The present invention provides a board sport training device and a method of use. In accordance with an embodiment, a board sport training device comprises a base comprising a plurality of separate base portions having at least a front pivot area and a rear pivot area. The front pivot area and the rear pivot area are positioned along a longitudinal axis of the platform and separated by a distance from the platform. The front pivot area and the rear pivot area are also separated by a distance from each other such that the platform is rotatable from side-to-side when the front pivot area and the rear pivot area are in contact with a ground surface and the user steps to various positions between the front pivot area and the rear pivot area. The rear pivot area is inset from a rear end of the platform such that the platform is rotatable about the rear pivot area when the user steps to a position such that only the rear pivot area is in contact with the ground surface.
BOARD SPORT TRAINING DEVICE AND METHOD OF USE

[0001] This application in a continuation-in-part of U.S. patent application Ser. No. 11/318,204, filed Dec. 23, 2005, the entire contents of which are hereby incorporated by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to the field of training devices for board sports.

BACKGROUND OF THE INVENTION

[0003] Board sports such as surfing, windsurfing, snowboarding, wake boarding, and others require the use of advanced balancing skills in an unstable and dynamic environment. Additional skills also must be mastered. For surfing, these skills include the ability to quickly move from a prone position (on one’s stomach) to a standing position, the ability to step to an appropriate position on the board to speed up or slow down, the ability to adjust the body to perform proper turning technique and the ability to perform advanced maneuvers, such as cross-stepping and drop-knee turns. It can be difficult to practice these skills in the customary environment for the sport, such as surfing in the water, because the opportunities to practice are limited. In addition, the customary environment may not allow the needed movements and balancing to be repeatedly practiced.

[0004] Simulators have been developed that use external forces generated by mechanical devices, such as motors, pumps, springs and the like to move and tilt a surfboard-like standing platform. In reality, the movement of a surfboard is mostly controlled by changing the vertical and horizontal position and foot pressure of the surfer. These simulators tend to generate board motions independent of the rider’s foot positions, pressures, and vertical position of the center of gravity and, thus, do not effectively help the users’ ability to control and manipulate the surfboard.

[0005] Balancing devices, such as the Indo Board™ which has a flat board surface with a separate cylindrical drum beneath the board, have also been designed or developed to help practice balancing skills. However, these devices are limited in their movement and do not accurately reflect the stepping, cross-stepping, and turning techniques that are useful in an actual surfing ride.

[0006] The devices discussed above tend to require a hard surface in order to be used and may even require electricity. This can make them impractical for use at beaches, where most surf school classes are conducted.

[0007] Thus, there is a need for an improved training device for board sports. It is towards this end that the present invention is directed.

SUMMARY OF THE INVENTION

[0008] The present invention provides a board sport training device and a method of use. In accordance with an embodiment, a board sport training device comprises a base configured for attachment to a platform. The base comprises a plurality of separate base portions having at least a front pivot area and a rear pivot area. The front pivot area and the rear pivot area are positioned along a longitudinal axis of the platform and separated by a distance from the platform. The front pivot area and the rear pivot area are also separated by a distance from each other such that the platform is pivotable from side-to-side when the front pivot area and the rear pivot area are in contact with a ground surface and the user steps to various positions between the front pivot area and the rear pivot area. This allows the user to perform side-to-side balancing. Stepping, cross-stepping, and turning maneuvers may also be practiced while performing side-to-side balancing. The rear pivot area is inset from a rear end of the platform such that the platform is rotatable about the rear pivot area when the user steps to a position such that only the rear pivot area is in contact with the ground surface. This allows the user to practice turning maneuvers.

[0009] In accordance with another embodiment, a method of board sport training using a training device is provided. A training device comprising an elongated platform for receiving a user and a base disposed beneath the platform is obtained. The base comprises a plurality of separate base portions having at least a front pivot area and a rear pivot area, the front pivot area and the rear pivot area being positioned along a longitudinal axis of the platform and separated by a distance from the platform, and the rear pivot area being inset from a rear end of the platform. The user is positioned on the platform such that a center of gravity of the device and the user is between the front and rear pivot areas such that the user performs side-to-side balancing. The user is positioned on the platform such that a center of gravity of the device and the user is over the rear pivot area such that the user rotates the device about the rear pivot area.

[0010] In accordance with yet another embodiment, a board sport training device comprises an elongated platform for receiving a user and a plurality of separable base portions disposed beneath the platform. The base portions comprise a plurality of pivot areas that are spaced apart along a longitudinal axis of the platform and separated by a distance from the platform. The platform is pivotable from side-to-side when the plurality of pivot areas are in contact with a ground surface and the user steps to various positions between a front one of the pivot areas and a rear one of the pivot areas.

