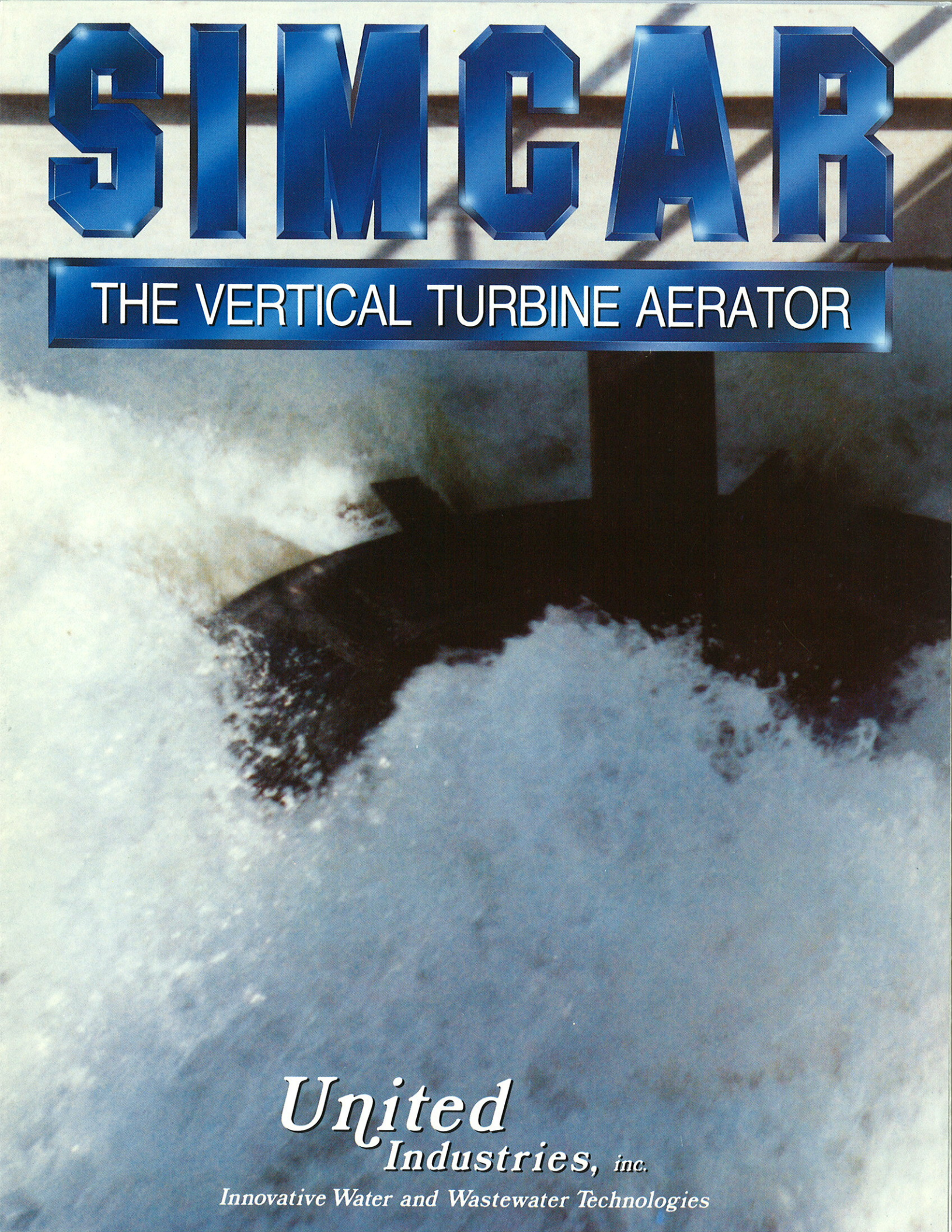
SIMCAR

THE VERTICAL TURBINE AERATOR



United Industries, inc.

