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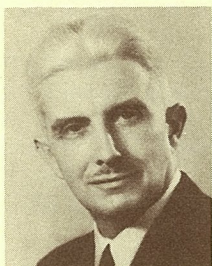
AN ANSWER TO FEAR STALKS THE STREETS

FREDERICK KRAISSL, JR., P.E.

Chairman

The Kraissl Company, Inc.

Those that read the U.S. News and World Report which includes me, will recognize the origin of this title as appearing in the October 28, 1980



CONSULTING
ENGINEER

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issue. There will be various interpretations most of which will be negative but, I am offering a positive interpretation that may be preferable and better interpret the decision of the majority.

It seems to me that in looking backward my ancestors saw nothing wrong in self defense. I am reminded of pictures showing couples going to church where the man "had a gun over his shoulder." The thing that must be emphasized and re-emphasized is that weakness does not insure security or freedom from attack but, quite the contrary. This is true on a local, statewide and national level.

The thing that is encouraging is that the majority of reliable individuals are grouping together to do something about it. Having served on a Municipal Council and Board of Health it seems clear that there are certain things which must be done as part of a group to accomplish mutual objectives.

Security is one of them. As we look backward our ability to be relieved of carrying arms is a function of the honesty, friendliness and well intentioned attitude of people met with on a daily basis or if in a jungle the added hazards of animals. The hand shake, I believe, was created by the desire to show that each individual had friendly intentions and was not prepared to use arms.

It takes a little time for individuals and groups to realize that we have permitted the lawless, the predators and unmoral to become a hazard. It

stems from the benign thought that everyone is right minded. When it becomes clear that this is a utopian wish and not a fact, it is encouraging to see the well recognized American Spirit function.

The first thing that should be done is to repeal the 1968 Federal Gun Control Law and states should do likewise. It is my opinion that the majority of our citizens both male and female are well intentioned. It is a very small minority that are the criminal class. There is no justification for a majority to let a minority terrorize. If criminally intentioned individuals know that the means of self defense has been removed from the majority, they become easier prey. This should be self evident and is probably the result of anti-gun laws, as criminals could not care less what laws they break.

The laws should be renovated making an individual's home again his castle. As it is now, if an invader is shot on illegal entry, it is a possibility in some states that the defender will be charged. There should be no worry on the part of any defender that this could happen. As the matter now stands, the criminal has a good chance of escaping the consequence of his action. This should be reduced to a minimum.

The Police Departments of most areas are competent, trustworthy agencies and there should be collaboration between citizens groups and the police. When gun control laws are repealed, the police should be encouraged to establish training programs. Most Police Departments have pistol ranges and it is probable that they could find time to act as instructors. A Turkey Shoot once a year is not enough for most individuals, especially ladies who have had no previous military training.

It should be remembered that Police Departments do not have a crystal ball. They have no means of knowing when and where a crime will be attempted. They can come in afterward and do a good job of apprehending the perpetrator but this may be too late for the victim.

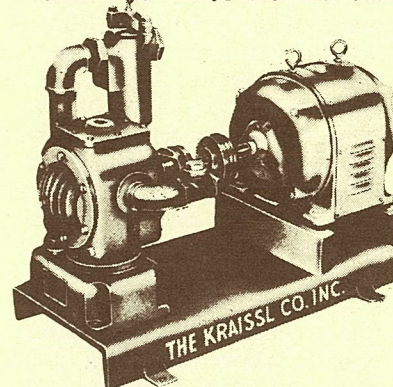
It seems encouraging to learn that citizens groups are forming for self defense and that of mutual interests. It is hoped that they will force legislators to reverse gun control laws. I would not think intelligent criminals would desire to combat well trained, armed patrols but a few well publicized incidents might quickly show that the patrolled area was not productive for criminals.

Taxes are high enough now. An increased police force would only make them go higher and cannot be afforded by most communities. There should be a balance between a police force and the population together with the patrols of individuals which could be organized along the lines of Home Guards.

It is believed that this is not a Portrait of a Nation Afraid but is a Portrait of National Self-Reliance.

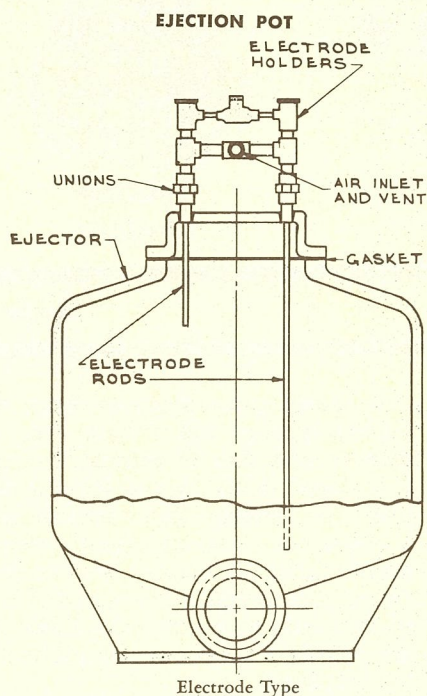
Furthermore, it should be remembered that gun removal answers one of the requirements of the Communist Rules of Revolution. I believe the great majority of citizens do not want communistic rules imposed on them and everything to preclude this would be a matter of insistence.