[0011] These and other aspects of the invention are described in more detail herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 illustrates a side view of a board sport training device in accordance with an embodiment of the present invention;

[0013] FIG. 2, illustrates a bottom view of the board sport training device in accordance with an embodiment of the present invention; and

[0014] FIG. 3 illustrates a front view of the board sport training device in accordance with an embodiment of the present invention;

[0015] FIG. 4, illustrates a bottom view of a single pod of the board sport training device in accordance with another embodiment of the present invention;

[0016] FIG. 5, illustrates a side view cross-section of a single pod of the board sport training device in accordance with another embodiment of the present invention;

[0017] FIG. 6, illustrates a front, or a rear, view of a single pod of the board sport training device in accordance with another embodiment of the present invention;

[0018] FIG. 7, illustrates a side view of four pods of the board sport training device which have been stacked for
packing, shipping, or storage in accordance with another embodiment of the present invention;

[0019] FIG. 8 illustrates a bottom view of four pods of the board sport training device attached to a platform in accordance with another embodiment of the present invention; and

[0020] FIG. 9 illustrates a side view of four pods of the board sport training device attached to the bottom surface of a platform in accordance with another embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0021] The invention provides a training and practice device for developing balance and coordination in general, and specifically for developing a natural body movement in unstable and dynamic circumstances similar to surfing or windsurfing on water. The device allows surfers to practice a combination of realistic balancing skills concurrent with the techniques of standing, stepping, and turning. Unlike prior training devices, the present invention permits the users to experience the real sensation of how their position and technique can control not only their balance but also the direction and the speed of the surfboard. This is particularly true on a long board, where stepping, cross-stepping, drop-knee turns, and other techniques are utilized.

[0022] The skills gained from such practice can also benefit other board sports such as windsurfing, snow boarding, skateboarding, wake boarding, and other board-related sports. The invention is transportable and durable (even in a natural shoreline environment) which make it very easy for surfers and trainees to bring it along to practice where the learned skills can be put in use immediately.

[0023] FIG. 1 illustrates a side view of a board sport training device 100 in accordance with an embodiment of the present invention, while FIG. 2 illustrates a bottom view of the board sport training device 100. As shown in FIGS. 1 and 2, the device comprises an elongated platform 102 and a base 104. A commercially available conventional surfboard may comprise the platform 102. Alternatively, the platform 102 may be constructed specifically for use as part of the training device 100.

[0024] The base 104 is disposed beneath the platform 102 and comprises a front pivot area 106 and a rear pivot area 108. The base 104 is preferably formed as a unitary body of which the front pivot area 106 and the rear pivot area 108 are portions. For example, the base 104 may be constructed from a substantially rigid material, for example, a plastic, such as polyethylene, polyvinyl chloride or acrylonitrile butadiene styrene (ABS), or fiberglass. The base 104 may be formed as a substantially hollow shell of the substantially rigid material. Alternatively, the base may be of substantially solid construction. For example, the base 104 may be formed as a shell of substantially rigid material having a substantially solid core, which may, for example, include a foam plastic such as polystyrene.

[0025] The base 104 may be coupled to the bottom surface of the platform 102 using straps 112. For example, the straps 112 may pass through apertures 114 in the base and terminate in hooks 116 which grasp edges of the platform. Alternatively, the straps may be wrapped around the platform 102. The straps 112 allow the base 104 to be easily attached to a platform 102 and then easily removed when the user is ready to try their skills in the water. Thus, the top surface of the base 104 may be shaped to adapt to the bottom surface of a specific board (surfboard, windsurf board, snowboard, skateboard, wakeboard, or others). Where the platform 102 is a conventional surfboard or other type of board having one or more skegs (i.e. fins), these may be removed before the base 104 is attached.

[0026] Alternatively, rather than the platform 102 and the base 104 being separable, they may be constructed as a unitary body. For example, the platform 102 and the base may be formed as a single piece of molded plastic or fiberglass.