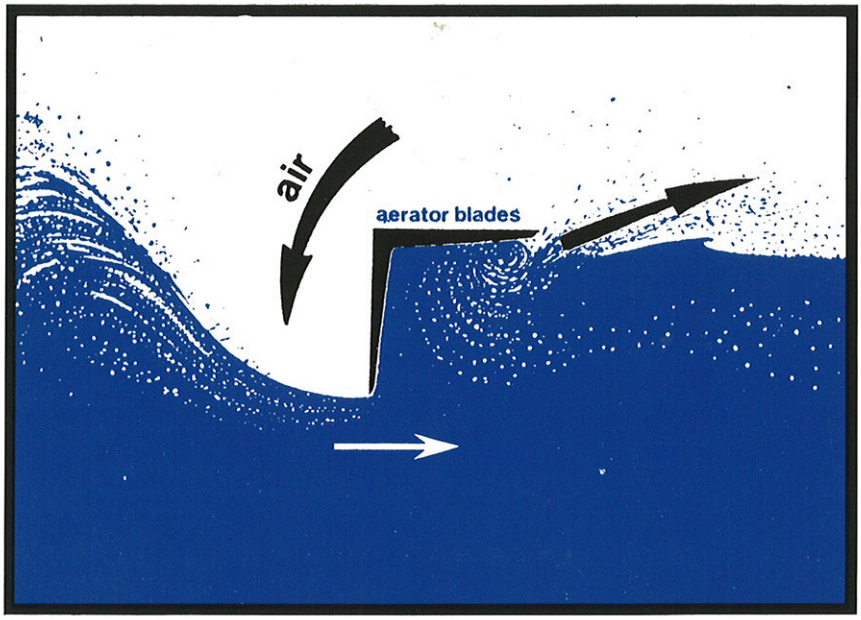
Innovative Water and Wastewater Technologies

SIMCAR®...

The Vertical Turbine Aerator . . .

EFFICIENT DESIGN

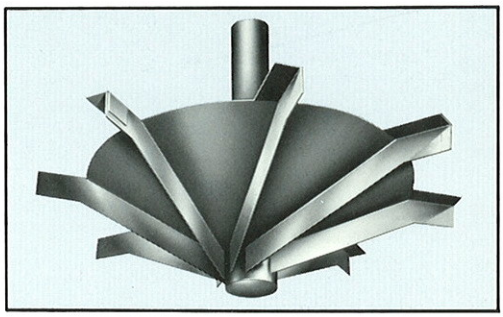
One of the most important components of the activated-sludge process is the aeration device employed to provide oxygen to the living organisms. The SIMCAR® vertical turbine aerator was especially developed for this exacting duty. It has proven itself as a most versatile and efficient aerator, possessing many distinctive features which offer both short term and long term benefits to the user. All are substantiated by actual experiences over the last two decades in thousands of installations throughout the world. The SIMCAR® low speed aerator is remarkably well suited for operation in any type of activated sludge system and in tanks of practically any size or shape. It has also proven to be an excellent mechanism for aerating and mixing the contents of an oxidation ditch system. A single unit is all that is required for most applications.



As it rotates, the SIMCAR® aerator draws air downwards into the liquid behind the protruding blades while the fronts of the blades propel the aerated liquid outwards over a large surface area.

DURABLE CONSTRUCTION

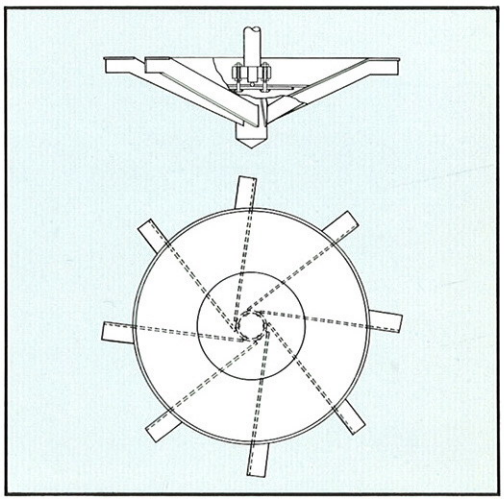
The shape of the SIMCAR® low-speed aerator is based on a shallow inverted cone. Short horizontal projections and vertically-set blades extend up the cone and along the horizontal projections. The aeration shaft is directly coupled to a gearbox output shaft through a bridge, platform or other support structure in such a way that the horizontal projections of the aerator cone are at, or near, the surface of the liquid. Coated, mild steel construction is normally suitable, but corrosion resistant materials can also be utilized. Every SIMCAR® aerator is designed to provide reliable and efficient service, even under adverse conditions. Motors are selected with proper service factors, winding insulations and optimum efficiencies to maximize service life. The gear boxes incorporate design features which are specifically required for trouble free operation with slow speed aerators.



