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AN ACCESS PLATFORM

THIS INVENTION concerns an access platform to support personnel, for example, for maintenance of a fixed column and is particularly intended to enable maintenance engineers to work upon the supporting legs or other structural members of an offshore drilling platform although it may be used in many applications where normally inaccessible parts of a structure require attention.

Safety regulations require that if a supporting cage or platform is to be lowered into a working position with personnel on board, then extreme safety standards must be met including the use of dual suspension lines and winches in case the lines from one winch should fail.

Such regulations do not usually apply to self-lowering equipment which may be used by skilled personnel to descend from an elevated position to a work place there below.

It is therefore an object of the present invention to provide an access platform to support personnel and which may be lowered into position unoccupied and fixed in said position by an operator

suspended on his own support lines. It is intended, that once the operator has fixed the access platform in position, he and/or others may then occupy same to carry out maintenance work and afterwards leave the platform and disconnect it from the work piece so that it may be recovered unoccupied.

According to the present invention, an access platform to support personnel, for maintenance of a fixed structure, comprising a platform base, cable means for suspending same in a horizontal attitude, and at least one tie member adapted to pass around the fixed structure and having means whereby the tie member may be made fast on the platform to brace the latter rigidly against the structure sufficiently to support the platform and prevent it from falling away from the structure in the event of failure of the suspending cable means.

Two embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:-

Fig. 1 illustrates schematically, in elevation, an access platform made in accordance with the invention and made fast in contact with a fixed column;

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Fig. 2 is a horizontal section taken along line II-II of Fig. 1;

Fig. 3 is a plan view of a part of the access platform.

and Fig. 4 is an isometric view of a second embodiment of the invention.

Referring now to Figs. 1 to 3 of the drawings it is to be assumed that work is to be carried out on a fixed column 10 which may form part of the structure of an offshore drilling rig.

An access platform generally indicated at 11 is to be made fast on the column 10 such that it may be occupied by maintenance engineers to carry out work on the column. The platform consists essentially of a rectangular base frame 12, four upright corner members 13 and a rectangular guard rail 14 extending horizontally around the tops of the corner members 13.

From the corners of the guard rail 14 there extend upwardly four supporting cables 15 which, via a spacer plate 16 are attached to a single suspension line 17.

Extending forwardly from the rectangular part of the base frame 12 is a bracing frame 18 which, as

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can be seen in Fig. 2, is removably bolted to the front member of the base frame 12. The forward edge of bracing frame 18 is V-shaped to encompass part of the circumference of column 10.

Still referring to Fig. 2, anchored at 19 to one side of the forward region of base frame 12 is a flexible ratchet strap or tie member 20 which, in use, is taken around column 10 and made fast by a ratchet handle 21 attached to the opposite side front region of the base frame 12.

Pivotally attached to the two rear corners 22 of the base frame 12 is a leg 23 which, as can be seen in Fig. 1, is adapted to extend downwardly and forwardly at an angle of approximately 30° into contact with the surface of column 10 beneath the bracing member 18.

The leg 23 is divided longitudinally into two parts which are joined at 24 by bolts and the forward edge 25 of the leg is V-shaped to accommodate a part of the circumference of the column 10.

Extending upwardly from the leg 23 and attached at 24 thereto is a line 26 which is removably fixed to a jammer 27 and thus holds the leg 23 in

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tension against the column 10.

A toe board 28 surrounds the base of the platform to prevent tools and other equipment from being lost over the side.

The access platform is installed by being lowered initially to the required level whilst unoccupied. During descent, leg 23 may depend, at a greater angle, from the base frame 12 with line 26 extended. Once at the correct level, an engineer who has descended to approximately the same level on his own descent lines, is able to manoeuvre to take strap 20 around column 10 and secure it by the ratchet handle 21 thus bracing the frame 18 against the column surface. The engineer will then draw line 26 upwardly through jammer 27 until the line is taut with leg 23 braced against the surface of the column at 25.

