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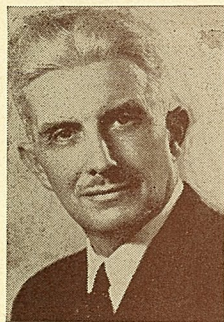
JULY 1959

Number 3

WHY SHOULD ENGINEERS IN INDUSTRY QUALIFY AS PROFESSIONAL ENGINEERS?

FREDERICK KRAISSL, JR., P. E. *President*
THE KRAISSL COMPANY, INC.

It has frequently been said that you get out of an activity no more than you put into it. This goes for your job, your church, your family life, fraternal, professional, social organizations and sports.



Getting something for nothing over an extended period of time is an impossible hypothesis that should be self evident to engineers. Somebody must

pay for everything. Even gifts imply a donor. Some people believe that appreciation is directly related to the cost in effort to attain an objective. This means we appreciate most the things that cost us most.

The Societies of Professional Engineering, National, State and Local, are dedicated to the advancement of the Professional, Economic and Social Status of the engineer. If these objectives are worthy, all engineers should want a part in the program. It is the program of all engaged in it. It is their program. Your contribution may be the greatest; who can forecast the future?

Engineers employed in an industry producing its own products are not required to be licensed in probably all states. This is as it should be. Companies sell products under the Interstate Commerce Laws and the right to produce and sell a product should never be circumscribed by limitations that thwart initiative and invention. Many an artisan has come up with something of great usefulness in spite of the lack of a formal education.

But this does not excuse abstaining from voluntary programs of professional upgrading. We need to raise the technical graduate from the status of a technician to that of a professional. All professions have a code of ethics, a moral sense of right and wrong which in some cases has been

clearly stated. This must be a driving force within the profession that insists on adequate standards to protect the public and not a means of limiting those who may engage in it. Codes of ethics usually suggest procedures in presenting qualifications. It is recognized that each must tell his or her own story with initiative but without exaggeration and in good taste. Every engineer should want a part in dealing with the constantly changing qualification standards to meet the challenges of a changing world.

Most engineers appreciate the desirability of the improvement in the economic status of the engineer, but few understand that this cannot be automatic. The bitter truth is that experience alone does not constitute a justification for increased compensation. It is possible to do a thing wrong for many years or to stagnate without growth. The upgrading of the compensation of Professional Engineers by surveys as related to other lines of employment, serves to focus the attention of each employer on his wage scale and that to become a Professional Engineer, a person must be more than a technician. As people increase in stature, ability and responsibility, they are worth more and employers are glad to find individuals who can qualify for such assignments and compensate them accordingly.

Social consciousness is an abstract concept but to put it plainly, engineers need to be kicked out of their Ivory Towers and the Ivory Towers demolished. People are more important than things. Everything cannot be solved by mathematics including the human equation. The engineer must be just as good a salesman as the good preacher, doctor, teacher, lawyer or other professional for the things in which he believes or represents. No civilization can exist without disintegration in the absence of satisfactory human standards and the engineer has a place and responsibility in establishing them since many human problems are directly related to devices engineers have created.

Why should engineers-in-industry be licensed? Because it is the entrance requirement that admits one to full membership in the professional engineering organization on a three level Na-

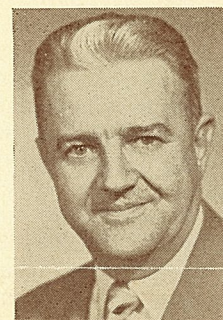
tional, State and Local basis that proposes the professional standards, nominates, in most cases, the members of State Boards that administer the standards and encourages all members to take part in activities that will accomplish for the member the growth program he needs.

It also places the engineer in a position where a state has formally acknowledged the licensee's qualification to practice engineering and given him a diploma to this effect. This lifts the technical graduate from the status of neophyte to that of one where he or she is qualified to go it alone. Many employers are quite properly impressed when this transition has occurred.

THE ROLE OF THE SALESMAN

LELAND E. MILLS, *Vice President*

Many technical people have a troublesome habit of "Looking down their noses" at men engaged in sales work. Yet, if it were not for a sales-



man somewhere along the line in his own organization Mr. Technical Man would undoubtedly be without a job. Somehow, this basic fact is always studiously ignored. This is probably a throw

back to the worn, tired and untrue cliché concerning the builder of the better mouse trap.