Design of SIMCAR® aerators is particularly well suited for use in oxidation ditch systems and other special applications

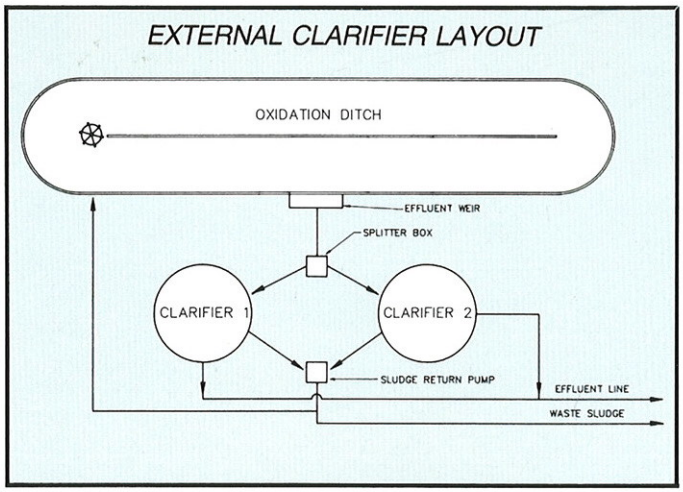
RELIABLE OPERATION

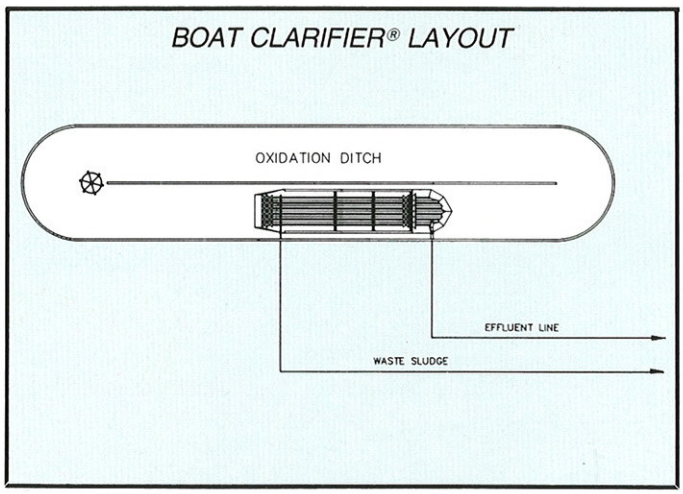
As the SIMCAR® aerator revolves, the liquid is drawn up along the blades and then flung outwards in a low trajectory with a minimum loss of energy. The air is drawn-in behind the blades and mixes with the liquid in the region of greatest turbulence. The fronts of the blades disperse the liquid over a large surface area thus entraining more air. The action of the aerator, coupled with the displacement of the liquid being aerated, creates a powerful vortex-like motion which causes more liquid to rise from the bottom of the tank, thus creating a continual aeration cycle involving the entire tank volume. In oxidation ditch applications, the aerator is mounted in the turn of the racetrack and is aligned with the center wall, between the channels. Thus, the aerator will draw liquid from one channel into the region of the aerated vortex. The mixed liquor is then forced down the other channel at an adequate velocity to provide proper mixing.

