

A NAME WELL CHOSEN

by

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Igor J. Karassik retired as Chief Consulting Engineer, Dresser Pump Division, Dresser Industries, Incorporated. He was employed by Worthington in 1934, and was engaged in research and design work. Since that time, he has served in numerous capacities at Worthington, including specialization in the application of multistage high pressure pumps, power stations, Manager Multistage Pump Section, Consulting Engineer and Assistant Vice President, Manager of Planning, Pump and Heat Transfer Division, General Manager, Advance Products Division, and Vice President and Chief Consulting Engineer. He is now a Consulting Engineer, based in Maplewood, New Jersey.

Mr. Karassik has written numerous articles on centrifugal pumps and steam power plants for technical publications. He is also the author of the books Centrifugal Pumps—Selection, Operation and Maintenance, Engineers Guide to Centrifugal Pumps, and Centrifugal Pump Clinic, co-author of Pump Questions and Answers, and co-editor of The Pump Handbook. Mr. Karassik received his B.S. and M.S. degrees from Carnegie Institute of Technology. He is a Life Fellow of ASME and is a Professional Engineer in the State of New Jersey. He is also a member of Tau Beta Pi, Pi Tau Sigma, and Sigma Xi.

In 1980, he was awarded the first ASME Henry R. Worthington Medal. In 1981, he was elected an honorary member of the Russian-American Engineers Association.

The name I refer to is that of this Symposium. Note specifically the inclusion of the words “pump users.” It indicates that the purpose of this Symposium is to enlighten the pump users and not just talk of ourselves, the pump manufacturers, a practice that too often has been followed at other technical meetings. Because, through the graciousness of the conference organizers, I have been given the opportunity and the honor of giving the “Welcome Address” at the 12th meeting, I am pleased to be able to remind all of us of the importance of the subject matter of the papers will be presented here.

But before we start on the serious business which has brought us together, let our imaginations have free reign and try to visualize some morning in the future, preferably a cold winter morning. A weary, blurry-eyed glance at your watch tells you that you’re already 45 minutes late. You leap out of bed, shake a fist at the alarm clock—which has stopped—and sprint head-over-heels for the shower. To your dismay, there is no running water, nor, you notice, is there any electricity or heat. A blackout? A major natural catastrophe?

Feeling chilly and grumpy, you make your way to the kitchen for some hot coffee, only there is no cooking gas! You try to telephone someone to find out what’s happening. But the line is dead! Even the transistor radio is of no help: no stations are broadcasting. Then, a look out onto the streets reveals no cars,

no mass transit, and only a handful of confused, frightened people, Something was amiss. What could it be?

There were no newspapers, because there was no way to deliver them. Before long, all sorts of rumors were flying. A little later, rioting and looting broke out all over New York. The police were handicapped by the fact that all normal communication means had failed. By noon, the situation had become critical.

Elsewhere in the world the picture was essentially the same in cities and small towns. In the country, matters were simpler. When farmers found that there was no water, they went to the rivers, lakes and ponds with buckets and brought some water back. Just like their ancestors had always done, thousands of years ago.

The answer to this question, while certainly fictitious, is awesome in its implications. All the above would happen if one simple mechanical device—the pump—had stopped working across the world sometime during the night. For without pumps, civilization as we know it today could not exist.

Few industrial machines or tools have a longer history in the service of mankind than the pump. Every single industrial process underlining our civilization involves the transportation of liquids. Thus, the pump, the mechanical means of achieving this transportation, is so essential to these processes that their growth and development is linked intimately with the improvement of pumping equipment.

It is because of this that the role of the pump industry must be much more than the development of new and better pumps, the selling of these pumps and their manufacturing. It must also be the education of pump users in practices which consume less energy, provide troublefree operation for longer periods of time, and reduce the incidence of sudden premature failure.

It is exactly this responsibility that is being met at this International Pump Users Symposium. For at these meetings, in the lectures and tutorials that will follow, an opportunity is presented to all pump users to examine and evaluate the progress taking place in the equipment they will have to acquire. The attendees can even see some of this future, since many of the exhibits which they can visit include the first appearance of some of these innovations.

To be sure, much still remains to learn. To name but a few of the areas in which work needs to be done I will cite:

- An understanding of all the factors which affect the shape of the curve of the required NPSH vs the capacity of various percentages of drop in head, such as three percent, zero percent and at the incipient cavitation.
- A reasonable prediction of the life of an impeller operating, as it frequently does, under cavitating conditions.
- A more exact understanding of the phenomenon of internal recirculation in the impeller and a widely accepted method of predicting the capacity at which it occurs.
- A major reduction of the cost of magnetic bearings to make it possible to incorporate them in a large number of applications for which their present cost makes it possible to do so.

I have spoken of these matters before in my earlier presentations to this Symposium. And some of my conclusions are worth repeating albeit in a somewhat paraphrased fashion:

Liquids handling equipment must be considered to be a permanent and most important adjunct of our technological civilization. You will continue to see that this equipment becomes

more reliable and more effective. And because there will continue to be dedicated people who organize conferences, such as this one, and engineers ready to make their knowledge available by presenting papers at such conferences, users will continue to be an even better educated in the application, selection, installation, operation and maintenance of this equipment.