AN ADEQUATE SUPPLY OF STRATEGIC MINERALS IS A MUST FOR SURVIVAL

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If the data supplied in the February 8, 1982 issue of U.S. News and World Report is accurate, some agency appears to be falling down on its job.

According to this information we are supposed to have 85 million pounds of cobalt, and we only have 40 million pounds, less than half supposed to be on hand. Likewise, 195,000 tons of titanium, but we have only 32,000 tons, less than one sixth, and so on over the list. Shortly after inauguration President Reagan proposed investing 100 million dollars for rebuilding our strategic mineral stock pikes, and the first purchase was 5.2 million pounds of cobalt. This program must be accelerated.

The definition of a strategic mineral is that it is mandatory for our survival, and we have an insufficiency under our control. Whoever determined the extent of our necessary stockpile to preclude running out of supplies, this information should be rechecked, but it is not information that should be hidden. If the figures are found to be accurate, the stockpile should be rebuilt as a priority, then there should be a concerted effort to reduce those minerals on which there is a foreign dependency so that a cut-off due to changing political conditions is reduced to a minimum. Third world suppliers should be used to a maximum as long as they remain reliable. They need cash and this is an economic and precedent-established means for getting it, but like all matters relating to survival, we should have alternate sources of supply under our control.

One such source is mentioned, the abundance of metallic nodules on the ocean floors. These contain manganese and cobalt, two of the six elements that are particularly important, both to the accelerated defense and energy programs. There should be determined the potential available and the time table of supply from this source.

Instead of involving ourselves in increasing numbers of social problems let's give priority to matters of survival first. Let's be sure there is a Chief of Strategic Minerals in the Department of Defense whose responsibility is an adequate supply. Let's be sure we can control what is needed. Then let us turn to successful bidders on Government contracts being sure they can procure the necessary ingredients and make this proof a mandatory part of procurement. Perhaps we have as yet unfound sources of the strategic minerals in the vast areas the ecologists wish to turn over to the lesser animals.

Let's find out. It is nice to be thoughtful about animals, but many animals can adjust to human proximity if not molested. We have quite a few non-tax paying and non-rent paying animal residents on the property of the major "stock holders" of this company and these animals even raid our garbage cans in congested areas, many times getting themselves killed by unnecessarily crossing traffic congested highways.

It is my opinion that we must completely explore all areas for strategic minerals before these areas are turned over to animals as I believe humans, particularly our citizens, should have priority for survival. If you agree, write the President in support of his strategic mineral program, and your U.S. Senators and Representatives, asking them to support the President's program. This solicitation is a contribution of this company, and you will note does not ask for a financial donation.

OUR CLASS 60 REDUCTION DRIVE PUMPS SHOULD BE SATISFACTORY FOR NEW FUELS - METHACOAL AND ETHACOAL.

On the theory that if it will flow and iron and steel construction is satisfactory, our Class 60 Series Reduction Drive Pumps should be able to handle these new fuels for industrial fuel burning requirements.

Methacol has been stabilized by a method of preparation so that settling has been retarded or prevented sufficiently to allow pumping through pipe lines, permitting storage to be effected without the requirement of high intensity agitation or stirring.

Methacol or ethacol as prepared by preferable methods is better termed a suspensoid rather than a slurry. It can be coal-alcohol, coal-alcohol-water, and coal-alcohol-oil in composition. It is reported to be of surprisingly low viscosity and less abrasive than coal slurries. Methacol may be burned as a combustion fuel to replace petroleum derived fuels or natural gas, reducing our dependence on foreign oil. With our large deposits of coal and our ability to produce industrial alcohol, it is hoped it will be found that there is no obstacle to its use as indicated.

It appears that accessory equipment has not been completely standardized, but in analyzing the composition and potential physical properties, our
pumps which have a history of long life with both light and heavy oil, would not be subjected to much more severe operating conditions. In this connection the reduction drive carried on an independently lubricated ball bearing support unit having a relatively large capacity lubricant reservoir, and direct connected to the pump by means of a loose coupling, can be run at the most advantageous speed for each service requirement. All that is necessary to change speed, if required, is changing the belts and pulleys, which can probably be obtained at local hardware stores, as the A belt has been standardized for most applications.

Up to 100 psig, our standard pumps should meet the requirements and up to 150 psig our look-alike Class 60H pumps are suggested. If higher pressures are needed there is the Class 66 Series.

Let's investigate these new fuels that would keep this country free of foreign oil dependency. Estimates indicate that when production is developed the cost over oil can be considerably less. This is most important as the production is reported to be the result of a patented process, and it is essential that our energy costs be reduced to acceptable amounts. Even when we had an adequate supply of domestic crude oil, royalties were paid to property owners of successful wells, so royalties on patented processes should not be a deterrent if negotiated in advance.

**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.

**LIQUID FUEL SYSTEMS NEED STRAINERS**

Whether your system burns light oil, heavy oil, methanol or ethanol, strainers are needed to minimize operating difficulties.

**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.
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.

WHERE CYCLIC OPERATION CAN BE USED, AIR IS A GOOD PUMPING METHOD FOR FOUL LIQUIDS

Probably the foulest of foul liquids is sewage. All mechanisms need service at some point. Can anyone imagine a more disgusting job than servicing a sewage pump that has been immersed in sewage for long periods of time? Contrast this with an air pump which should never be in contact with the sewage in a properly designed system.

First let us define cyclic operation. This is our term for a pumping operation of, say, thirty seconds on and thirty seconds off. The word intermittent does not define it as intermittent interruption could be anything on a time table basis.