[0027] The front pivot area 106 and the rear pivot area 108 are positioned substantially along a longitudinal axis 110 (FIG. 2) of the platform 102 and separated by a distance from the bottom surface of the platform 102. For example, the distance between the bottom surface platform 102 and the front pivot area 106 may be a maximum of approximately 4-5 inches, while the distance between the bottom surface of the platform 102 may be a maximum of approximately 7-8 inches. In other words, the maximum height of the base 104 at the front pivot area is approximately 4-5 inches, while the maximum height of the base 104 at the rear pivot area 108 is approximately 7-8 inches. In addition, the front pivot area 106 and the rear pivot area 108 are separated by a distance from each other. This distance is sufficient to allow room for the user to step to various positions along the platform 102 between the front pivot area and the rear pivot area while performing side-to-side balancing. Therefore, the distance between the front pivot area 106 and the rear pivot area 108 may be at least two feet, and is preferably approximately three to seven feet or more, depending on the length of the platform 102. It will be apparent that the dimensions described herein can be varied. As can be seen from FIG. 2, the base 104 at the rear pivot area 108 is preferably taller than it is at the front pivot area 106. The width of the base 104 may be between 25% and 95% of the typical board’s lower surface width. The length of the base 104 may be between 25% and 90% of the typical board’s lower surface length. Thus, as shown in FIG. 2 exemplary dimensions of the device 100 for a 9.5 foot long board may be as follows: the base may be approximately 7 feet long (dimension A in FIG. 2); the front pivot area 106 may be separated by a distance from the platform 102 by approximately 4-5" (dimension B in FIG. 2); the rear pivot area 108 may be separated by a distance from the platform 102 by approximately 7-8" (dimension C in FIG. 1); the base may be approximately 6-12" wide (dimension D in FIG. 2) and the distance between the front pivot area 106 and the rear pivot area 108 may be approximately 4/5 feet (dimension E in FIG. 1). It will be apparent, however, that other dimensions may be selected.

[0028] FIG. 3 illustrates a front view of the board sport training device 100. From FIG. 3, it can be seen that the front pivot area 106 and the rear pivot area 108 are substantially semi-circular in cross-section. In a preferred embodiment, the front pivot area 106 and the rear pivot area 108 are substantially semi-elliptical in cross-section. The semi-elliptical and/or semi-circular bottom surface of the base 104 interacts with the ground surface on which one has chosen to use the device.

[0029] Referring to FIGS. 2 and 3, the base 104 is preferably tapered both in height and width at its ends where it meets the bottom surface of the platform 102. In addition,
the base 104 is preferably contoured so that the tapered ends smoothly blend with the front and rear pivot areas 106 and 108. Also, the base 104 is preferably contoured so that it smoothly transitions from the rear pivot area 108 to the front pivot area 106, the rear pivot area 108 having greater height than the front pivot area 106. To facilitate rotation of the training device 100 about the rear pivot area 108, the dimension of the rear pivot area 108 is preferably limited in the longitudinal direction. This may be accomplished by contouring the base 104 such that its height is gradually decreasing at all sides of the rear pivot area 108, thus, forming a substantially rounded profile seen from the side of the device 100 as in FIG. 2 and as seen from the front of the device 100 as in FIG. 3.

[0030] Many surf school classes occur at the beach where the instructors can demonstrate and the students can experience the actual waves immediately after the class instruction on the beach. Thus, the device 100 is suited for use on a soft ground surface, such as wet sand near the water, grass or dirt. The device may also be used on hard surfaces such as pavement. To use the device 100, the device 100 is placed with the base 104 on the ground surface so that the front pivot area 106 and the rear pivot area 108 are in contact with the ground surface. The platform 102 is then pivotable from side-to-side, thus, simulating the instability encountered while surfing or windsurfing on water. This allows the user to perform side-to-side balancing so long as a center of gravity of the device and the user is between the front and rear pivot areas 106 and 108. Paddling, moving from a prone paddling position to a standing position, turning and stepping maneuvers may also be practiced while performing side-to-side balancing with the device 100 in this position. Stepping toward the front of the platform 102 simulates a maneuver which would increase the speed of a surfboard while stepping toward the rear of the platform 102 simulates a maneuver which would decrease the speed of a surfboard.

[0031] The rear pivot area 108 is inset from a rear end of the platform such that the platform is rotatable about the rear pivot area 108 when only the rear pivot area 108 is in contact with the ground surface. Thus, the user may move to a position on the platform 102 such that a center of gravity of the device and the user is over the rear pivot area. For example, the user may place one foot behind the rear pivot area 108 and one foot in front of the rear pivot area 108 so that the front pivot area 106 can be lifted off of the ground and the device may be rotated about the rear pivot area 108. This allows the user to practice turning maneuvers. Because the base 104 is taller at the rear pivot area 108, the front pivot area 106 can be lifted off of the ground while the platform 102 is substantially parallel with the ground.

[0032] The location of the rear pivot area 108 may depend upon the specific board sport (surfboard, windsurf board, snowboard, skateboard, wakeboard, or others) for which the device 100 is used. For example, a typical surfboard will have the pivot point nearer the aft portion of the board. Where the device 100 is used for windsurfing, this pivot area may be closer to the center, being nearly below the mast of the typical windsurf board.

