DEHUMIDIFICATION

NAVAL SHIPS

BENEFITS

- Reduced corrosion and other moisture induced damages
- Extended MTBF on mechanical and electrical (sub)systems
- Ease of ship maintenance
- Improved ship readiness
- Fast reactivation after storage
- Optimal protection of ships stores
- Internal condensation avoided

Protect your fleet from the damaging affects of humidity

Situation

Naval vessels battle humidity both in dock and at sea. An environment with both high levels of humidity and salinity can create an aggressive agent that can cause electrical failures and/or mechanical damage in a multitude of areas around the ship. This extremely corrosive environment can effect the operation of the sensors, weapon and command systems and propulsion systems of naval ships adversely affecting the operational readiness of the ships.

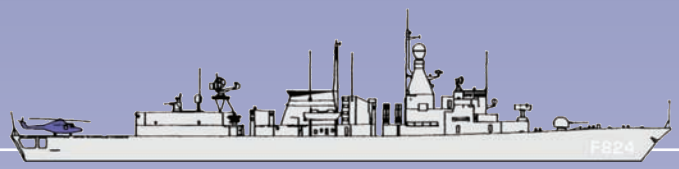
Battle

High levels of humidity can be a ship's worst enemy, resulting in costly damage to the ship and its internal components.

Moisture facilitates the formation of rust on metal parts of the ship, including hull, cables, sensors, propulsion subsystems, weapon and command (sub) systems. Rusting on any of these vital areas can lead to such problems as tension corrosion, susceptibility to bending and torque forces, reduction in electrical resistance and induced faults on electric and electronic components leading to breakdowns of complete systems.

Addition moisture related issues include: extensive maintenance labor, fungus in fuel tanks, decreased shelf life of ammunition and mold growth on dry good and equipment.

Munters

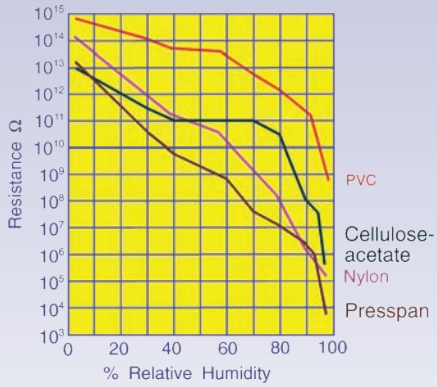


A humid environment in combination with a high salinity environment can create an aggressive agent that can cause electrical/electronic failures and/or mechanical damage in a multitude of areas all sorts of damage to ships. It needs no argument that the influence of moisture (in combination with a high salinity This extremely corrosive environment can effect the operation of on the sensors, weapon and command systems and propulsion systems of naval ships ultimately can cause serious problems and will adversely influence the operational readiness of the ships.

Relative Humidity (RH)

Corrosion can be prevented by reducing the RH or "taking away" the moisture from the atmosphere around corrosion sensitive parts and materials.

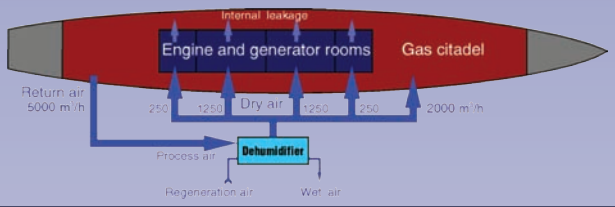
Traditionally, heat is most commonly used to reduce the RH of the air. But heating actually does not take away the moisture, and in fact can make it worse over a prolonged period, not to mention it being cost prohibitive.



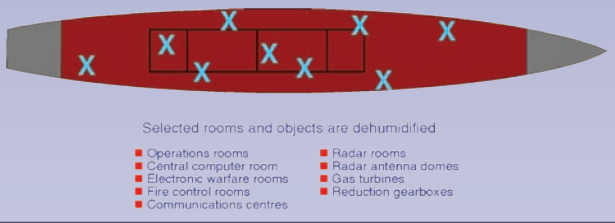
Ships in Storage

For ships in short or long term storage Munters dehumidification comprises:

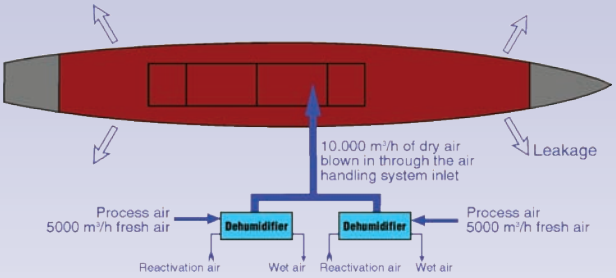
- One or more dehumidifiers
- A network of blower ducts for efficient distribution of dry air
- A control system of humidistats to maintain the specified RH
- Deck installations can be either removed and stored in dry air storage on shore, or covered using dehumidified cocooning



A 3600 tons frigate can be stored for short or long periods using 5000m³/h of dry air. The ship can be activated within 24 hours.



When the air handling system is removed during refit or intermediate maintenance, selected rooms with high value electronics can be protected using small dehumidifiers.



During refit or intermediate maintenance, in some cases the whole ship can be dehumidified using dehumidifiers placed on deck.

Active Status Ships

Active status ships can be protected in following ways:

- Protection of certain rooms or areas with stand alone dehumidifiers
- Protection of the whole gas citadel with dehumidification integrated into the ship air handling system.
- Protection during maintenance activities
- Protection of ships during maintenance can be split up in two categories
- During refit or maintenance activities, small man portable dehumidifiers can be used
- Use of the ships air handling system to distribute dry air throughout the ship both day and night

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