



KRAISSL QUARTERLY

Published By

THE KRAISSL COMPANY

INCORPORATED

PUMPS-SEPARATORS-ENGINEERING EQUIPMENT

HACKENSACK, NEW JERSEY



Volume 3

JULY 1960

Number 3

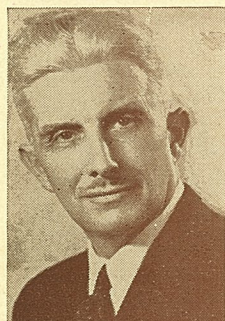
AIR SANITATION IN BERGEN COUNTY

FREDERICK KRAISSL, Jr., P.E.

President

THE KRAISSL COMPANY, INC.

Sometimes what is being done in one area is of interest in others as well as to local residents and since I was permitted the privilege of association



with the program since its inception, I can supply this information. I feel sure it will be agreed that the impetus for Air pollution Legislation was provided by Senator Walter H. Jones who at that time was a member of the

Assembly. An Air Pollution Study Commission was appointed by the New Jersey Legislature and an equal number of appointments to it made by the Assembly and the Senate. I had the honor of being one of those appointees and I believe that I am the only former member without an official state assignment still connected with this work.

The Air Pollution Study Commission, after a number of years' activity and study involving trips by some of its members to areas having even greater difficulty, made recommendations that resulted in legislation sponsored, again, by Senator Jones. This legislation created the New Jersey Air Pollution Commission as an integral part of the Department of Health with authorization for the formation of County Air Pollution Associations. Authority for the promulgation of Codes having the force of law was vested in the Commission. The function of the County Associations is advisory.

Bergen County was one of the first to organize a County Association and various representative organizations, operating in accordance with the new law were asked to make nominations. It was my honor to be the nominee of the Bergen County Society of Professional Engineers. Possibly, because of my past activities, I was asked by my associates to function as Chair-

man and it seemed that we could show leadership in setting up county organizations. Since the role established by the Legislature was entirely advisory, it was first necessary to determine how we could become most effective. Logic indicated that the Municipal Health Officers were the first line of defense in all matters of Public Health. As will be subsequently noted, only part of the work of Air Sanitation deals directly with Public Health. Consequently, a joint meeting was arranged with the Bergen County Health Officers Association in which members of the Bergen County Air Pollution Association led in a panel discussion. Substance was provided by the then recently enacted Codes of the Air Pollution Commission. Activity on the State Level was directed toward enacting Codes which dealt with the most flagrant problems as revealed by former studies and for which current solutions with means of control could be offered. The first was the Code outlawing open burning of refuse. It was explained to the Health Officers how their Salesmanship, Authority and Enforcement Status could be applied in an intensifying program of rendering effective these new state codes. The next code dealt with the effluent from stacks with indicated standards for regulation.

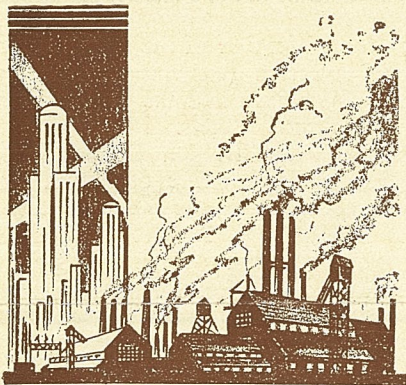
The approach to Air Sanitation from the Health Standpoint has its limitations in view of the number of people willing to apparently enjoy themselves for extended lengths of time in confined areas where high concentrations of smoke exist. It is doubtful whether the air in any part of Bergen County is as polluted as the air breathed by the average smoker while smoking. Consequently the immediate problem is one of quality and obnoxiousness of the pollutant and the amount of aerial debris the population is willing to tolerate in a drive for the right to enjoy clean air.