[0033] As previously described, the base 104 may be formed as a unitary body. In an alternative embodiment of the invention, the base is effectively partitioned into a plurality of base portions, which are referred to herein as "pods." These pods are separate from each other and may be attached to the bottom surface of a platform (for example, a surfboard or windsurf board) along its longitudinal axis and provide essentially the same functionality as the base 104 of the previously described embodiment of this invention. The pods are preferably separable from the platform for transportation and storage and so that the platform can be used for other purposes. For example, when the platform is a surfboard, the pods can be removed so that the surfboard can be used in a conventional manner.

[0034] Similar to the base 104 described above, the pods may be constructed from a substantially rigid material, for example, a plastic, such as polyethylene, polyvinylchloride or acrylonitrile butadiene styrene (ABS), or fiberglass.

[0035] Although this embodiment of the present invention is partitioned into multiple pods, when used together as described in detail below, they accomplish the same wide range of useful functional elements of balance and technique training for board sports that the aforementioned and described embodiment of the invention that is one unitary body.

[0036] Each pod has at least one convex protrusion which forms a bottom surface pivot area. In a preferred embodiment, each pod comprises two semi-circular convex protrusions which form the bottom surface pivot area. In this case, the two semi-circular protrusions are preferably separated by a swale or depression in the pod's lower surface area. Each pod has a substantially flat top surface perimeter which mates with the substantially flat bottom surface of a platform (e.g., a surfboard). The majority of the top surface area within the perimeter of each pod is shaped as two concave (bowl-like) semi-circular shapes in the same proportion as the two semi-circular convex protrusions that form the bottom surface area of the pod. Thus, each pod may be formed from a single flat sheet of material that is molded through pressure and/or heat. The bowl-like concave shapes of each pod allow a plurality if the pods to be stacked together for convenient storage and cost effective packaging and shipping. The pods are stacked by the convex protrusions of one or more of the separable portions extending into the concave indentations of another one of the separable portions.

[0037] The pods are preferably attached to the platform by elastic straps which are preferably attached to an edge (i.e. its rail) of the platform by hooks or clips at one end of each strap. The other end of each strap is preferably attached to the pod 201.

[0038] FIG. 4 illustrates a bottom view of a single pod 201 of the board sport training device in accordance with another embodiment of the present invention, while FIG. 5 illustrates a side view cross-section of a single pod 201 of the board sport training device. FIG. 6 illustrates a front view of a single pod 201 of the board sport training device. The rear view of a single pod 201 is a mirror image from the front view. Thus, FIG. 6 illustrates the convex pivot areas of the pods 201 which allow the board sport training device to pivot from side-to-side when placed on a ground surface.

[0039] Each pod 201 of the board sport training device may have attachment points 202 to which straps 203 are fixed at one end which secure the attachment of the pod 201 to the platform. Curved hooks 204 are preferably disposed at the other end of each of the elastic straps 203. The hooks 204 wrap around the platform rails 301 (FIG. 9).

[0040] Each pod 201 preferably comprises two substantially semi-circular convex protrusions 205 which form the bottom lower surface pivot area. The two convex protrusions
are preferably separated by a swale or depression in the pod’s lower surface area. Each pod preferably has a substantially flat top surface perimeter area to accommodate attachment to the substantially flat bottom surface of a platform.

The flat top surface area of the pod is preferably limited to the perimeter of the pod. The majority of the top surface area of the pod comprises two concave (bowl-like) semi-circular shapes in the same proportion as the two semi-circular convex protrusions that form the bottom surface area of the pod. The bowl-like concave shapes of the pod will allow for multiple pods to be stacked together for convenience storage and cost effective packing and shipping. FIG. 7 illustrates a side view of multiple pods stacked for packing, shipping, and storage.

Exemplary dimensions for the pods may be as follows: The horizontal width (F) may be between approximately eight and eighteen inches and is preferably approximately fourteen inches. The horizontal length (H) may be between approximately twelve and thirty inches and is preferably approximately twenty-one inches. The distance (I) between the two peaks of protrusions of each pod is preferably approximately half of the length H. Accordingly, the distance (I) may be between approximately six and fifteen inches and is preferably approximately ten and one-half inches. It will be apparent the dimensions given herein are exemplary and can be varied.