With the platform assembled in this way, little or no tension remains on main suspension line 17, the entire device being largely supported by and braced against the column 10. In this condition the engineer and other personnel may enter the platform to carry out work on the column. Once the work is completed and the personnel have left the platform, it may be released from the column by reversing the installation procedure and moved, for example, to a

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different level whereat further work may be conducted.

It will be appreciated that the bracing frame 18 and the forward part of leg 23 may be interchanged with similar members having different front edge formations to match different work surfaces, and the adjustability of leg 23 enables it to be braced against, for example, a part of the column having greater or lesser dimensions than the part with which frame 18 is in contact.

The fixing of the access platform rigidly with respect to the column 10 satisfies safety regulations and provides a rigid and comfortable structure from which work may be carried out and in which tools and other equipment may be safely deposited within the confines of the toe board 28.

Referring now to Fig. 4, in an alternative arrangement, an access platform is provided for attachment to a horizontal structure. The requirement for a leg similar to leg 23 has been avoided by placing a pair of tie straps 30 near the top of the platform. In this case, bracing frame 18 has also been avoided by providing on each tie strap 30, close to its connection to the platform, a pair of contact blocks 31. The tie straps 30 are pivotally attached at selected positions

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32 to a pair of vertically disposed support struts 33 which are in turn adjustably attached to vertical front members 34 one on each side of the platform.

Thus with straps 30 attached to a fixed horizontal structure, the platform is braced against the latter and cannot fall away therefrom in the event of failure of the supporting cables 35 which are equivalent to cable 15 in the embodiment of Figs. 1 to 3. Straps 30 and blocks 31 may be pivoted through 90° for attachment to one or more fixed vertical structures, or if a single structure is present an extension strap (not shown) may be utilised to join the pair of existing straps.



CLAIMS

1. An access platform to support personnel, for maintenance of a fixed structure, comprising a platform base, cable means for suspending same in a horizontal attitude, and at least one tie member adapted to pass around the fixed structure and having means whereby the tie member may be made fast on the platform to brace the latter rigidly against the structure sufficiently to support the platform and prevent it from falling away from the structure in the event of failure of the suspending cable means.

2. An access platform according to Claim 1, wherein the suspending cable means is connected to one or more upright members on the platform.

3. An access platform according to Claim 1 or Claim 2, wherein said tie member comprises a flexible strap attached to a first position on the platform, there being a ratchet handle attached to a further position remote from said first position thus to receive and tighten the strap after passage around the structure.

4. An access platform according to any preceding claim, including a leg attached pivotally to the base of the platform and adapted to extend downwardly from beneath the latter and forwardly into contact with the



fixed structure beneath the tie member.

5. An access platform according to Claim 4, including a line attached to said leg, and means on said platform to receive and tension said line thus to brace the leg against the fixed structure in use.

6. An access platform according to any preceding claim, including a bracing frame removably attached to the platform base to extend forwardly therefrom into contact with the fixed structure when said tie member is made fast thus to brace the entire platform against the structure.

7. An access platform according to Claim 4 or Claim 5, wherein said leg includes an interchangeable forward part which is bolted to a part of the leg remote from its pivotal connection to the platform base.

8. An access platform according to Claims 6 and 7, wherein said bracing frame and the forward part of said leg are V-shaped to encompass a part of the circumference of a circular column forming said fixed structure.

9. An access platform according to any preceding



claim, wherein the platform base includes a peripheral toe board to prevent tools and other equipment from being lost over the side.

10. An access platform according to Claim 1, in which a pair of vertically disposed and horizontally spaced support struts are adjustably attached to a front portion of the platform and wherein a pair of tie straps are located in an upper region of said support struts and of said platform, for attachment to, a horizontal fixed structure.

11. An access platform according to Claim 10, including on each tie strap, close to its connection to the platform, a pair of contact blocks thus enabling the platform to be braced by said tie straps against the fixed structure, and wherein each said tie strap is adapted for pivotal attachment at selected positions along the lengths of said vertically disposed support struts such that, by adjustment of the struts with respect to the platform, and of the tie straps with respect to the struts, the platform may be located at various positions relative to a horizontal or vertical fixed structure.