

FRESH WATER FROM SEA FOR AIRMEN

How Sun Still Device Works

From J. B. DAVIES, Special Correspondent of THE ARGUS, in New York.

As announced last week science has solved the problem of providing drinking water for airmen who have been forced down on the sea.

Army and Navy airmen operating in the Pacific are being issued with the "sun still" device, which removes salt from sea water. It is a compact lightweight apparatus about the size of a folding pocket camera, but so long as the sun shines it will guarantee a continuous supply of drinking water.

It is hailed as the greatest boon for combat fliers since the invention of the Mae West life vests and self-inflating liferafts.

With food tablets and the distress signals already furnished, it gives pilots who have been forced down more than a 50-50 chance of survival.

EARLIER UNCERTAIN SOURCES

Until now men adrift at sea have had four possible, but uncertain, sources of water—heavy space-consuming casks of water, which sooner or later became exhausted; rain water caught in tarpaulins if and when it rained; chemicals which partially precipitate salt in sea water; and the ounce or two of water that could be squeezed out of fish if fish could be caught.

The new sun still device, which is already being issued in thousands to Army and Navy airmen, was demonstrated in New York last week. The inventor is Mr Richard Delano, a cousin of President Roosevelt.

He is a tall, studious young scientist in the late 30's. He first conceived the idea of using solar rays to distil sea water when he noticed moisture condensing on greenhouse windows and inside bottles washed up on the beach.

The sun still is a translucent bag, thin as paper, made of a plastic called vinylite. Inside the bag is a plastic screen, to which are attached about 50 black cellulose sponges

about 50 black cellulose sponges measuring two inches across when stretched out. That and a couple of tow lines are all there is to the ingenious device.

When the bag is unpacked it is primed with two quarts of seawater and then inflated to a sausage-like roll 30 inches by 12. It is dropped overboard and held in tow by two adjustable lines.

One surface of the translucent plastic bag marked "This side towards the sun" is made to float upwards by the manipulation of the towlines and the sun's rays then go to work.

The sponges inside the bag absorb 30 times their weight in seawater, and, being black, they readily absorb

the solar heat passing through the translucent outer skin. The water in the sponges evaporates and then condenses on the cooler plastic surface of the bag.

The surface is chemically treated so that the water as it condenses forms a solid sheet rather than separate drops. Drinkable water then runs down into a reservoir at the bottom of the envelope.

Under good sunny conditions a sun still will produce a pint and a half of fresh water in eight hours. The salt and other minerals remain in the sponges, which can be flushed out to allow the still to be used over and over again as long as needed.

I tasted water that had been distilled in the demonstration of the new device. It was not like a drink from a cool babbling brook, but it was certainly palatable, and, the inventor said, perfectly harmless.

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Mr Delano has handed over his invention to a large manufacturing concern in New York which is already producing 1,000 sun stills a day. Its plant is being enlarged, and the output will be increased to 2,000 a day within the next few months.

Important postwar commercial possibilities are envisaged by Mr Delano for enlarged models of the sun still. "I propose to prefabricate stills," he said, "and to ship them to all parts of the world where water is scarce, and sell the water commercially. The plan would be to have floating barges to catch rainwater, and where there is no rain, barges equipped with sun stills could use solar rays to manufacture drinking water."

USE BY COMMERCIAL PLANES

Mr Delano predicts that commercial planes flying regular trans-ocean schedules after the war will carry sun stills as part of their life-saving equipment.

For fliers operating ocean regions where the sky is usually overcast, the US Army Department has devised a chemical seawater desalting outfit. A pocket-size kit weighing about 22oz contains a number of briquettes which are about two-thirds silver. One of these briquettes is dropped into a plastic bag filled with a couple of quarts of seawater. Almost instantly the briquette disintegrates, and by precipitation removes most of the harmful salt and other injurious substances.