This is not true as relates to plant life. A concentration of some of the halogen and other gases that would have no apparent deleterious effect on humans could do great damage to plants with great economic and esthetic loss. A situation of this type developed during the past year. Through the alertness of the Agri-

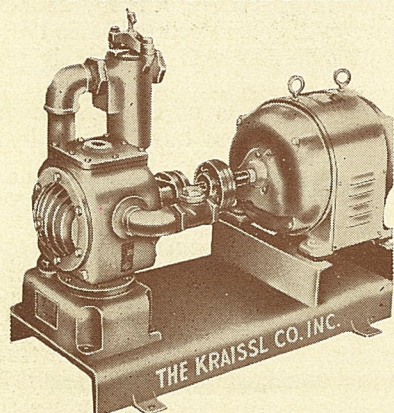
cultural Member of the Bergen County Air Pollution Association, Mr. Irving K. Christensen and the Bergen County Agricultural Agent Mr. James A. McFaul, the Bergen County Association advised a line of action which was accepted by the State Department of Health. Dr. Robert H. Daines, a former member of the Air Pollution Study Commission and an eminent scientist of the State Department of Agriculture, personally surveyed the situation. Tests were authorized of Bergen County Air at suspected points and afflicted plant life was sent to the State Laboratory for analysis. While this study is not complete to my knowledge at this writing, it is my deduction that it was considered probable that the plant affliction was due to air pollution. It is possible that these pollutants can be products of combustion emanating from open burning and hydrocarbon combustion. Two of these potential sources are now controllable within the state. Current codes make it possible to eliminate open burning of non-vegetable refuse and to control the effluent from stacks. A third potential source is the effluent from mufflers of automobiles and trucks. In as much as Bergen County is a corridor county, we must suffer from the effects of hydrocarbon pollutants dumped in our air by those travelling through. There is an opportunity for a study to determine whether the rise in air pollution can be related to automotive traffic density. Nobody expects to suggest limiting the use of automobiles, but California has enacted legislation requiring the use of devices on automotive units to reduce the effluent to an acceptable tolerance level. It is now in the process of considering for approval, devices designed to comply with the law when it becomes effective. We will be watching the results with very great interest. As part of the program of the Bergen County Association, we have requested funds from the Bergen County Board of Freeholders to print a suitable brochure to be issued at reasonable intervals to keep interested parties and agencies informed on all matters of Air Sanitation that would affect Bergen County or be of possible interest. The current officers of the Bergen County Air Pollution Association are Mr. William V. Andresen, Vice

Chairman, 321 Warwick Ave., West Englewood, N. J.; Mr. R. H. Gautier, 664 West Crescent Ave. Allendale, N. J., Secretary and myself as Chairman. We will be glad to receive any thoughts or suggestions regarding Air Sanitation which we can deal with in our advisory capacity.

INDUSTRIAL FIELD



ADVANTAGES OF DIRECT CONNECTING COMPRESSORS TO SEWAGE EJECTORS



Previous issues of Kraissl Quarterly have mentioned the long performance of Kraissl Class 25 Series Compressors with ejectors that have been installed over twenty years and are still functioning satisfactorily. This type of field test is more convincing than any plant simulated test as it would be impractical to attempt to duplicate operating conditions over such an extended duration.

However, a survey or study of the installations which have been performing most satisfactorily for the longest periods, indicates clearly that these occur most frequently when the compressors are direct connected to the ejector pots and where no compressed air storage tanks are used. There are a number of reasons why this is true. When compressors are direct connected to ejector pots they must be sized and selected so that the capacity is sufficient to accomplish ejection during the time allocated for the ejection cycle.

If the time allocated for the filling cycle is thirty seconds and that of the ejection cycle is also thirty seconds, it is clear that the compressors should be sized to eject the capacity of the ejector pots during this period. It should also be clear that with proper controls, the compressors can not run more frequently than the ejector pots can be filled. This **insures** intermittent service and that the compressors cannot be overworked.

This service can be compared with the possibility of using compressed air storage tanks with necessary controls. In such cases, the air compressors can be selected on an approximately half size basis so that they can be run continuously during the time that the ejector pot is filling as well as during the ejection cycle. This is much more severe service and shortens the performance life of a compressor, as well as introducing more difficult lubricating problems. If an ejector station is overloaded, for any reason, these conditions can be in effect for long periods of time. The use of smaller size compressors with air storage tanks for economic reasons is unjustified, in our opinion, as the cost of air tanks that will meet safety code requirements together with the additional necessary piping and controls is not inconsequential even as a first cost, but in terms of the longer length of life and greater freedom from service calls that can be obtained with compressors that are sized for direct pot ejection, make the latter, the unquestionable choice.

