AN OPEN LETTER TO THE PUMP INDUSTRY

by

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Editor's Note: This paper was presented as the Welcome Address of the 5th International Pump Users Symposium. Since the text was different than that published in the Proceedings of that Symposium, Mr. Karassik graciously agreed to furnish the text of the text actually delivered for this printing.

Igor J. Karassik retired as Chief Consulting Engineer, Worthington Pump Division, Dresser Industries. 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 the Vice President, Manager of Planning, Pump and Heat Transfer Division, General Manager, Advance Products Division, and Vice President and Chief Consulting Engineer.

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 the 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. He is a charter member of the International Pump Users Advisory Committee. 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.*

I don't believe that you have come here this early in the morning to hear me present to you a condensed version of the paper Terry McGuire and I have contributed to the printed *Proceedings* of this Symposium. The more so, since the format of the presentation does not permit any of you who disagree with our suggestions to stand up and say so in front of your peers.

And yet, I should make some reference to the matters which form the subject of the Open Letter to the Pump Industry. Briefly, then, we suggested six steps that should be taken by pump manufactures acting in concert:

1. Realistically updated guideline charts should be published in the Hydraulic Institute Standards to reflect commercially attainable pump efficiencies and the effect of these efficiencies of deviations from standard selected constraints.

2. Test data should be accumulated to permit the prediction of the effect of factors which influence the expected life of an impeller under cavitating conditions.

3. Safe and sound guidelines should be set up in the Hydraulic Institute Standards both in the choice of suction specific speeds and in setting minimum flow restrictions.

4. The ANSI Standards should incorporate various additional options to allow users the selection of process pumps with longer expected life and greater reliability against unexpected failures.

5. More thought should be given to methods of fabrication that conserve scarce resources. Greater use should be made of coating materials to protect the wetted areas of the pumps.

6. Pump manufactures should exert greater efforts in the education of users in several important areas such as:

- pumps and energy conservation.
- adequacy of suction piping.
- monitoring pump performance.
- proper lubrication procedures.

Having now given you a brief overview of what our message is all about, I would like to devote a little more time to the most important portion of this message: the responsibility of our industry of educating the pump user. This is particularly relevant to the meetings we are to attend here. The Pump Symposium is primarily an educational endeavor for pump users. But this is not an endeavor which, having started yesterday with the holding of several special short courses, can be laid aside Thursday afternoon.

We don't intend to imply that our industry has completely neglected its educational responsibility—very far from it. The extensive literature which appears monthly in the technical press in form of articles and conference papers testifies to the fact that, at least in quantity, we seem to be attuned to the need of information. Our quarrel is not with the quantity of information, but rather with its nature. Let me explain why we think so.

There are three categories of facts that need to be imparted to pump users:

- *Incontrovertible facts*, as for instance, the fact that the presence of air will impair the performance of the pump.
- *Imprecise facts*, as for instance, for the time being, the exact correlation between the percentage of loss of head and capacity and the percentage of air entering the pump.
- And, finally, *controversial facts* of rather major differences in the perception or in the interpretation of some specific facts.

It is with our handling of this third category that I am most concerned. It is not that I object to our washing our dirty linen, so to speak, in public. It is just that by doing so we are confusing the average pump user.

There are two areas which particularly concern us in connection with the controversies which surround them:

- The first has to do with the handling of required and recommended NPSH. Suggestions range all the way from redefining required NPSH to the use of some arbitrarily chosen length of vapor bubble which would become and accepted standard for setting values of available NPSH.

• The second area of concern recommended values for minimum flows. This specific problem will be the subject of a special panel discussion on Thursday morning. I hope that some order may be created out of the chaos which today still surrounds this controversial subject. But if we are unable to come to some consensus of understanding, let us at least start using such words as "I believe that" or "I suspect that" or "It seems probable" instead of the so frequent "It has now been proven."

When the user hears two or more statements that contradict each other but that start with the same "It has now been proven," he is completely confused. Remember: "A man with one watch knows what time it is. A man with two watches does not."

I do not know exactly what we will have unleashed with this "open letter." Will we have given an impetus to changes that will benefit our technological civilization? Or will we, instead, create some resistance to these changes which are so badly needed? Time alone will not tell.

But if we do not do something about the tasks we have outlined in our paper, I am afraid that there will be more truth than poetry in a doggerel I wrote just the other day:

They frequently say, when things don't look like night: "There's a light at the end of the tunnel, alright. But once in a while, I'm afraid that there might be a tunnel that looms at the end of the light."