PUMPING LIQUIDS BY AIR



When intermittent flow is not disadvantageous pumping by air often is preferable. Usually this relates to handling unpleasant liquids such as sewage but is not by any means limited to this material. It should be given consideration when batch transfer is an acceptable procedure.

It involves an air pump, receiver and accessories. We build the air pumps and usually a specialist organization builds the receiver.



While our Air Pumps have been noted for their longevity for all services to which they have been applied, we believe the following quote from a letter received February 9, 1977 will be of interest:

"Please send price and data on the Pumps to replace the two old pumps in use for twenty years, made by your company."

Upon checking the records, we found that they were supplied to the Blackburn-Smith Manufacturing Company in 1956 which corroborates the quoted remarks. Sewage Ejector Pumps call for what we call continuous intermittent service, where the air pump runs on an approximate thirty second on and thirty second off, cycle, the latter period allocated to filling the ejector pot by gravity. We do not approve of an installation with an intermediate air tank, and hope we have explained our reasons to the satisfaction of all concerned but are again stating them for those who wish long and comparatively service free operation, other than regular lubrication, inspection and oil addition to the oil reservoir when required. We are spot lighting these reasons as follows:

1. Tank connected pumps require that a pressure of approximately ten pounds, above operating pressure, is necessary. Many times only ten pounds is required to raise the sewage 23 feet to the sewer and this means double the pressure, which must be paid for in horse power input, which in no way contributes to energy conservation but increases the cost of the motors and controls, with reduced length of life in service. The reason is simple. When an air pump is connected to an air tank, it is almost certain that cut in and cut out controls will be used. Most of these

require a differential of about ten pounds to be efficient, which obviously must be above the ejection pressure.

2. One reason for using air tanks is to permit the installation of under sized compressors, so that they are kept running during the filling cycle of the ejector operation. This increases the wear on the compressors, as they can run continuously without shut down which causes the following destructive effects. It has been found with many mechanisms, that as the machine heats up, wear becomes greater when operation is above the designed temperature. Part of this is due to reducing the thickness of the lubricating film. Part is due to differences in the coefficient of expansion of dissimilar metals, such as iron and steel. Part is due to displacement elements represented by the blades, having a decreased life at higher temperatures. It puts a greater strain on the cooling water requirements of water cooled pumps with practical elimination of fan cooled compressors of the direct connected design for this application. As temperatures go up, more of the lubricating oil will be converted into the vapor phase, causing excessive oil consumption as it is impractical to condense vaporized oil in such installations. There is no need for air tanks with our direct motor driven air pumps as they eliminate for all practical purposes, pulsations in the air supply. When air tanks are furnished they are probably built to ASME Specifications and when these are made unnecessary, the cost of installation of the suggested size air pump can usually be competitively accommodated.

3. When air tanks are eliminated, the air pump starts up at zero pressure, and builds up almost instantaneously to ejection pressure, but there is no sharp impact of an air pump starting up against a pressure cushion, and unloaders should be unnecessary. There is also insurance against the air pump running continuously until it seizes up due to an air leak somewhere in the line.

The receiver can usually be positioned so that it is supplied by gravity. As it gradually fills, it reaches a point where a level switch is activated which starts in the air pump. This produces a pressure build up of air until the discharge pressure is reached and the liquid is transferred activating the low level switch which stops the air pump. We are showing a drawing of a receiver that is equipped with electrode controls but they can be substituted by float controls if this is preferable.

There is no piece of mechanical equipment that does not have to be serviced sometime. We cannot believe that servicing a sewage pump that has

been submerged in such material is a pleasant procedure. If after a number of years parts need replacement in the air pump, this does not provide the same type of undesirable features. It can be a relatively clean operation with much of the unpleasantness eliminated.

Having our air pumps on this application for many years permits us to suggest that the designers of such systems were not wrong in their choice.

