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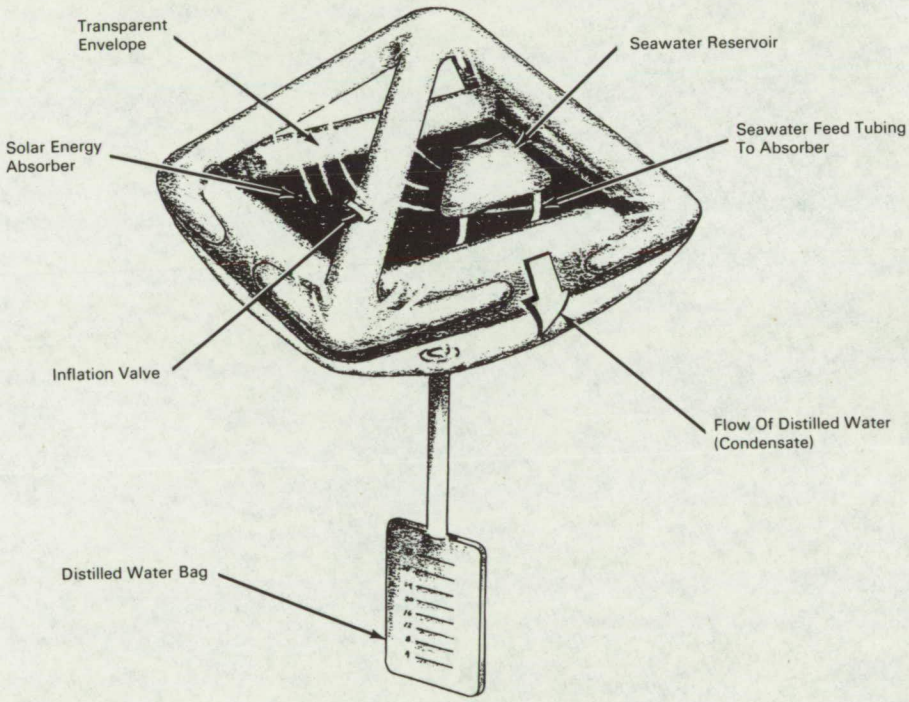
NASA TECH BRIEF

Emergency Solar Still Desalts Seawater



The problem: To develop a lightweight apparatus that will produce small amounts of fresh water for individual survival on the open sea.

The solution: An inflatable buoyant apparatus that utilizes solar energy as a source of heat for distilling seawater into fresh water. The still, weighing only 1 pound and occupying a volume of only 40 cubic inches when packaged, is capable of producing approximately 2 pints of drinking water a day.

How it's done: The materials used in the construction of the still are polyvinyl chloride and a black taffeta which serves as a solar energy absorber. The still, normally folded into a compact package, is readily inflated to form a buoyant pyramidal structure when it is desired to make it operational. An outer envelope of transparent polyvinyl chloride serves both as a window for solar radiation and as a condensing surface for the fresh water evaporated from the heated salt water contained on the absorber material on the inside base of the still. Seawater is admitted to the absorber material by means of tubing connected to a small reservoir which is fastened to one of the sloping faces of the transparent envelope. The distilled water condensing on the sloping inside surfaces of the envelope flows down to the inside base of this envelope and

(continued overleaf)

thence through a tube to a small storage bag. This bag is weighted to keep it submerged beneath the surface of the sea to cool the distilled water.

Note: Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
P.O. Box 1537
Houston, Texas, 77001
Reference: B65-10214

Patent status: NASA encourages the immediate commercial use of this invention. It is owned by NASA and inquiries about obtaining royalty-free rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

Source: Melpar, Inc. under contract
to Manned Spacecraft Center
(MSC-135)