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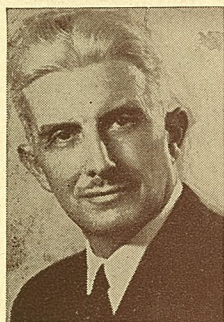
JULY 1961

Number 3

THE FUNCTION OF AN EDUCATION

FREDERICK KRAISSL, Jr., P. E., President
THE KRAISSL COMPANY, INC.

Perhaps it is sufficient to make the statement that the function of an education is to teach you how to think and where to find the information that you need when you need it.



But then comes the question, how do you **teach yourself** how to think? Many people will tell you how to think and more will tell you what to think but this will not be satisfying to the searcher for truth. I shall always be grateful for the fact that science and engineering were my major interests, as long as I can remember. Science is classified knowledge. To obtain knowledge one must think. Scientific knowledge is predicated on searching for truths. Engineering is the application of our collective scientific knowledge for meeting the problems of mankind. We sometimes say it differently by stating that engineering harnesses nature's resources for the benefit of mankind.

I believe that to be a good engineer, one must not only be a good scientist but like people, so that the aspects beneficial to mankind can be properly evaluated and considered. Consequently I believe that an engineering and scientific education properly mastered will teach an individual how to think.

The next requirement of knowing where to find the information when it is needed, is directly a problem of personal discipline. It has been stated that the mind should be a thinking machine not a storehouse for facts, but in my opinion this philosophy has been carried too far in modern education.

Most psychologists will support the statement that no one uses even a small fraction of the brain's capacity and consequently, there should be no concern for overloading it. A retentive memory is a great time saver, and the disciplines of past generations tending

to increase memory capacity should be reestablished in our institutions of learning. I have often suspected that this approach was minimized by subversive infiltration of our educational procedures so that succeeding generations could be more easily "brain-washed". One would have no problem of dealing with traditions of the past that the current generation cannot remember.

I think we have done a good house cleaning job of subversive elements in our educational institutions but we have failed to re-introduce memory disciplines to the same degree. Spelling bees, history courses with emphasis on dates of event, memorizing of mathematical data all are disciplines that produce good memory capacity.

Where one needs a "Do it yourself kit", the association of ideas is a convenient approach. There were effective courses available that made use of this principle, but a simple application can be developed by almost anyone. Suppose it is desired to memorize an individual's name from a recent and probably confused introduction. If the name is simple, like Smith, conjure up the picture of a blacksmith fashioning a horse shoe, or if less usual like Lindenthal, try a translation like Valley of the Lindens or Linden Valley. A few "trys" and this becomes an interesting game, with an endless variety of opportunities for idea associations.

Try the reverse. Think of an object or name and see what idea quickly pops into one's mind. This is the idea association index to use. Each time it is desired to memorize a name, place or source of information work up the association of idea word. Test it and determine whether it "clicks" and if not get a better one. You will be astounded to note how quickly you will accumulate a fund of information that can be called upon when required.

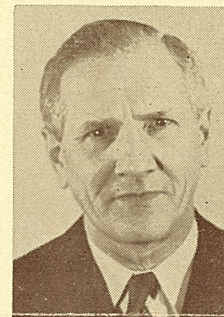
This brings us to the requirements of the engineer and scientist with the galaxies of available information. Fortunately, there are handbooks but even here, the problem is stupendous unless it is handled on the basis of organized routine. I long ago "crossed the bridge" of not attempting to memorize all the information I thought I might wish to use. The brain capacity might be available but the time is not. So I

contented myself by trying to memorize sources of information.

When I read or scan a handbook, I first try to determine its coverage and then concentrate on fields of greatest interest to me. These I try to "tie together" with association of idea indices so that when I want a specific table, procedure, process or formula, I will know where to find it as a first line of information source. For less frequently used or more complicated references, there seems to be no substitute for a personal library system unless there is available an organizational group or public library of adequate coverage.

BALANCE

Balance has played a very important role in the history of the world. The bag of sugar from the supermarket contains the right amount of sugar because someone balanced it with a known weight. The slow speed ox cart wheel could be out of balance, but the high speed wheels of modern machinery cannot.



A. J. WALTER
Vice-President

Even to weigh the earth we balance an effect of its own weight with a similar effect of a known weight.

We have gone far but the world could be a better place to live in if we will go further. Let us refer to better balance in how we use our resources.

Two of these resources are, our "old-timers" whom the world has a tendency to put in a rocking chair, and our "new-timers", whom the world had a tendency to put in the driver's seat. This is as it should be if we are careful to stay in balance.

Many times it is not the combination but the resources themselves that are out of balance. Show an "old-timer" a modern text book to compare with the one he used in school, and if he does not start burning some midnight oil, then bring on that rocking chair. Give a "new-timer" with a stack of diplomas, a real problem to solve and

if he does not find a balanced "old-timer" for more teaching, put that steering wheel in some other hands.

