

SALINITY and SHIPBOARD DESALINISATION PROCESSES

Wise words from a retired US Navy Chief Petty Officer (even Marines listen to NAVY CPOs)

Source: NAVEDTRA 14331 Engineman 3
<http://www.navybmr.com/NAVEDTRA%2014331.html>

Chapter 15 excerpt:

Salinity, which is caused by chemical salts in seawater, is undesirable. Chemical salts in boiler feedwater will cause corrosion of the tubes. In addition, the normal operating temperature of a naval distilling plant may not be high enough to completely sterilize the distillate. Therefore, any carryover (or leakage) of seawater is a potential health hazard. Many types of microorganisms (primarily coliform bacteria) may be present. For these reasons, restrictions are placed on the operation of distilling plants while operating in either contaminated seawater or fresh water.

also found was:

This type of three-way valve is also used on the air ejector condenser drains and seawater heater drains of many distilling plants. These valves have locking pins that can be used to lock the main valve engaging lever in the reset position. The locking pins should NEVER be used without the specific permission of the engineer officer. Contaminated water can be put into clean tanks and systems at an excessive rate if these pins are used to prevent the trip valves from tripping.

Wonder if this applies to Agent Orange

Once you review Chapter 15, you will appreciate the amount of equipment and valves that make up the distilling plants onboard ships, and you will come to realize that equipment and parts fail, drains and intakes are clogged, specific parts of the system are disassembled cleaned and restored to operations. At a minimum the men performing the maintenance were definitely exposed to Agent Orange, which as we know TCDD is insoluble.

The evaporators that are responsible for taking suction from the sea and are strong enough to consume body parts even as witnessed onboard LPD-8 10 June of 1988 while replenishing some stranded Vietnamese on the South China Sea. Our Chief Machinist Mate was kind enough to give us the gory details as he performed the maintenance. (They are "always" secured when divers are working over the side, this Vietnamese gentleman didn't have diving tanks or even a snorkel on but fell from our monkey lines as he attempted to come aboard and was sucked up underwater to be found later onboard.)

Although the M21-1MR may not be convinced with ships at anchor in harbors of Vietnam for presumptive exposure, but chances are these ships were still making fresh water due to limited supply onboard ships. People bathe, cooks use the water to prepare meals, our uniforms are laundered, and freshwater washdowns are performed topside to wash off the salt from the paint while inport.

In my humble opinion, bluewater navy shipmates have gotten a raw CHT deal. I've been on CV, CG, LPD, FF, LKA, MSO, and AGF ships, and I've tasted salt water coming out of shipboard scuttlebutts (water fountains), and JP5, and some nasty smelling stuff that may have been CHT (Collection, Holding, and Transfer - to include human waste) for all I know. Potable storage tanks onboard ships present another problem with adjoining fuel tanks. Used to be Potable Water tanks were primed with lead based paints during the Vietnam era.

I'm convinced as Enlisted Surface Warfare Qualified the water was contaminated, period.

Rule 1. A Chief Petty Officer is never wrong. - Rule 2. When a CPO is clearly wrong refer to Rule 1.