However, this is not the whole story. When a compressor is installed for direct pot ejection, it cuts in at approximately zero gauge pressure and pumps up to ejection pressure and then is stopped by the low level control after the ejection has been completed. There is no appreciable impact on starting up against compression since the gauge pressure is zero. What may be even more important, the mean operating pressure is somewhere between zero and ejection pressure. If ejection pressure is twenty pounds psig, let's assume a mean of approximately ten pounds. Let us compare this with conditions prevailing when a compressed air tank is used. The lowest cut in point of the pneumatic-electric controls must be set at least at ejection pressure to have the unit function, and we will continue with the assumed twenty pounds. The high point of cut out pressure must be some practical range above this, possibly ten pounds. This means that the compressor must cut in at twenty pounds under impact loaded conditions and run until a pressure of thirty pounds is reached before it can stop. For discussion purposes let us consider that the mean

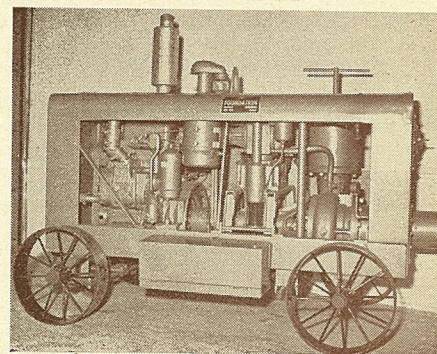
operating pressure has been raised from ten to twenty five pounds to accomplish the same objective within approximately the same length of time. Based on the above assumptions, since horse power is proportional to pressure when other conditions are the same, it takes two and one half times as much horse power to do the same job on an operating cycle basis and this is not good efficiency.

When we were first introduced to this potential application many years ago, piston compressors were the only ones being employed and we can remember the remarks of the predecessor of one of our present customers. He stated that he wanted us to help work out a satisfactory rotary compressor that would eliminate the need for compressed air tanks, which he considered necessary to smooth out the pulsations of piston compressors, and that could be direct connected to the ejector pots. We believe that we have done this as evidenced by the long service histories of this type of installation.

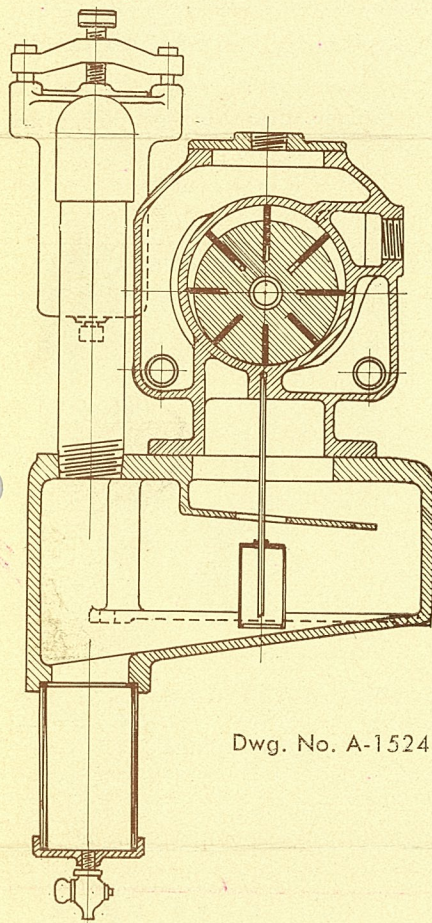
VACUUM PRIMING CENTRIFUGAL PUMPS

While self priming pumps have many functions there are numerous cases where straight centrifugal pumps are the best selection and this usually occurs where large capacities are involved. Under such circumstances where suction lifts are required, it is necessary to provide for vacuum priming.

We have supplied our force feed lubricated Class 25 Series Pumps to meet vacuum priming requirements for many years. These usually fall into two categories; vacuum priming of mobile units and vacuum priming of stationary units. The following illustration shows our vacuum pump as an integral part of a mobile assembly for keeping well point centrifugal pumps primed when dewatering large areas. Each company in this field has its own type of valve which causes the vacuum pump to evacuate air admitted into the suction lines as well points suddenly pull air, and close against the flooding of the vacuum pump with water after the centrifugal pump has been primed. Under

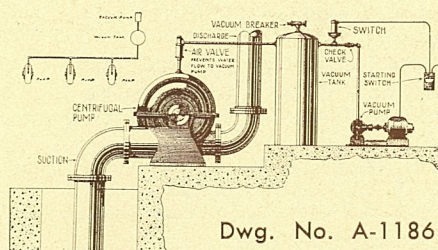


these service conditions, the vacuum pumps usually run as long as the centrifugals during the service period. Even when vacuum shut off valves function satisfactorily, there is always the possibility of the admission of small amounts of water into the vacuum pump. As long as the collected water does not reach the intake pipe of the lubricating system, the oil flushing action keeps the internal parts lubricated and coated with oil. To provide easy visibility of the collected water so that it can be drained before reaching the intake oil pipe special oil reservoir assemblies have been provided as shown in Drawing A-1524.