Either one might make the grade alone if given enough time, but time is one of the priceless ingredients of money.

To put it in the form of an equation let:

M=Money, W=Work,
Q=Quality, and T=Time

Then the equation is: $M=W+Q-T$

It is easy to see how this equation must be balanced to get a high value for money.

Since our standard of living must balance with the value of our money, these factors mean a lot to us personally.

This brings up another important balance. When someone receives more money for less work, lower quality, or more time, then somebody else must receive less than normal or the standard of living for all will go down.

The balance a chemist uses to weigh his chemicals accurately, is seldom in perfect adjustment. He determines the error by putting the chemical on the side where the weights were and the weights on the chemical's side. If we could only learn to try the other fellow on our balance pan, what a difference it would make in the world's balance sheet.

Everyone from the highest position in politics, the top executive in industry, to the lowest scale of worker should realize that this is a problem and does not only affect the other fellow.

Little things seem so unimportant but when added together they cause a tremendous change of weight.

The value side of the economic balance will take care of itself if we take care of the load we pile on the other side.

THE RELATIONSHIP OF KRAISSL ASSOCIATES

Since many of our friends appear to be interested, we thought it might be advisable to discuss our plans concerning the relationship of Kraissl Associates to The Kraissl Company, Inc. This Company manufactures and distributes a specialized line of Pumps, Separators and allied Hydraulic and Pneumatic Equipment most of which is designed to become an integral part of the machines, installations or equipment of our customers for resale purposes.

The engineering of these products can be broken down into two phases. The first in sequence is Product Design and Development. It can be likened to the birth of an individual, who must first exist and then mature before there can be any training for an as-

signment. No simile or metaphor is exact but something like this applies to products. Whenever there is a need not completely met by products, devices or systems currently available, such items must be created or existing designs modified or improved to meet the requirements. After this procedure has been carried to completion, a second and also very important phase must now take over. The product must be readied for manufacture and we call this Manufacturing Engineering. It involves necessary changes to permit manufacture by production machinery in the plant of the manufacturer or evaluation of whether specialized or additional machinery for the purpose is a justifiable expenditure. It involves modifications to obtain the most economical production in the authorized quantities in terms of patterns, tools, jigs and fixtures required. It involves savings that can be effected by the design of special tools or the use of applicable techniques to cut costs.

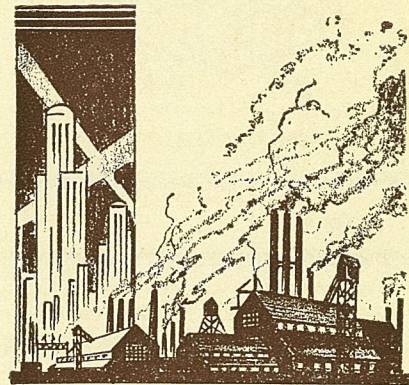
Much of the work in the field of Product Design and Development can be better handled by an organization of Consulting Engineers that are specialists in a certain line. It is our general plan that The Kraissl Company, Inc. will be a most valued client of Kraissl Associates and licensees under patents of manufacturing interest to us. If a product in our field appears to have a wide application, it is planned that it will be engineered by Kraissl Associates for The Kraissl Company, Inc., if we want it to become part of our regular line. If the application is so specialized that it is obviously of limited interest to a few potential users, it may be more appropriate for Kraissl Associates to be retained as Consultants by the parties interested.

It has been stated in the past that it is the function of Consulting Engineers to plan planning. With this thought in mind, it is expected that Kraissl Associates will plan the planning for us and its other clients in the fields in which it is proficient, and we understand it proposes to make use of the engineering staffs of its clients for supporting technical personnel.

PERSONALS

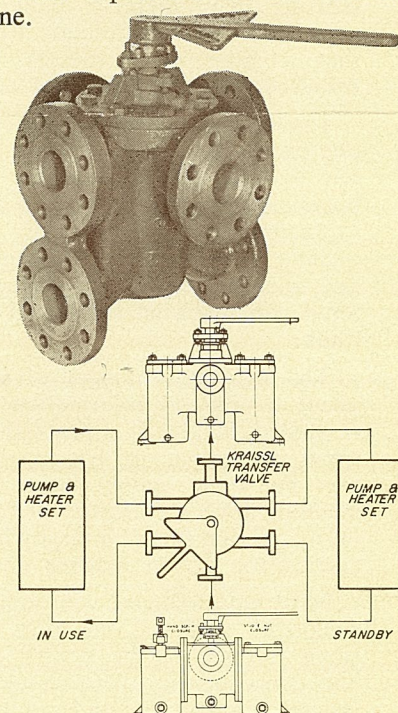
We take great pleasure in announcing the appointment of WILLIAMS BROTHERS, INC., as our regional sales representatives for the state of Maine. The general offices of this company are at 70 Commercial Street, Portland 3, Maine, from which the industrial and marine requirements of their customers have been handled for many years. As a most important advantage they have their own local shop facilities and can give specialized service along this line when this is desired.