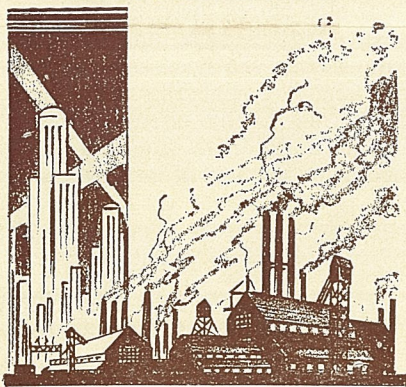
Dreamers can dream and the world cannot progress without them. Engineers can engineer or design or develop and they carry to a useable conclusion the dreams of the dreamers. But all of this dreaming or planning or designing is to no avail and dies aborning until a salesman takes it and goes looking for a need to match it. The salesman says to himself "Someone, somewhere has a need for this and he can and will be found."

This has variously been described as "A nose for business" or "Bird dogging" or "Smelling out the application". I believe that all of these highly descriptive and colorful phrases do nothing but malign all good salesmen.

The suggestion that the coming together of the need and the product is

nothing but the merest chance could certainly not be further from the truth. Any salesman worth his keep is, or should be, aware of the potential of his allocated territory. This is what enables him to get the "Dreamers dream" and the "Designers designs" in the places where they are needed without any stranger alchemy than a highly specialized knowledge of his field and a great deal of hard work. The cycle is then completed because the dreamer can continue to dream and the designer to design. To sum it up, what good is the wheel without the spokes, without the hub, without the axle? There is an interdependence of all of us which could do with a lot more serious consideration.

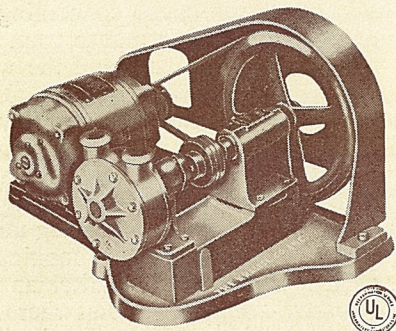
INDUSTRIAL FIELD



OIL BURNING INDUSTRY

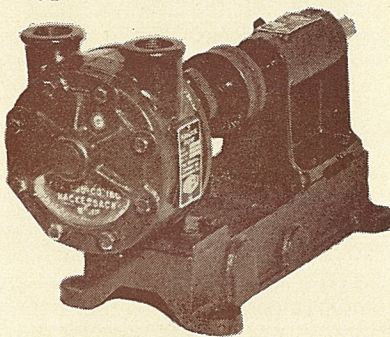
CLASS 60 SERIES SUB BASE ASSEMBLIES

The heart of our Class 60 Series reduction drive pumps is our sub base assemblies. With our S-type base plate the sub base is cast integral with the cast iron base plate for motor mounting and belt guard assembly. When complete motor drive assemblies are required we hope you will permit us to supply the complete unit with V Belt drive, guard, motor mounting rails and motor.



There are other applications where pumps must be driven by power take off from rotating shafts. Our sub base assemblies meet this requirement. It is preferable never to transmit much power to a pump of this type except through loose coupling. Whenever

power must be transmitted by pulley, chain or gear drive, our ball bearing transmission units loose coupled to the pump should meet all requirements. This takes the side strain from the pump shaft and precludes shaft deflection from this cause. The two undesirable effects of shaft deflection are first to cause the rotor to mill into the face plate until it jams; secondly, a deflected shaft runs in an elliptical orbit and it is impossible to effect a tight closure with either packing or mechanical seal under these conditions. The ball bearing transmission units just about preclude misalignment which is a common fault of pillow blocks. The bearing units are machined in an operation that keeps the bearings parallel and concentric. The grease sealed ball bearings face inwards into a large reservoir of grease lubricant. Once a year inspection is sufficient for most services although this should be checked for each application. The saving in maintenance time, alone, justifies the investment in this type of construction.



The prices of the sub base assemblies for three very popular iron pump sizes are as follows:

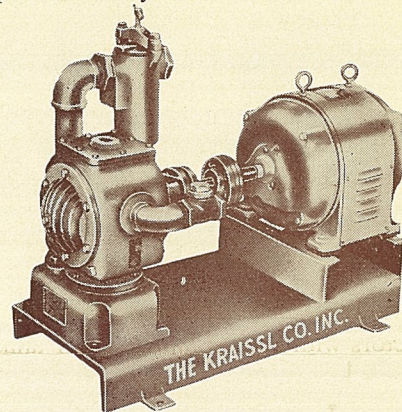
60-3ESA	80.00
60-5ESA	93.00
60-7ESA	108.00

Prices on bronze pumps mounted on sub base assemblies and larger sizes of iron pumps will be gladly quoted on request.