FIG. 8 illustrates a bottom view of multiple pods of the board sport training device attached to the bottom surface of the platform. The pods of the board sport training device are attached along the longitudinal distance (K) of the platform. The distance K depends upon the length of the platform, but typically may be approximately five to seven feet. As shown in FIG. 8, the pods are preferably spaced apart from each other by a distance (J). The distance (J) can be adjusted by the user to allow use of varying sizes and/or types of platforms. The distance (J) may depend upon the strength and rigidity of the platform, and can range from zero inches to several feet. The distance (J) may typically be zero and twelve inches.

FIG. 8 also illustrates that each pod is attached to the platform by stretching the straps to the width of the platform’s rails and attaching the strap hooks to the rails. The number of pods attached to a particular platform will depend upon the length of the platform that is being used. A longer board platform may require the use of three or four pods. A shorter board platform may require only the use of one or two pods to accomplish the technique and balance training task.

FIG. 9 illustrates a side view of multiple pods of the board sport training device attached to the bottom surface of a platform (i.e. a surfboard). The pods of the board sport training device are attached in sequence along the longitudinal distance (K) of the platform. The pods are placed a distance (J) apart from each other. The distance (J) can be adjusted by the user to allow use of varying sizes and/or types of platforms.

FIG. 9 also illustrates that each pod is symmetrically designed so that it can function equally well as the front pivot point if it is placed at or near the front of the platform or the rear pivot point if it is placed towards the rear of the platform.
side-to-side when the plurality of pivot areas are in contact with a ground surface and the user steps to various positions between a front one of the pivot areas and a rear one of the pivot areas.

13. The device according to claim 12, wherein the rear pivot area is inset from a rear end of the platform such that the platform is rotatable about the rear pivot area when the user steps to a position such that the front pivot area is lifted off the ground surface.

14. The device according to claim 12, wherein each base portion comprises two semicircular convex protrusions separated by a swale, each convex protrusion forming one of the pivot areas, and each base portion having a substantially flat top perimeter for contacting a lower surface of the platform.

15. The device according to claim 12, wherein the base portions are separable from the platform.

16. The device according to claim 15, wherein each of the base portions is attached to the platform by one or more straps.

17. The device according to claim 15, wherein the platform comprises a surfboard.

18. The device according to claim 14, wherein the base portions are substantially identical to each other.

19. The device according to claim 14, wherein the base portions are stackable by the two semicircular convex protrusions of one or more of the base portions extending into two concave indentations of another one of the base portions.

20. The device according to claim 12, wherein the base portions are substantially identical to each other.

21. A board sport training device comprising a plurality of separate base portions configured for attachment to a bottom surface of a sport board by straps, each base portion comprising at least one convex protrusion and each base portion having a substantially flat top perimeter for contacting a lower surface of the platform and, when attached to the sport board, the convex protrusions form a plurality of pivot areas spaced apart along a longitudinal axis of the sport board and separated by a distance from the platform such that the platform is pivotable from side-to-side when the plurality of pivot areas are in contact with a ground surface and a user steps to various positions on the sport board.

22. The device according to claim 21, wherein the base portions are substantially identical to each other.

23. The device according to claim 22, wherein base portions are stackable by the convex protrusions of one or more of the separable portions extending into the concave indentations of another one of the separable portions.

24. The device according to claim 21, wherein each of the base portions is attached to the platform by one or more straps.

25. The device according to claim 21, wherein each base portion comprises two semicircular convex protrusions separated by a swale, each convex protrusion forming one of the pivot areas, and each base portion having a substantially flat top perimeter for contacting a lower surface of the platform.

26. A method of board sport training using a training device, comprising steps of:

obtaining a training device, the training device comprising an elongated platform for receiving a user and a base disposed beneath the platform, the base comprising a plurality of separate base portions having at least a front pivot area and a rear pivot area, the front pivot area and the rear pivot area being positioned along a longitudinal axis of the platform and separated by a distance from the platform, and the rear pivot area being separated by a distance from a rear end of the platform;

positioning the user on the platform at various positions between the front pivot area and the rear pivot area such that a center of gravity of the device and the user is between the front and rear pivot areas and the user performs side-to-side balancing; and

positioning the user on the platform such that a center of gravity of the device and the user is over the rear pivot area such that the user rotates the device about the rear pivot area.

27. The method according to claim 26, further comprising the user moving from a prone paddling position to a standing position while performing side-to-side balancing.

28. The method according to claim 26, further comprising the user stepping along the device while performing side-to-side balancing.

29. The method according to claim 26, further comprising placing the device on a hard ground surface.

30. The method according to claim 26, further comprising placing the device on a soft ground surface.

31. The method according to claim 30, wherein the soft ground surface comprises wet sand of a beach.