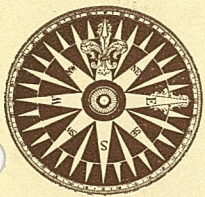
INDUSTRIAL FIELD



CLASS 72AA COMPACT TRANSFER VALVES WITH INDUSTRIAL OIL BURNERS

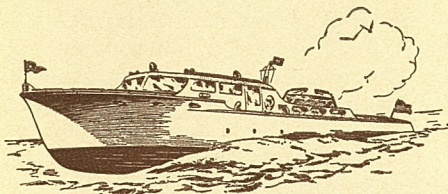
The use our Kraissl Class 72 AA Transfer Valves to direct flow from one side to the other of duplex assemblies involving heat exchangers and filtration units has developed to the point of standardization in many cases. However the easy control made possible has provided an additional application. These units can be applied where two pump and heater sets are installed, which can be dissimilar or identical as long as the function of the valve is to transfer service from one pump unit to the other using the same suction and discharge lines. The principal advantage is easy swing over without interrupting continuity of flow. There also might be considerable savings in valves when one transfer valve replaces a number of single valves. A Suction Duplex Strainer should be provided on the incoming lines as indicated and a Discharge Duplex Strainer of finer separation on the discharge line.



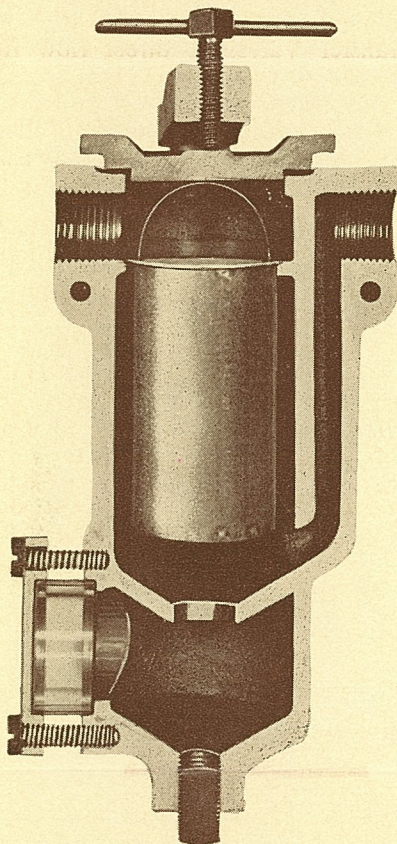


**MARINE
FIELD**

BOATING INDUSTRY



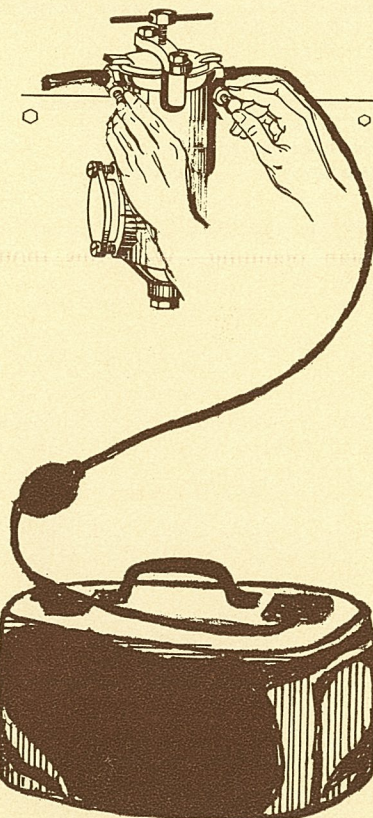
**SIZE 72-71 FUEL FILTER
ON OUTBOARD INSTALLATIONS**



The Kraissl 72-71 Fuel Filter is designed for small boat applications and is as urgently needed on outboard as well as inboard installations. In both cases condensation is possible as well as other impurities, but outboard motors of the two cycle type, have an additional problem. Since the oil is mixed with the gasoline, it is always possible to add extraneous material, at the same time, such as blowing sand, water from heavy rains and spray from a choppy sea. Oil and gasoline mixtures sometimes form gums that give trouble. These impurities can be separated with our fuel filter and the sight gauge tells when it is time for cleaning. The filtered sediment settles into the lower chamber and the conical

baffle keeps it there under rolling and pitching conditions that would probably be beyond endurance.

