin element.
- 30 6. A method according to claim 4 or 5, in which means
for steering of the transport units are arranged to be
operated mainly inside the cabin element.
7. A method according to any of the claims 4 to 6, in
which said transport units are placed at corners of the
35 cabin element to support the frame from below.



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8. A method according to any of claims 1 to 3, in which the transport means employed comprises a bag-like unit attached to the lower portion of the walls of the cabin element and covering the open bottom thereof, and means for operating said bag-like unit in the manner of an air cushion device for effecting movement of the cabin element on said support surface.

9. A method according to any of the preceding claims, in which the cabin element is provided with a lavatory unit attached to the cabin element so that it increases the rigidity of the cabin element.

10. A ship (as hereinbefore defined) provided with at least one cabin element by the method claimed in any of the preceding claims.