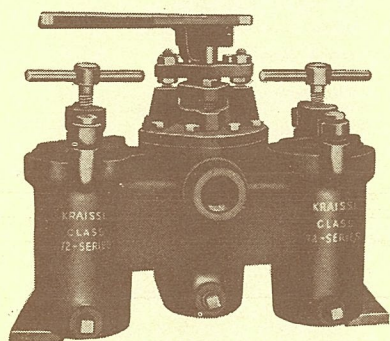
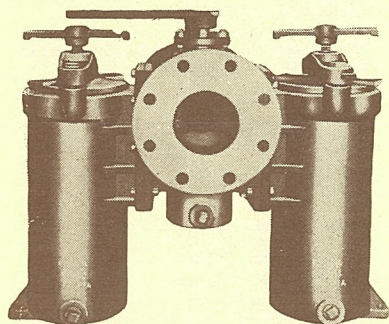
BARRIER SEPARATORS

According to our definitions this includes both strainers and filters. We draw the line for convenience, between strainers and filters at perforated metal screens or the equivalent in coarse mesh. Usually the same housing can accommodate either strainer or filter inserts so that if an incorrect selection is made to meet an application, the insert or basket which is inconsequential in relative expense can be substituted.

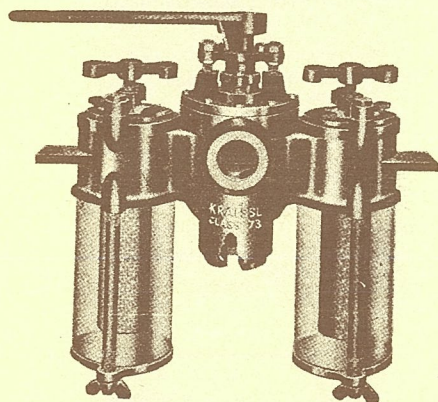
Single separators can be selected if the process or application calls for intermittent service or inspection. When the application calls for continuous operation a duplex unit is needed so that one side can be serviced while the other is in operation.

THREE DISTINCT DESIGNS OF KRAISSL SEPARATORS

Our separators come in three distinct designs in the duplex series. The class 72A is the three piece construction designation and was the first of our series on the market. To make it as compact as possible the flanges which match up with the side bodies are rectangular. This design minimizes core shifts and consequently provides very uniform wall thickness. Furthermore the rectangular ports for the side bodies provide reinforcement characteristic of a high pressure autoclave and some of our high pressure models use this construction. This series is of course underwriter listed. As foundries became more experienced in casting our designs, it was possible to bring out our class 72 Integral series, for most of the standard pressure series and some of the high pressure line. These designs must meet Underwriter requirements with a large safety factor and as the sizes go up, there is a trade off between the integral construction and the three piece design. We attempt to suggest the design that seems best for the application. Since there is an overlap, we consider the integral and three piece construction a related series.



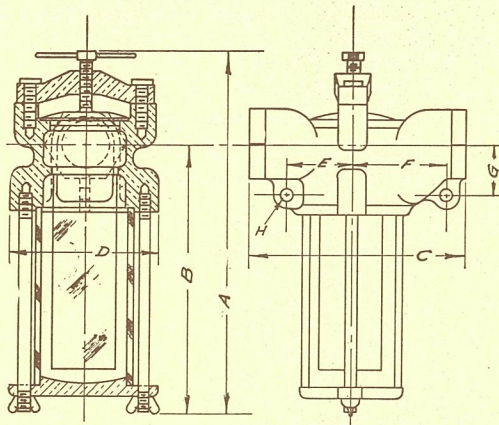
THE VERSATILE CLASS 73 SEPARATORS



Our next design is the Class 73 Series. This was brought into being to meet the needs of the Marine Industry for cooling water of engines. It can be used with internal flow, in which case separated cooling water debris can be lifted out. On external flow, the debris is collected outside the separator basket and the need of cleaning when necessary, is made quite apparent.

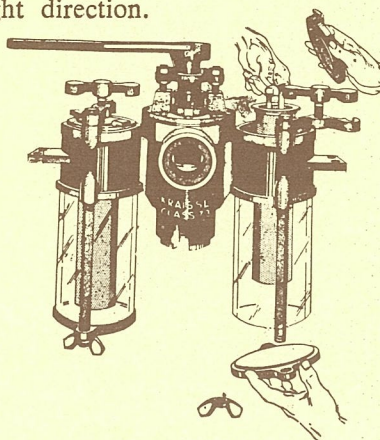
The one thing that seems hard to understand is why the marine field does not specify hot dipped galvanized construction. The price of bronze has escalated out of consideration except for government service and the cost of these units could be brought in line with other items of marine construction.