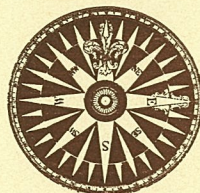


Dwg. No. A-1524

Vacuum priming of stationary centrifugals can be handled on a different basis as provision can be made for a vacuum receiver tank as shown in Drawing Number A-1186 which so far have been considered too cumbersome for mobile units. The advantage of this arrangement, when the pumps are operated by electric motor, permits actuation by high and low limits vacuum switch. The low limit is set above the vacuum necessary to prime the pump. The high limit is set at a practical range above this. With a tank adequate provision should be available for receiving small amounts of water passed by the shut off valve and a gauge glass can be used to indicate when the tank should be drained.

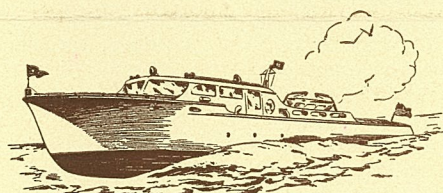


Dwg. No. A-1186



MARINE FIELD

BOATING INDUSTRY



CHRIS-CRAFT CORPORATION RECOMMENDS USE OF COOLING WATER STRAINERS

Service Bulletin No. E-49, reproduced below is self explanatory. Chris Craft dealers and other boat builders and agencies are urged to contact us for size and price information.

Chris-Craft

CHRIS-CRAFT CORPORATION
ADMINISTRATION - POMPAHO BEACH, FLORIDA
PARTS DEPARTMENT - ALGONAC, MICHIGAN

SERVICE BULLETIN E-49

SUBJECT: WATER STRAINER ON V-8 ENGINES

In case of an overheating problem with the V-8 engine, model "430" or "283" Hydraulic, we suggest that you do not overlook the fact that there may be an obstruction in the bottom of one of the oil coolers that is restricting the flow of water.

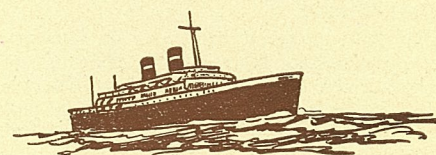
The rubber vane water pump does not have the characteristic of grinding up any weeds or leaves that go through it, and we have found quite large pieces of seaweed and leaves in the cooler that have gone through the pump.

It is recommended by our Engineering Department that the installation of a raw water strainer be added to the boat, between the intake scoop and the water pump. There are several makes available and we would have no particular choice of any one as long as the capacity of the strainer is large enough to handle the capacity of the water pump.

CHRIS CRAFT CORPORATION

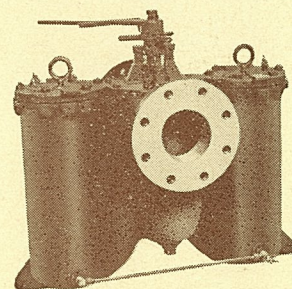
R. MACK KREBS

SHIPBUILDING INDUSTRY



On board the
S.S. JAMES LYKES

Below decks on the JAMES LYKES and each of its sister ships you'll find Kraissl Class 72 integral duplex strainers to protect the sanitary pump discharge lines and the saltwater service lines.



Write for bulletins.

Service Division • BULLETIN •

FOR THE SPECIAL ATTENTION OF YOUR SERVICE MANAGER

April 1, 1960

SALES REPRESENTATION

HOME OFFICE

We have reserved the areas of Connecticut, Delaware, Metropolitan New York, including the Hudson valley, Long Island, New Jersey and eastern Pennsylvania less Philadelphia District for coverage by Kraissl Company personnel.

Northeast Region

Robert Bacon Co.
272 Centre Street, Newton, Mass.
John S. Stone
P. O. Box 127, Holcomb, N. Y.

