AIR SANITATION
IN BERGEN COUNTY

FREDERICK KRAISLL, JR., P.E.
President
THE KRAISLL 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, be-
cause 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 organi-
zations. 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. Conse-
quently, a joint meeting was arranged
with the Bergen County Health Offi-
cers 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
outlining 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 concen-
trations 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 ob-
noxiousness 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 esthe-
ic 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 Associa-
tion 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 know-
ledge at this writing, it is my deduction
that it was considered probable that the
plant affliction was due to air pollu-
tion. It is possible that these pollutants
are products of combustion emanat-
ing from open burning and hydro-
carbon 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 auto-
motive traffic density. Nobody expects
to suggest limiting the use of automo-
biles, 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 con-
dering for approval, devices designed
to comply with the law when it
becomes effective. We will be watch-
ing 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 Associa-
tion 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 Kraiss Quarterly have mentioned the long performance of Kraiss 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.

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.

CHRIS-CRAFT CORPORATION

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ADMINISTRATION - POMPANO BEACH, FLORIDA
PARTS DEPARTMENT - ALGOMAC, 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
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
Goldboro, North Carolina
Dillno 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.
2069 Guilford Rd., Columbus, Ohio
The Jordan Engineering Co.
7401 Shevango 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 S. 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 McMeikan & 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."

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