

CROSS TALK

QUARTERLY BULLETIN

FOUNDATION FOR CROSS-CONNECTION CONTROL RESEARCH
UNIVERSITY OF SOUTHERN CALIFORNIA
University Park, Los Angeles, California 90007

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4th Edition Now Available

The 4th Edition of the **MANUAL OF CROSS-CONNECTION CONTROL** is now off the presses and available through the USC Bookstore. The delay in publication was occasioned by two major factors. First was the re-setting of many pages of the copy due to major revisions and secondly, the printing plant was forced to relocate during the printing in order to make way for the new Los Angeles Convention Center. We began to feel that anything that could

delay publication would and did happen to us. And, we wish to express our thanks to all of the many individuals and offices that have waited so patiently for this day to arrive.

Due to the marked increase in the printing costs over the recent years we have been forced to increase the price of the **MANUAL**. The established price of the 4th Edition of the **MANUAL** is \$5.00 with a 10% discount available to Foundation Sup-

port Members. With applicable tax and shipping costs paid the price is \$5.65. Orders may be placed by addressing the Director of the Foundation; or, by mailing your orders directly to:

USC Bookstore
University of Southern California
University Park
Los Angeles, California 90007

Attn: Mr. C. A. Granstrom

Specifications Now Available

There have been a number of inquiries about the availability of a set of specifications for backflow prevention devices that is separate from the **MANUAL**. Recognizing that many cities, districts and states may be interested in the inclusion of a set of specifications "by references" we have prepared Section 10 of the **MANUAL** as a separate document bound in the distinctive blue backed cover of the Foundation. This document is titled **SPECIFICATION FOR CROSS-CONNECTION PREVENTION DEVICES** and is officially known as Report 69-2 of the Foundation. We sincerely hope that any agency will consider the inclusion of these specifications as an attach-

ment document when they are preparing any cross-connection control codes, ordinances or regulations.

Copies of the **SPECIFICATIONS FOR CROSS-CONNECTION PREVENTION DEVICES** may be ordered from the USC Bookstore at a price of \$0.85 per copy (\$1.00 incl. tax and mailing charges).

With the marked increase in the number of agencies taking cognizance of the necessity for backflow prevention it is hoped that any personnel having questions about the cross-connection control program or related subjects will take the opportunity of discussing these matters with the Foundation. This is an avenue of

communication that each Support Member of the Foundation is encouraged to use. If the problem involves something more than just the discussion or the correspondence level we will be happy to indicate the type of laboratory program that seems to be indicated together with an estimate of the time required and the cost. The physical plant has been made possible, in part, through the cooperation of a number of manufacturers of equipment. The daily operational costs of the Foundation are being covered by the Support Members of the Foundation. So, those who have problems that we may be of some assistance with are encouraged to write the Director.

New Interest

Within a week of each other, two manufacturers new to the Foundation program have inquired about the evaluation of their backflow prevention devices. This is an especially encouraging sign that the program of backflow prevention control is gaining

sufficient momentum so that new equipment manufacturers have spent time and effort to develop devices to the point where each feels ready to request a Laboratory evaluation. It is too early to hazard a guess as to when these devices will be ready for

the general market; but, we hope it will not be long. We do welcome this new interest in the control of contamination and pollution of potable water supplies.

Leonard L. Snyder

The many, many friends of Leonard L. Snyder will be saddened to know that he passed to his reward on January 23, 1969 at Fallbrook, Calif. Leonard was for many years the mainspring of the

development of cross-connection control devices at the *Backflow Engineering & Equipment Company*. He will always be remembered by his hard work, unbending honesty and the sincere conviction

that only the best way is the acceptable way to build a device. There is no compromise with health. He tried to enjoy his retirement but failing health was too much. We will all miss him.

Research Notes

In the second issue of Cross Talk the research of F. W. Patterson working under the direction of Prof. E. Kent Springer, Director of the Foundation For Cross-Connection Control Research was noted. This work has now been incorporated into a technical paper that has been reviewed and accepted by the American Society of Mechanical Engineers for presentation at the June 16-18, 1969 ASME Applied Mechanics and Fluids Engineering Conference to be held at Northwestern University, Evanston, Ill. The paper titled "*An Experimental Investigation of Critical Submergence for Vortexing in a Vertical Cylindrical Tank*" will be printed in pamphlet form for use at the meeting and a limited supply will be available through the Foundation

after the meeting.

The particular value of this research work is that it clearly shows that the vortex entrainment of air or vapor into the discharge pipe from a tank can be controlled by breaking up the surface swirl providing that a sufficient height of fluid stands over the outlet nozzle. Further, there are three very distinct levels of vortex development: a) under low flow rates only a "dimple" is created on the surface of the liquid and there is no entrainment of air or vapor into the discharge pipe; b) under intermediate flow rates there is an interrupted vortex which makes and breaks contact with the discharge pipe thus entraining a small amount of air or vapor; and, c) a fully developed vor-

tex at high flow rates which continuously entrains air or vapor into the discharge pipe and thus effectively reduces the liquid flow rate as well as cavitating the pump runner.

This work is only the beginning of a long-range investigation which is expected to provide design parameters for a range of sizes of cylindrical vessels with various sizes of concentric bottom discharge pipe. The previous work in this area has been with rectangular sumps and an upward suction discharge that is not centered in the sump. Thus the wall effect is very noticeable and is markedly different than is the usual case of a float-controlled tank on a process line or similar pumped installation. Inquiries on this work would be welcomed.

Laboratory Progress

The bottle-neck of a greatly delayed electrical panel has now been broken. The panel sections have been delivered to the Laboratory and work is now in progress to pull in the wire

and set the service transformers. The instrument panel has also been delivered and the control wiring is being pulled in. It won't be too much longer until the instrumentation will

be in use. The sump and pump recirculation system is expected to be installed in the early summer.



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