THE SIZING OF COMPRESSORS FOR SEWAGE EJECTION SERVICE

Many Professional Engineers have the opportunity to specify the equipment on municipal sewage ejector stations and need not be concerned by what unconservative assemblers of this type of equipment desire to supply. The understanding of the ejection cycle best indicates its proper use. There is a filling period and an ejecting period. Conservative manufacturers and assemblers of this equipment have allowed thirty seconds of each minute for a filling period and the other thirty seconds for the ejection time. If it is desired to rate the ejector at one hundred gallons per minute, the compres-

sor should be sized, on this basis, to eject the 100 gallon capacity in one half minute, with a margin of safety. We know one conservative manufacturer who in addition to the above approach, allows twenty percent as a margin of safety or unanticipated eventuality and divides the computed requirements by .8.

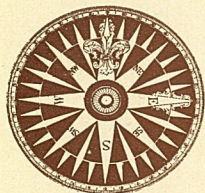


When the compressors are direct connected to the ejectors without the use of a compressed air reservoir tank, several important advantages are obtained, and with direct motor driven rotary compressors, a compressed air tank is not needed to reduce the pulsation effect as required by piston compressors. Under such circumstances, the compressor starts up against a nominal no load atmospheric pressure and builds up to the pressure of ejection. The compressor does not start up under impact against a high pressure air cushion. The mean pressure of operation is between atmospheric or zero gauge and ejection pressure. This draws minimum horsepower. The controls that stop and start the compressor are regulated by the high and low liquid level setting of the type of control employed. The compressor operates only half, approximately, of any minute and the service can be termed intermittent. Under such circumstances, the compressors do not get as hot under any given ejection pressure requirement, and the oil consumption is much less. The action is more fool proof. If a control malfunctions it is immediately evident and the continuous operation of compressors is almost entirely precluded.

Some assemblers of these installations have introduced compressed air reservoir tanks, possibly with the idea that undersized compressors can be used which will run continuously when the filling cycle would otherwise insure a shut down and cooling off period. Such compressor tanks are usually supplied with pressure switches. It is obvious that the low pressure setting must be above the ejection pressure. The high pressure setting must be some practical pressure above this. Pos-

sibly ten pounds will serve as an example. If this is the case the compressor is required to pump the air to ten pounds higher pressure than the required ejection pressure. This calls for more horsepower than necessary for the job. If the compressor is sized to run continuously, its effective life will be shorter and the oil consumption much higher. Over and above actual requirements, the air compressor can easily run continuously if an air leak occurs or controls malfunction so the pressure never reaches the cut out point. This can go on without detection for a considerable length of time or until the compressor runs out of oil and seizes up.

It has been our experience that when compressors are employed by our customers for direct connection to ejectors without a compressed air tank, the most satisfactory installations result.



MARINE FIELD

SHIPBUILDING INDUSTRY

SHIP COST ANALYSIS PANEL FORMED BY U. S. NAVY TO STUDY WAYS TO CUT COSTS

Comments received regarding the article "Uncle Sam Can Cut Costs" which appeared in the January 1959 issue of Kraissl Quarterly, have indicated a great deal of interest in this subject.

Readers have indicated that the problems in government specifications tending to increase costs, apparent to us, are existent in their lines of endeavor also.

It is most enlightening to know that the U. S. Navy, Bureau of Ships, has recognized this problem and has established the Ship Cost Analysis Panel under the chairmanship of Rear Admiral R. K. James to search for means of cutting the costs to build, convert and repair ships of the U. S. Navy.

One of the areas under investigation covers specifications, design and inspection procedures.

The investigation being undertaken by this panel as you can appreciate, involves a great deal of work when you consider all of the different products purchased for ships of the Navy, and it is exceedingly difficult to change procedures that have been going on for a number of years.

Although the date set for completion of work by the Ship Cost Analysis Panel is July 1, 1959, there is a continuing group under the direction of

Captain Felix Caracciolo, USN, Director of Value Engineering, working along the same line. This group would be very interested in receiving specific details regarding how costs can be reduced in particular lines of activity. We have already cooperated by supplying data in our field to the Ship Cost Analysis Panel.

If a price tag can be placed on some of the excessive requirements that you know about, this information will be very helpful to them in increasing the country's military effectiveness and the reduction of military costs.

Mail information and comments to:
Bureau of Ships, Dept. of the Navy
Washington 25, D. C.