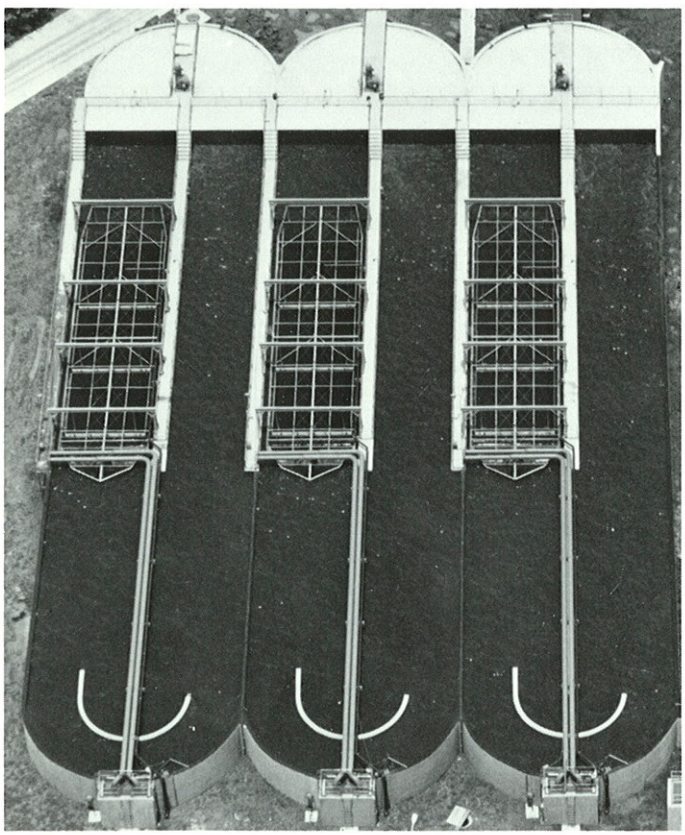


Perfect for Oxidation Ditch Systems . . .

The oxidation ditch system has developed into one of the most efficient, cost-effective treatment processes in the world. With the proper equipment, this system has the unique capability of meeting advanced-secondary effluent limits on a continual basis. If external clarifiers are utilized, the SIMCAR® and an adjustable effluent weir can be combined to maximize the potential of the racetrack design. However, if a reduction in capital, O&M and energy costs are desired, the patented BOAT CLARIFIER® would be the natural selection to use with the SIMCAR® aerator. The highly efficient SIMCAR® aerator will supply the proper amount of oxygen required for either system. While the oxygen is being delivered to the mixed liquor, the proper mixing velocity will automatically be established.

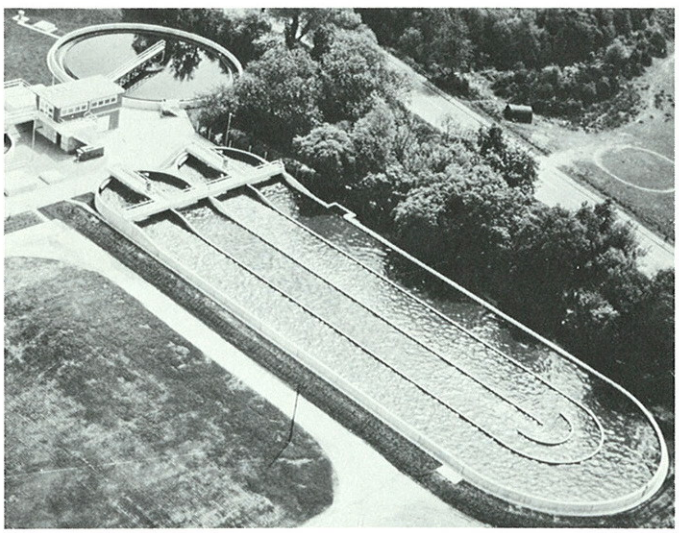






The 3.0 MGD plant in Morgan City, LA uses 3 - 1.0 MGD ditches, each with a single BOAT CLARIFIER® and SIMCAR® aerator. Effluent levels of under 10 mg/l (TSS & BOD_5) have been continually maintained. This plant is hydraulically overloaded with an average flow rate of approximately 4.5 MGD and peak flows in excess of 20 MGD.