Eastern Region

Engineering Associates, Div. Trymac, Inc.
16 West 5th St., Erie, Pa.
Valley Equipment Company
404 Frick Building, Pittsburgh 19, Pa.
Shanklin Company
330 East 25th St., Baltimore, Md.

Southeast Region

L. M. Lee, Jr.
Richmond Federal Bldg., Richmond, Va.
Dillon Supply Company—Main Office
Raleigh, N. C.
Dillon Supply Company
Durham, No. Carolina
Dillon Supply Company
Rocky Mt., No. Carolina
Dillon Supply Company
Goldsboro, North Carolina
Dillon Supply Company
Charlotte, No. Carolina
Boiler Supply Company, Inc.
490 Craighead Street, Nashville, Tenn.
2006 Sutherland Ave., Knoxville, Tenn.
Applied Engineering Co., Inc.
P. O. Box 506, Orangeburg, S. C.
Spotswood Parker & Co.
313 Techwood Drive, Atlanta, Ga.
T. W. McCuiston
504 S. W. 69th Ave., Miami, Fla.

North Central Region

Charles R. Davis
2970 W. Grand Blvd., Detroit, Mich.
Hetler Equipment Co.
1904 Clyde Park Ave., S. W.
Grand Rapids, Mich.

Central Region

Wm. G. Taylor
1900 Euclid Bldg., Cleveland, Ohio
Lightfoot Pump & Equipment Co.
1989 Guilford Rd., Columbus, Ohio
The Jordan Engineering Co.
7401 Shewango Way, Cincinnati 43, Ohio
T. A. Heidenreich Co., Inc.
2036 East 46th St., Indianapolis, Ind.
Lowden & Company
3404 N. Harlem St., Chicago, Ill.
A. K. Howell Co.
1001 Bellevue Ave., St. Louis, Mo.

South Central Region

Creole Engineering Co.
2617 Banks Street, New Orleans, La.
3786 Scenic Highway, Baton Rouge, La.
Sterling & Newby Houston Corp
2611 Crocker St.
Houston, Texas
Sterling & Newby—Dallas Corp
4431 Maple Ave.
Dallas 9, Texas

Northwest Region

Bruce P. Rutherford, Inc.
122 First Ave., S. W., Portland, Oregon
Bruce P. Rutherford, Inc.
1954 First Avenue South, Seattle, Wash.

Western Region

A. C. Cope Co.
435 Bryant Street, San Francisco, Cal.
Power Engineering Co.
1806 South State St., Salt Lake City, Utah
Thermo Tech Products Co.—Power Plant
2466 So. Delaware
Denver 23, Colorado

Southwest Region

Walter T. Humes Co.
230 East Anaheim, Wilmington, Cal.
Wagner Hydraulic Equip. Co.
10814 Santa Monica Blvd.
Los Angeles, California

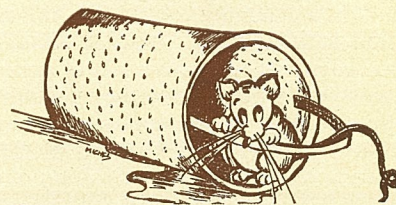
Canada—Ontario and Quebec Provinces

Kirk Equipment Ltd.
1460 Bishop Street
Montreal, Quebec, Canada

Canada—British Columbia Province

Fred McMeans & Co.
1608 West 5th Avenue
Vancouver, B. C., Canada

FOUND IN THE STRAINER BASKET

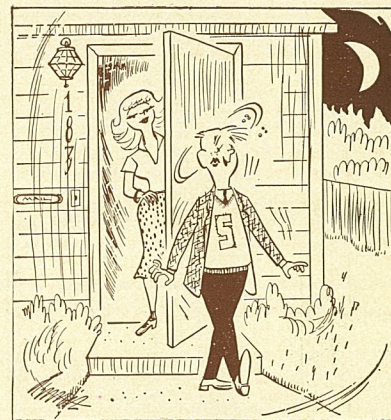


A banker and a broker went fishing in Long Island Sound. They were in a small boat and were upset by a sudden squall. The broker swam over to the boat intending to right it and shouted to the banker,

"Say, Charley, can you float alone?"

"Are you crazy?", yelled the banker, "I'm almost drowning and you want to talk business."

1 1 1



"Mi gosh! And all this time I've been throwing away my evenings building model airplanes."

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