ABSTRACT: A portable shelter having a storage container and a roof and wall section that folds in 180° configuration for storage in the storage container. A large storage space in the lower portion of the container. Foldable roof support beams are stored below the roof and wall section in the container. End walls are hinged to floor sections which fold out from opposite sides of the container. Flysheet are secured to the roof and wall sections and have locking seals which attach to flanges on the central container endwalls and floor to provide seals. Leveling jacks are attached to the floor sections to level the floor of the shelter.
PORTABLE FOLDABLE SHELTER

BACKGROUND OF THE INVENTION

It has been the common practice when providing troop shelters to build shelters that are somewhat permanent in nature, though they may be called portable shelters. However, the need for relocation and mobility in limited warfare situations requires lightweight, highly mobile shelters. Experience has proven that troops living in an austere situation will continue to utilize their standard of living utilizing any free time available. A design which would avoid this environmental deficiency would make more man-hours available to be devoted to the assigned tasks.

BRIEF SUMMARY OF THE INVENTION

According to this invention a lightweight 100 percent recoverable portable shelter which may be stored in storage container 3x8x13 feet expands into a shelter 8x13x33 feet. A novel folding pattern for the wall and roof of an accordion type structure permits the walls and roof to fold in a 180° configuration for storage to leave about 160 cubic feet of storage area for personal gear such as cots, pillows and other gear. Folding end walls and floor members unfold from the sides of the storage container. Foldable roof support beams are secured to the center structure and end walls. The accordion wall and roof structure is secured to the center structure, floor and end walls with special type seals.

IN THE DRAWINGS

FIG. 1 is a perspective view of a fully errected shelter of the invention.
FIG. 2 is an enlarged partially cutaway view of the shelter of FIG. 1.
FIG. 3 shows the shelter of FIG. 1 in its stored condition.
FIG. 4 is a plan view of one wall and roof section for the device of FIG. 1.
FIG. 5 shows the scoring system for the device of FIG. 4.
FIG. 6 shows one of the fold lines of the device of FIG. 4 in its fully folded condition.
FIG. 7 is a schematic view of the device of FIG. 1 with one of the floor and end wall sections in its partially extended position.
FIG. 8 is a schematic view of the device of FIG. 7 in a further extended position.
FIG. 9 shows floor leveling jacks attached to the floor section.
FIG. 10 is an enlarged illustration showing a partially cut away view of a leveling jack attached to the floor section.
FIG. 11 shows one of the foldable support beams for the device of FIG. 1.
FIG. 12 shows the locking mechanism for the device of FIG. 11.
FIG. 13 shows the attachment for the support beam of FIG. 11 and an end wall of the device of FIG. 1.
FIG. 14 shows the support and temporary support for the support beam within the central storage section.
FIG. 15 shows the central storage section end of the support beam of FIG. 11 with a roof retainer.
FIG. 16 shows the connection between opposing beams within the central storage section.
FIG. 17 is a schematic illustration showing the support beams and roof and wall section stored within the central storage section.
FIG. 18 is a plan view showing the supports for the support beams in the central storage section.
FIG. 19 is a schematic view of the device of FIG. 1 with one of the roof and wall sections partially extended.
FIG. 20 shows the attachment of the roof section to the central storage section.
FIG. 21 shows the attachment used for attaching roof and wall section to the end wall and the wall section to the central storage section.
FIG. 22 shows the attachment used to attach the wall section to the floor section.
Means other than jacks can be used for leveling, for example, adjustable floor pads.

There is thus provided a lightweight, easily constructed, 100 percent recoverable shelter that can be erected in about 4 man-hours and which stores in a compact storage container.

We claim:

1. A portable shelter, comprising: a storage container adapted to form the central portion of said shelter; a first floor member being hinged to one side of said container and a second floor member being hinged to the other side of said container; each floor member comprising a pair of hinged floor sections; an end wall member hinged to the outer end of each outermost floor section of said floor members; said end wall members being foldable with said floor members into opposite sides of said storage container with one of the hinged portions of each of the floor sections forming the sides of said storage container; a pair of accordion-type roof and wall sections connected to said storage container and extendable from opposite sides of the storage container toward said end wall members; said roof and wall sections being formed from flat sheets of foamboard with the roof and walls being formed in accordion-type pleats; the direction of the fold at the joints between the roof and walls being in the opposite direction to the fold of each of the folds in the remainder of the roof and wall members; the fold in one direction at the joint of the roof and wall sections being longer than the folds in the other direction; said folds in the joint being interconnected by folds in the same direction as the shorter of the folds of the roof and wall joint with said interconnecting folds being on lines forming approximately 90° angles in the unfolded state with the apices of the angles being located at the junction of the folds of the roof and wall joints and the opposite folds of the roof and wall sections whereby said walls extend substantially parallel to said roofs in said storage container; a plurality of roof support beams; means for supporting one end of said beams in said storage container; means for supporting the other end of said beams on said end walls; means for sealing the roof and wall sections to said storage container; said end wall and said floor members and means for supporting said roof and wall sections and said support beams within said storage container.

2. The device as recited in claim 1 wherein said support beams are hinged a predetermined distance from one end whereby said beam can be folded for storage in said container; means positioned adjacent the hinge joint for locking said beam in its extended position.

3. The device as recited in claim 2 wherein the means for sealing the roof and wall sections to the end walls, floors and central container include flanges on said end walls, floors and central container and resilient means connected to said roof and wall sections for engaging said flanges.

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