The SIMCAR® and oxidation ditch system in Ash Vale, England provides a high quality effluent. (photo courtesy of the Thames River Authority and Simon-Hartley Ltd.).

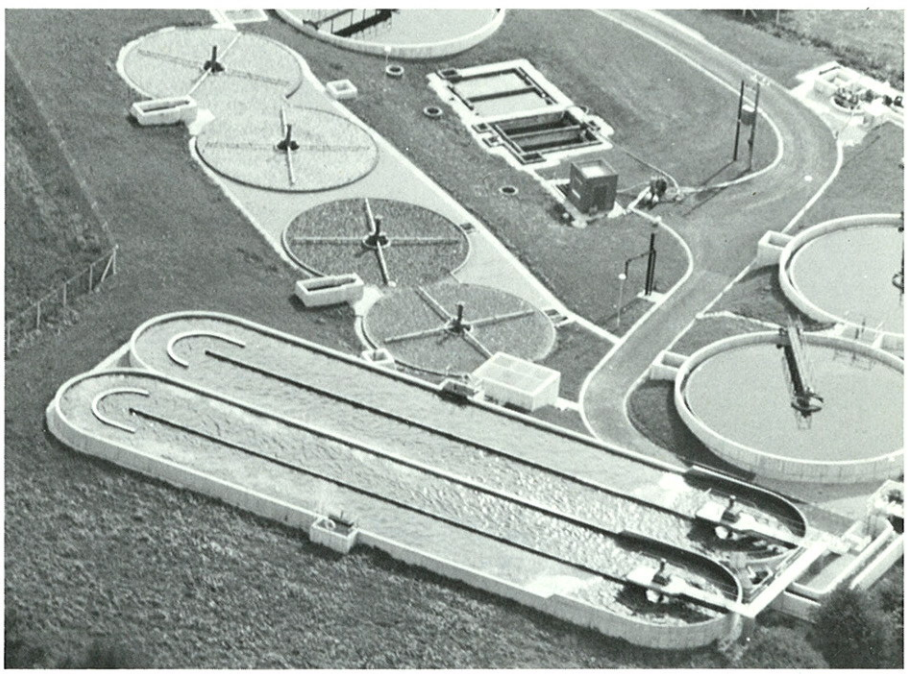


. . . With Distinctive Features and Benefits

Advantages & Benefits	
No royalty or license fees	Reduced equipment cost
Simple, single unit construction	Low capital and O&M costs
No underwater bearings	Low maintenance
Provides complete mixing & aeration	No ancillary equipment needed
High oxygen transfer efficiency	Low energy costs; high BOD_5 removal
Available either with protective coatings or in stainless steel	Reduced corrosion problems
Can be designed to prevent misting, splashing and aerosols open to the air	Can operate in sub-zero temperatures
Suitable for mounting on bridges, platforms or floating structures	Installation in tanks, lagoons, rivers or lakes
Can be used with the BOAT CLARIFIER®	Lowest possible construction, O&M, and energy costs