Cyclic operation is usually required where timed flow is mandatory, such as fifty or one hundred gallons per minute for extended periods, but the ejection period must be on a half minute basis so that the other half minute can be devoted to filling the ejector pot.

Our Class 25 series air pumps have been used for long periods of time for this purpose, and we believe our system of force feed lubrication and sealing is responsible for their longevity. The displacement cavity at the base of the blades is used as an integral oil pump that lifts the oil from the oil reservoir and on the return stroke of the blades forces the oil to the positions that must be lubricated and sealed. We call this our force feed lubrication and sealing system. Oil in the discharge air is separated by the air-oil separators and returned to the lubricating system.

Since our pumps are direct connected to motor, discharged air is practically without pulsation, so a reservoir tank is eliminated. Where compressed air tanks are employed they are not inexpensive, as usually ASME specifications are stipulated. The mechanics of flow control can be by float switch or electronic devices. Both have been used for many years. The cyclic interval is very simple. Liquid flows into the ejector pot by gravity until it reaches the upper control point which actuates the air pump. Air pressure is built up in the ejector pot until the control pressure is reached at which time ejection occurs, and when the ejector pot has been emptied, the air pump is stopped by the low level control.

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 due to reducing the thickness of the lubricating film. Part is due to differences in the co-efficient 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.

SALES REPRESENTATION

HOME OFFICE
We have reserved the areas of Connecticut, 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
Boston-Cambridge Corp, Stamford, Conn.
Salem Ind., Plymouth, Salem, N. H. 03079
Capt. C. O. Watson
Maine, Cape Elizabeth, Maine 04107

Eastern Region
Filtration Unlimited Buffalo & Associates, Akron, N.Y. 14001
Jobs & Co., Inc. 1815 Edson Hwy.
Baltimore, Md. 21213
Daily Associates
B. E. Mt. Vernon Ave.
Haddonfield, N. J. 08033
R. C. White Co. 3063 Enterprise Blvd.
Bethlehem, Pa. 15102

Southwest Region
Power Equipment Co. 1307 West Main St.
Richmond, Va. 23201
Dillon Supply Company — Main Office
Raleigh, N. C. 27602
Dillon Supply Company, Durham, N.C. 27702
Dillon Supply Company Raleigh, N.C. 27702
Dillon Supply Company, Rocky Mt., N. Carolina 27801
Dillon Supply Company, Goldsboro, N. Carolina 27530
Dillon Supply Company, Charlotte, N. Carolina 28201
Boiler Supply Company, Inc. 490 Craighead Street
Nashville, Tenn. 37204
601 Van St., N. W.
Knoxville, Tenn. 37921
Applied Engineering Co., Inc., P. O. Box 526, Orangeburg, S. C. 29115
R. A. Litkenhaus & Assoc., Inc., P. O. Box 16322
7825 Baymeadows Way, Suite 104
Jacksonville, Florida 32216
Phone: (904) 737-3536
Spath, Farley & Co., 2121 Miami, FL, Atlanta, Ga. 30324
Proctor & Co., Box 2615, Birmingham, Ala. 35226

North Central Region
Comb & Groves, Inc., 336 W. Eight Mile Rd.
Farmdale, Mich. 48220
Heller Equipment Co., P. O. Box 1904
Grand Rapids, Mich. 49501

Central Region
M. Huffman Sales Co., 3044 Upton Ave.
Toledo, Ohio 43613
W. G. Taylor Co., 1909 Euclid Blvd., Cleveland, Ohio 44115
The Jordan Engineering Co., P. O. Box 3024
Cincinnati, Ohio 45230
T. A. Heidenreich Co., Inc.
2525 E. 54th Street
Indianapolis, Ind. 46220
Tibbs Engineering Co.
5438 Millikin Ave.
Chicago, Ill. 60630
A. K. Howell
No. 2 Enoor Dr.
St. Louis, Mo. 63124

South Central Region
Creele Engineering Co.
P. O. Box 23159, Harahan, La. 70183
Jack Tyler Engineering Co.
6112 Patterson Ave., Little Rock, Ark. 72209
Albert Sterling & Sons, Inc.
P. O. Box 66099, Houston, Texas 77006

Northwest Region
Baxter-Rutherford, Inc.
P. O. Box 42524 Terminal Annex
Seattle, Washington 98134

Western Region
Joy Borek & Assoc.
1690 Plymouth St.
Mountain View, Cal. 94043
Power Engineering Co.
364 W. North 600th St.
Salt Lake City, Utah 84110
Killian Gas Burner Co.
1240 S. Bascom St.
Denver, Colorado 80223

Southwest Region
Wagner Hydraulic Equip. Co.
2089 Westwood Blvd.
Los Angeles, California 90025
Engineered Sales Co.
5150 N. 16th St., Suite A-126
Phoenix, Arizona 85016

Canada—Ontario and Quebec Provinces
Kirk Equipment Ltd.
7435 Chester Ave
Montreal, Quebec, Canada H4W IM4
P. O. Box 508
Knowlton, Quebec, Canada
K. C. Hamilton Equip. Ltd. — Marine
Canada—British Columbia Province
Les Hall Filter Service Ltd.
346 E. Espanola
North Vancouver, B. C. V7L 1A4
Canada—Alberta Province
H. F. Clarke Limited
5220-1A St. E.
Calgary, Alberta, Canada

Hawaii
Tastic Equipment Co.
719 Ahiu St.
Honolulu, Hawaii 96803

Mexico
Ingenieria Temo Industrial, S. A.
Apartado 20-360
Mexico 20, D. F., Mexico

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