

Never underestimate the benefits of DE-ICING SYSTEMS

BY VICKI CORVO

For some marinas in the northern climes, winter freeze up has been a source of maintenance headaches and potentially significant financial losses.

The two major problems that occur with ice freeze are damage to docks/pilings and shoreline erosion. When ice builds up around docks and support pilings, the pilings tend to lift with the tide. During severe cold periods, the docks can become dislodged causing irreparable damage. Shoreline erosion occurs when the ice that has built up in the winter erodes the shoreline during the spring thaw, which creates tremendous problems for marinas.

To solve both these problems and prevent maintenance headaches, marinas need to be proactive. A good example of this proactive attitude occurred recently at a northern marina that had several docks lifted completely free from their foundation one winter due to ice freeze. This required the owners to repair the entire dock, at an estimated cost of nearly \$15,000. In addition, ice build-up on the shore during the spring thaw cost the owners an additional \$6,000 in materials and labor for shoreline restoration.

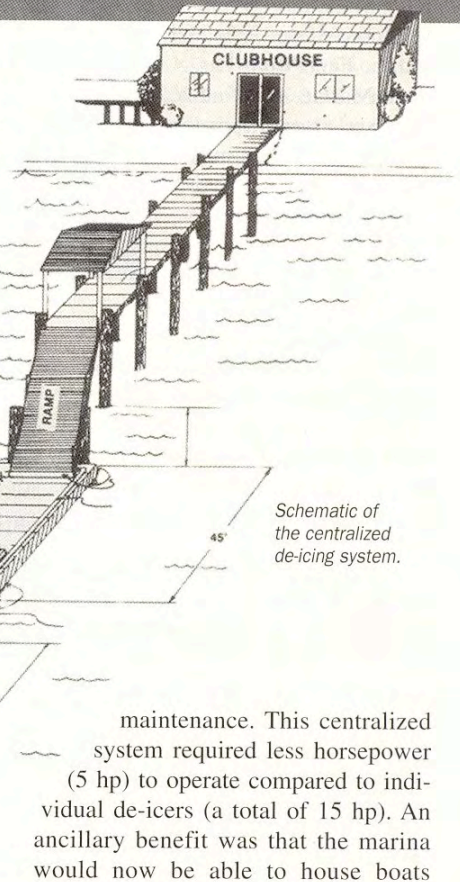
A case study

In preparing for the next winter season, the marina owner looked to install mechanical de-icers to keep individual slips free of ice. However, the marina owner was wary of making a major capital expenditure for numerous de-icing units on top of the money he had already spent to repair the damages that had occurred from the previous season. Moreover, he needed a quick return on his investment.

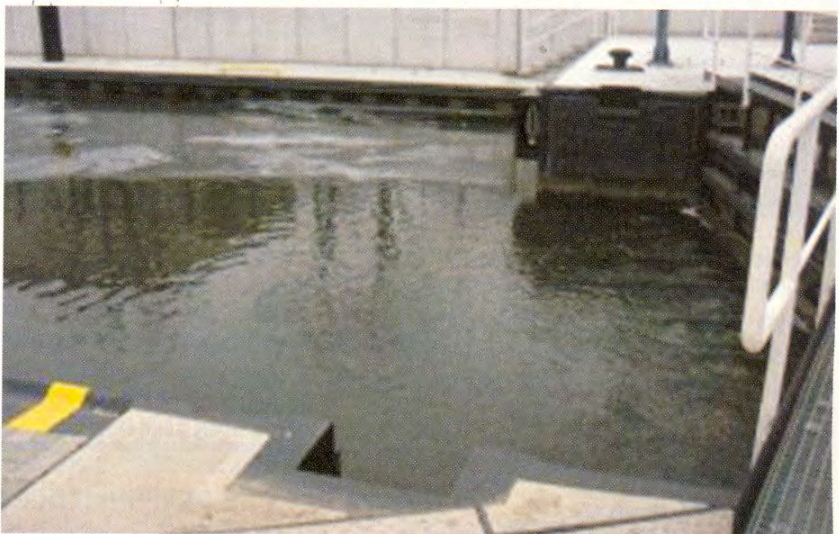
After examining various alternatives, the marina owner decided to install a central de-icing/aeration system.

Because it is a central system, it needs minimal maintenance. Because it is centralized, it allows the owner to treat the entire marina from one location. In addition, by installing the central de-icing/aeration system, the marina owner would be able to keep boats in their berths during the winter, which meant additional revenue to offset the major capital expenditure costs for the repairs made and the cost to purchase a centralized de-icer/aeration system.

In describing why he chose this de-icer system, the marina owner cited three reasons for selecting the system: ease of use, reduced costs, and minimal



maintenance. This centralized system required less horsepower (5 hp) to operate compared to individual de-icers (a total of 15 hp). An ancillary benefit was that the marina would now be able to house boats



Here's an example of what happens to a slip when a centralized de-icing system is installed for the winter.



This photo of a marina in New York state shows boats berthed at the docks because of the centralized de-icing system.

during future winter months, which meant additional revenue during this historically slow winter period.

With the system the marina had chosen, air spargers were designed for each dock/slip and a secondary sparger for the shoreline area where erosion had occurred. A 5 hp Rotron Regenerative Blower operated all of the spargers.

The system installation called for the blower to be installed on the inner dock, with 2" sparger lines running the length of the docks to their outer edges near the pilings. From a small feeder line, an additional sparger was placed at the shoreline area. It took a three-person crew a total of 12 hours to complete this installation. The overall system, including equipment and installation, cost \$5,329.30.

Cost benefit analysis

In analyzing this installation, the marina found that the total cost of installing the central de-icing/aeration system was significantly less than the cost of repairing the damages incurred the previous winter. As a result, the marina was able to recoup its capital expenditure within a single winter. This return on investment was critical to the marina due to its overhead costs and cyclical revenue.

As an added benefit, the marina did not need to remove the centralized system in the spring. It can operate the de-icing/aeration system year round to

achieve significant benefits. By operating the system in the spring and summer months, the system will provide water circulation and destratification, which prohibits algae from reproducing. In addition, due to the aeration effect, aerobic bacteria will allow for decomposition of bottom organic to keep the water clear and healthy.

The major benefits that a central de-icing/aeration system can provide to

marinas are low ownership costs, combined with minimal maintenance time and effort, which makes it an ideal piece of equipment for marinas worldwide. ⚓

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