Figure 1 shows the filter being installed in an accessible position as near to the tank as possible. A short section of pipe or copper tubing can be used as a spacer and either a lag screw, if wood, or machine screw, if preferable makes a convenient attachment. A hose adapter, obtainable from us, should be screwed into each filter port. The regular outboard gasoline hose with bulb can now be cut to give ample length to attach to filter adapter on inlet side. This should be secured with hose clamp or similar safety device. The other cut end of hose can now be attached to outlet side and already has on the opposite end the fitting that attaches to the motor and should be connected. Pump the bulb and the incoming gasoline should be seen in the sight gauge. When the bulb indicates back pressure, the fuel is probably being supplied to the carburetor and manufacturer's instructions for starting the engine should be followed. Write for copy of our Bulletin No. A-1222 giving complete information on this type of design in our larger sizes, which also applies to the small boat size 72-71. The price of this size in special alloy construction is \$20.00. It will be worth more than this if it saves you just one unpleasant experience, and like insurance, is precautionary.



CLEANING

The interior of the filter is instantly accessible by means of our swing back hand clamp. The filter basket is held on its seat by the tension of the bronze spring handle against the cover. When the cover is removed, the basket is lifted out and the exterior can be easily brushed or wiped off. The sight gauge indicates the sludge-water line. If solid sludge forms in the lower chamber, removal of the sight gauge provides a 1½" port for its removal.

When using gasoline fuels, the sludge should be removed thru the top of filter by means of a syringe such as usually employed for regulating water level in storage batteries. Care should be taken to eliminate all spillage or drip to reduce gasoline vapors to a minimum. If the odor of gasoline is detectable, the area should be ventilated until this has disappeared before starting engines. The filter should never be mounted where high temperatures will occur.

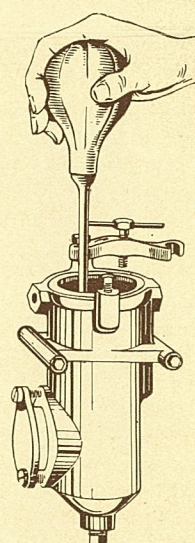
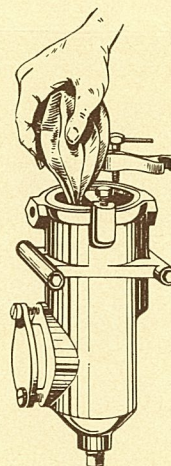
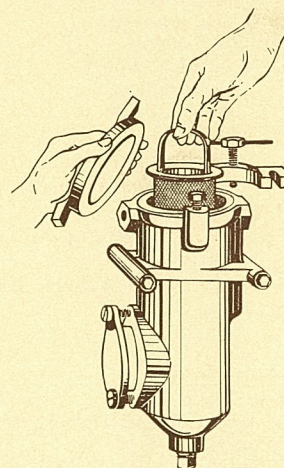


Figure 1

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.
Fruit St., Westboro, Mass.
John S. Stone
P. O. Box 247, Holcomb, N. Y.
Williams Bros., Inc., 70 Commercial St., Portland 3, Me.

Eastern Region

Valley Equipment Company
404 Frick Building, Pittsburgh 19, Pa.
J. W. Pearson Co., Box 282
Hatboro, Penn.
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
540 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.
5250 Keystone Ct., Indianapolis 20, 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.
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

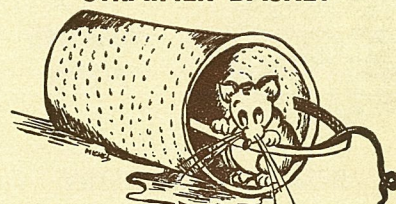
Canada—Ontario and Quebec Provinces

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



An irate feminine passenger in a Club Car demanded imperiously that the porter open the window. Another female passenger, hearing the request stated:

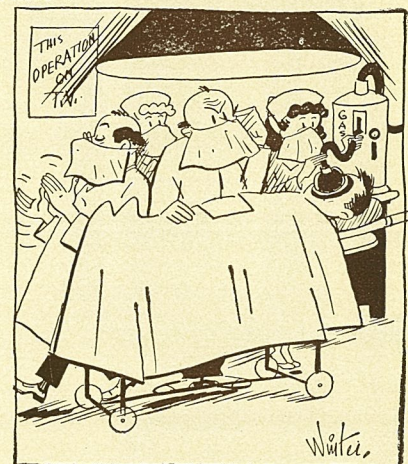
"Porter, if that window is opened, I will freeze to death".

"And if the window is kept closed, I will suffocate", said the first.

The porter was completely befuddled and turned to a man who was listening to the exchange with very apparent distaste.

"Say, Boss, what would you do?"

"Do", said the observer, "That's easy. Open the window and freeze one lady then close it and suffocate the other".



"There! I took him apart—you put him together again."

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