CLASS 73 SERIES SINGLE SEPARATORS SIZES AND DIMENSIONS

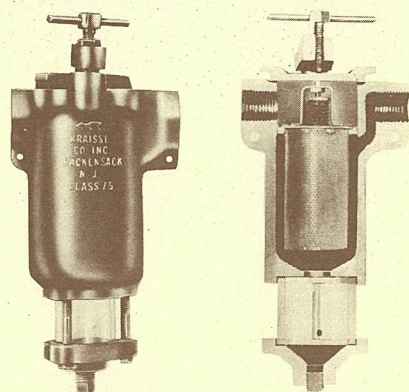


MODEL	NPT	A	B	C	D	E	F	G	H
73-4	1/2	7 3/8	4 3/8	4	3 3/4	1 1/2	2	7/8	3/4
73-6	3/4	9 3/8	6 3/8	5 1/2	3 3/4	1 3/4	2 3/8	1 1/2	3/2
73-8	1	9 3/8	6 3/8	5 1/2	3 3/4	1 3/4	2 3/8	1 1/2	3/2
73-10	1 1/4	11 3/8	7 3/8	7	5	2	3	1 3/8	7/8
73-12	1 1/2	13 3/8	9 3/8	7	5	2	3	1 3/8	7/8
73-14	2	15 3/8	10 3/8	9 3/4	5 3/8	2 3/8	4 1/4	2 1/4	7/8
73-16	2 1/2	18 3/8	13 3/8	9 3/4	5 3/8	2 3/8	4 1/4	2 1/4	7/8

Pressure drop through these units should not be ignored so we have designed the ports and channels to be no less than the area of the nominal pipe size with which they should be used. This makes the units more costly when bronze construction is specified. However, this could be counteracted by specifying galvanized iron. There are other reasons for doing this. Many ships are used in salt water transportation. Practically all engines are iron construction. Galvanic action can be set up between anything bronze and iron in a circulating salt water installation and the less noble metal which is, of course, the iron, suffers. It would be difficult to speculate how many engines have a reduced life because of this but it must be substantial. The galvanizing of the iron is in itself a deterrent as zinc is an inhibitor of this action. So the simple action of specifying galvanized construction for our Class 73 separators should lower costs and increase engine life, both steps in the right direction.



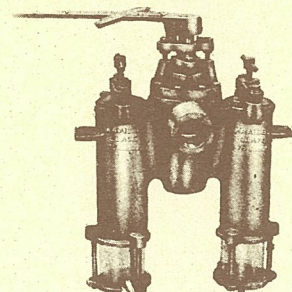
CLASS 75 SERIES SEPARATORS



Our Class 75 series separators were brought into being by the experience of water in fuel so this is not theory. On a boating trip, the engine stopped in the middle of the Hudson River: fortunately a fellow yachtsman seeing the predicament threw a line and towed the boat back to its berth. An installation was set up on the dock and 7-8 gallons of water removed from approximately 80 gallons of gasoline. It has been long known that 120 mesh screen will remove water from gasoline in an excess of fuel. Where the water came from is anybody's guess but we suspect cumulative condensation. The atmosphere can be likened to a huge sponge that can accept moisture vapor when warm and squeeze it out when the temperature drops. We designed the Class 75 series with a rat trap sump so extraneous matter including water would be trapped in the sump and movement of the vehicle would minimize or preclude its getting into the fuel line.

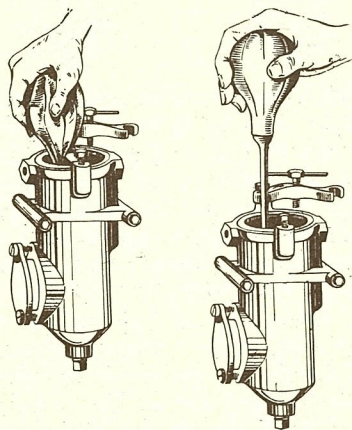
With so many vehicles including boats using diesel oil for fuel, elimination of extraneous matter becomes even more important.

It was subsequently proposed that a 200 mesh screen might reduce water content to the point where it may have no disadvantageous effect on diesel engine performance. With the increase in the use of diesel powered vehicles and the uncertainty of sources of fuel supply this type of device may be of great importance in producing an acceptable fuel. It is easily serviced, has a visible sump, so the accumulation of debris can be seen at a glance and may be an important contribution to a smooth running engine.



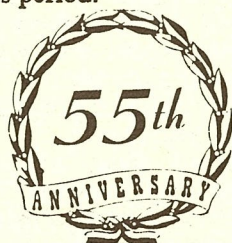
One of the features of the Class 75 series design is that separated impurities, liquid and semi-liquid, fall through the rat-trap hole and accumulate in the transparent sump, which is manufactured from heavy, wall Pyrex Gauge Glass. With enclosed bilges on boats, it is preferable to lift out separated liquid impurities by use of a storage battery syringe as indicated.

If the unit is mounted in a position of accessibility, this can be done from the top very simply and very easily without the use of special wrenches.



VACATION NOTICE

The Vacation Period, while never painless, was found least disturbing last year when arranged for the last week in July and first week of August. We are scheduling complete shut down during this period.



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Capt. C. V. Watson
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Cape Elizabeth, Maine 04107

Eastern Region

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Akron, N. Y. 14001

Jobe & Co., Inc.
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Baltimore, Md. 21213

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Goldsboro, No. Carolina 27530
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