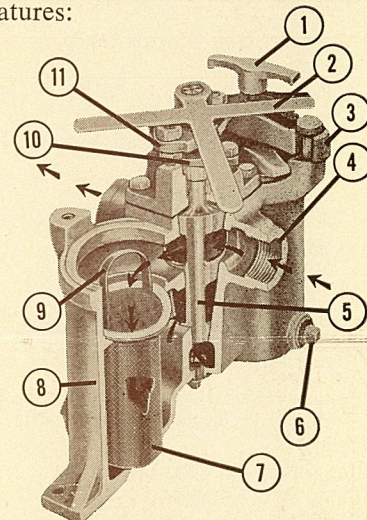
Attn: Capt. Felix Caracciolo, USN
Office of Value Engineering, Code 109

LIFTING JACKS NOT NEEDED WITH KRAISSL STRAINERS

Some Naval Architects have felt it necessary in the past to specify Lifting Jacks to break loose the plugs of plug type valves which have become wedged on the seat. We foresaw the need for an anti wedging valve plug many years ago and designed the plugs with a much wider angle than normally used to prevent this occurrence under normal use. The disadvantage of a lifting jack is that when used, it permits extraneous matter to get between the plug and valve seat and then when the plug is lowered back into position it traps this debris, between these parts. If this debris has appreciable thickness, it immediately sets up a by-pass and the strainer is no longer tight. If the extraneous matter is gritty or abrasive, when the plug is next turned, it can gall or score either the plug or seat or both, opening up a permanent by-pass that cannot be eliminated by adjustment. This calls for a machining operation of some kind, either a lapping job or refacing of the damaged parts, with the hope that this machining operation will not throw the porting out of alignment.

In addition to the wide angle plugs, our strainers **do not** employ springs to hold the plug on its seat which increases the tendency to wedge. We make use of an adjustable locking flange (11) that has a bearing on the plug shaft which fixes the clearances between the plug and seat and positively positions it. It is instantly accessible without disturbing the packing gland. We have been supplying these strainers for over thirty years without lifting jacks before World War II, where an uncounted number were used on the Military Vessels of the Armed Forces during the War and right now as a matter of daily occurrence, on every type of ship from Patrol Boats to

Aircraft Carriers. This construction is our standard design and is listed by Underwriters Laboratories, Inc. for fuel oil burner service. We have been able to solve the problem of manufacturing Stainless Steel Duplex Strainers without the employment of lifting jacks, by using Teflon coatings on the plugs. Kraissl Strainers have the following features:



1. Hand screw requires no special tools.
2. Handle shields side in use.
3. Accessible closure for easy basket cleaning.
4. Continuous separation is provided without flow interruption even during changeover.
5. Tapered, anti-wedging valve plug.
6. Drain connections on each basket chamber.
7. Interchangeable low cost baskets.
8. Assembled bodies tested under pressure in accordance with Underwriters' specifications.
9. Spring handle holds basket on seat.
10. Independent stuffing box gland.
11. Adjustable locking flange establishes valve clearance.

BOATING INDUSTRY

BROWARD MARINE INC. USES KRAISSL STRAINERS ON JONATHAN III

We are indebted to Broward Marine, Inc. and its President, Mr. F. A. Denison for the very lovely photograph of Jonathan III under way. Like many other careful builders this organization has used cooling water strainers to reduce to a minimum the chance of trouble with the engine cooling water systems. We are very happy that our strainers were selected.



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.
W. H. Titus
401 North Broad St., Philadelphia, Pa.

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.
Roselawn Center Bldg., Cincinnati, 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.
BISCO
2635 S. Main St., Houston, Texas
Sterling & Newby Houston Corp.—Marine
2611 Crocker St.
Houston, Texas
Sterling & Newby—Dallas Corp.—Marine
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

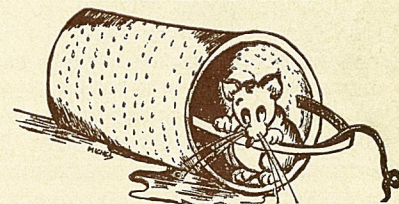
Canada—Ontario and Quebec Provinces

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

Canada—British Columbia Province

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

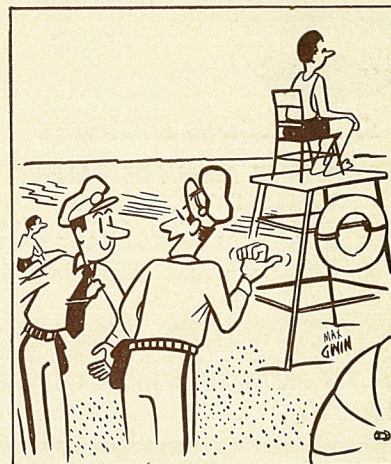
FOUND IN THE STRAINER BASKET



A prominent business man fell in love with an actress but before asking her to marry him, engaged a firm of private detectives to check up on her past life. He received the following report:

"The party under investigation has the best possible reputation. Her past shows no reason for the slightest adverse criticism. The only breath of scandal is the fact that recently she has been a good deal in the company of a business man of doubtful repute".

Judge (in dentist's chair) "Do you swear that you will pull the tooth, the whole tooth and nothing but the tooth?"



"I said nothing about murder. I just asked if you saw that body lying on the beach."

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