

KNOW THE FLOW TRAINING COURSE AND MANUAL

September 2002

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Alstonville NSW



National Program for
Irrigation Research and Development

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The “Know The Flow” (KTF) project was initiated in 1997 to address issues relating to the accurate measurement of the delivery of irrigation water to farms. Up until this time, most water that was metered was done so using Dethridge wheels. The accuracy of these devices was variable and they posed a risk in terms of OH&S.

Since the introduction of national COAG water reforms there has been a need for greater accuracy in water measurement. This has come about as a result of higher charges for water, increased accountability in water distribution, the need to minimise losses and in some cases, less water being available for irrigation. To obtain the accuracy levels required now, water supply authorities are replacing Dethridge wheels with other types of meters and are placing meters in previously unmetered supplies. This trend will continue through the next few years.

Three major recommendations were made as a result of the original KTF project. They were to:

1. develop standard testing procedures for water meters
2. scope the development of a training program in basic hydraulics and meter installation for relevant staff of authorities.
3. create a website to centralise and communicate information about metering.

This current project is designed to address the second recommendation. The KTF website was developed in 2000-01 to meet the communication requirements expressed in the third objective. An essential component of this site was to be publication of user reports of meter performance in the field. Reports that were received showed that most problems with meters were because the wrong type of meter had been selected for the situation, they were incorrectly installed or poorly maintained. This reinforced the need for improved knowledge and skills in meter selection, installation and maintenance within the irrigation water supply sector.

An effective way of improving knowledge and skills is to develop a training course that will meet the needs of the sector. Potential users of this course are irrigation manufacturers, consultants, irrigators, installers and staff members of irrigation supply authorities.

There has been a high degree of “on-the-job” learning about metering within organizations, and the website was the first step in summarizing this information and making it nationally available. It is now time to bring together the technical knowledge in more detail and present it in a way that is accessible to all who need it. Over the next few years the knowledge about metering will increase substantially and the training course will need to be structured in a way so that new knowledge can be added as it becomes available.

Irrigation water supply is a rural activity and the people who will want or need to undertake training may not always be able to access group training. Therefore, it is understood that the

training course will need to suit not just training in groups but be able to be used by individuals with varying degrees of support.

Scope of the training course

The training course is aimed at providing people who work in the rural irrigation water supply sector with information to effectively carry out flow metering operations for customer off-take. It does not cover the operation of supply channel metering, though the principles and many of the operations are similar.

The target audience is technical staff who are working with water meters, or are about to be involved in the reading, installation or maintenance of flow metering devices. These people will have a working knowledge of hydraulics and will most likely be working in a supervisory capacity.

Not all the contents of the training manual will be used during a training course. The manual has been developed as a resource for students and trainers to select from it the material they need.

Course content

The contents of the course include the following:

1. The need for metering
2. Basic concepts
3. Types of flowmeters
 - Dethridge meter
 - Dethridge Long meter
 - Propellor meter - open flow
 - Propeller meter – closed flow
 - Paddlewheel meter
 - Turbine meter
 - Ultrasonic meter
 - Electromagnetic meter
 - Venturi and orifice flowmeters
 - Flumes and weirs
4. Selecting a flowmeter

5. Installing flowmeters
6. Operation of flowmeters
7. Maintenance of flowmeters
8. Testing of flowmeters

How to use the manual

Large rural water supply agencies may organise their own training with a third party provider and will be happy to use the course manual if it meets their needs. How the course materials will be distributed will need to be negotiated.

Smaller rural water supply agencies will use a third-party training provider. They would still like to have direct access to the course manual as a reference and for informal self-paced learning.

More information

How to get a copy of the manual or find out about a training course:

ANCID
PO Box 165 TATURA, VIC 3616
Australia
Ph 0408 505 153
Email johnmap@g-mwater.com.au

This training manual is a part of an ongoing process to gather and compile information about the selection, installation, operation and maintenance of flowmeters for rural irrigation water supply. It is an aid to disseminating information contained on the *Know the Flow* website found at www.ancid.org.au/ktf/

The information contained in this publication has been published by Land & Water Australia to assist public knowledge and discussion and help improve the sustainable management of land, water and vegetation. Where technical information has been provided or contributed by author(s) external to the corporation, reader should contact the author(s) to make their own enquiries before making use of that information.

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