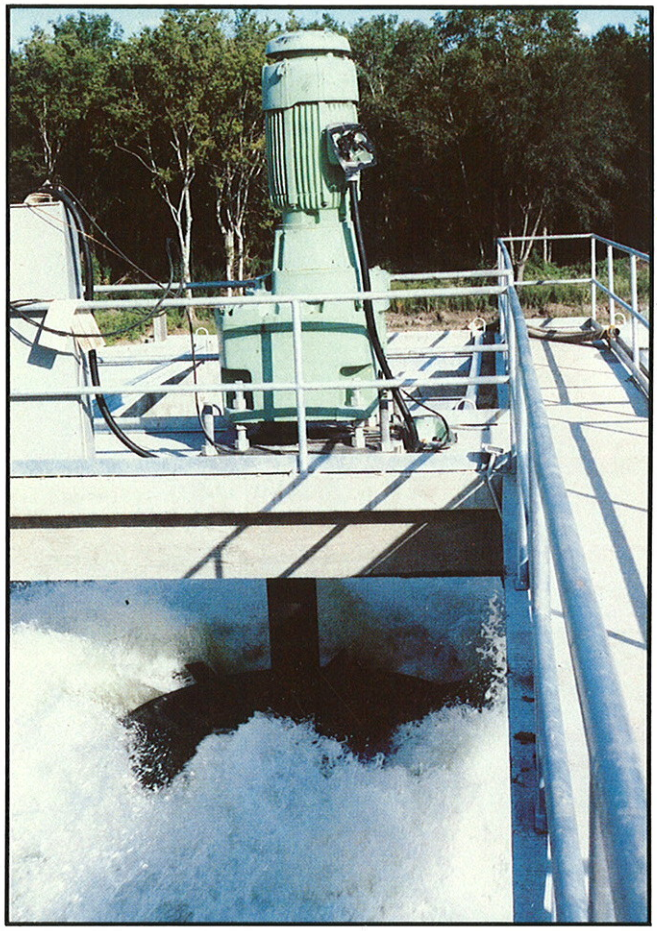
IMPROVES OTHER PROCESSES

Many treatment plants across the United States currently use various treatment schemes which cannot meet today's more stringent discharge permits. The SIMCAR® aerator can be utilized in treatment processes such as the oxidation ditch, which is capable of meeting advanced secondary effluent levels. Thus, upgrading antiquated systems can be easily accomplished for minimal capital cost.



VERTICAL TURBINE AERATORS and the BOAT CLARIFIER®. . .

a unique combination!



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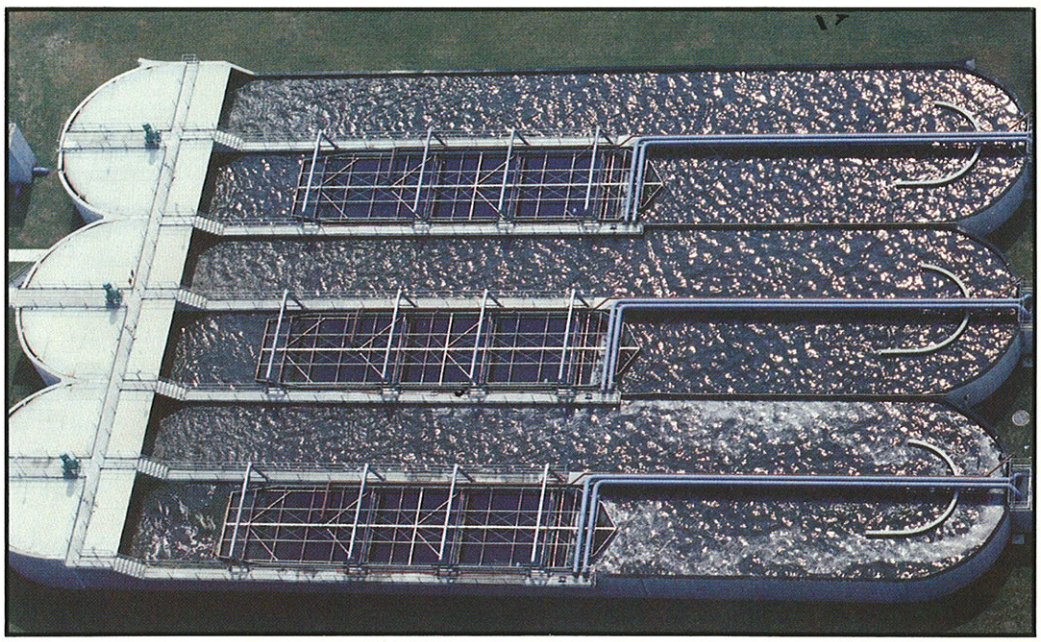
S.S. BOAT CLARIFIER



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