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Australasian Hydrographer

Inside this issue:

2002/3 DEADLINES

The following are dates by which I require submissions, and advertisements, for the newsletter and quarterly journal to be in my hands.(or on my computer!)

ISSUE	DATE
November (Q)	08/11/02
December (M)	06/12/02
January (M)	11/01/03
February (Q)	07/02/03
March (M)	07/03/03
April (M)	11/04/03
May (Q)	09/05/03
June (M)	06/06/03
July (M)	11/07/03
August (Q)	08/08/03

Welcome to the September/October Newsletter

As many of you would be aware a great majority of arable areas are being subjected to the start of a significant drought period, with the Bureau of Meteorology predicting a greater chance of less rain rather than more in future months for many of these areas.

Some might think that a lack of water in many of the systems would mean a lack of work for many of us - in fact the opposite is often true.

Water distribution managers suddenly don't believe the rating tables as critical low flows are reached (possible restrictions for irrigators with political fallout!) so demand more intensive gaugings at short notice to check the rating you have worked so hard to verify. Even when your additional gauging work shows strong confidence in the existing rating there might still be disbelief.

If your gauging shows that there is an oompteenth of a percent more flow in the river than the rating indicates they might quickly allocate that additional flow to appease interest groups even though the margin of error of a gauging would not support such a decision.

All this extra work might come on you just as the extensive maintenance /surveying/ instrument upgrade work program you had meticulously planned for the drier months (the only time you can do the work) is about to commence. Then, when the furore has died down, you get ready to do the work and the rains come tumbling down and you can't get in the rivers to do the dry weather work you had planned. You then get hauled over the coals for not completing the capital works that had been budgeted for the current financial year!

Then just as the drought has started, some water from a dam gets turned down an iconic river, and in the pub someone finds out you measure water and for the next hour you can't enjoy your beer as you get harassed about the logic of such an act occurring.

Sometimes you just can't win!

Mic Clayton

Our Corporate Members Are:
Hydrological Services Pty Ltd, Bureau of Meteorology, ECOWISE Environmental, Water Data Services Northern Territory Department of Lands, Planning and Environment Davidson Measurement Pty. Ltd., Scott Technical Instrument NZ Water and Rivers Commission of WA

AN AUSTRALIAN HANDBOOK OF STREAM ROUGHNESS COEFFICIENTS: HOW HYDROGRAPHERS CAN HELP

Anthony Ladson 1,1Brett Anderson,2Ian Rutherfurd3, Susan van de Meene4
1 Research Fellow, 2 Research Scholar, 3 Program Leader, 4 Vacation student,
Cooperative Research Centre for Catchment Hydrology, School of Anthropology, Geography and Environmental Studies, University of Melbourne, Victoria, Australia

ABSTRACT
Stream roughness is a critical parameter for open channel flow calculations and has an important influence on hydrographic and engineering practice. In many cases the selection of an appropriate stream roughness coefficient, such as Manning's n, is required, but often this is not straightforward. In other countries, particularly New Zealand and the United States, roughness coefficients have been collected for broad classes of streams, different types of vegetation and specific flow conditions. Pictorial guides or empirical equations, provide a firm basis for estimating these roughness coefficients. In some cases these guides are applicable to Australian conditions, but there are also many Australian streams that are not well covered by existing handbooks. It is also recognised that improved techniques to estimate roughness coefficients have the potential to provide benefit to those working in the area of hydraulics, including hydrographers, and to reduce costs to society.
It is now proposed to develop an Australian Handbook of Stream Roughness Coefficients. This will build on existing guides, and equations, and test their applicability through a series of case studies. Information collected by hydrographers will be a vital part of this effort. Roughness calculations can be made at any site where there are measurements of discharge, water surface slope and cross section dimensions. Any contributions of these data would be valuable and we invite hydrographers to collaborate in this project. Results from this work would also be available for use by hydrographers.

An Australian guide to stream roughness coefficients will only be successful if there is support from the industry and individuals to supply and use the information. If you would like more information, know of data that should be included in the project, or have data to contribute please visit the project web site or contact the authors.

The above paper was presented at the 11th Australian Hydrographic Conference by Tony Ladson. It is expected that the full paper will be available in the next quarterly journal if it does not appear on our website prior to that issue.
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TECHNO HEAD

WHO'S AFRAID OF SDI-12??

Techno head downloaded the manual for SDI-12 from the web the other day to see what the fuss was about. Many pages later Techno Head decided that there was too much in the way of commands made up of meaningless numbers and exclamation marks.

'I've enough to worry about with 4-20 mA, bits and bytes and remembering to wind up the clocks' he thought.

Techno heads mate, Psychobabble, dropped in to see what the fuss was. 'Hey Techno Head, you only need to know, at the most, four commands for what you want to do with the gear you use for stream monitoring to get by with' he announced, 'Try these on for size'.

'The first one is you asking a sensor who he is as follows':

?!

'but this only works if you are connected to a single sensor. If you have more than one connected to the SDI-12 connection (bus) they will all try and talk to you at once and you won't get an answer, much like your mates at the pub on a Friday night!'

(cont page 4)

AHA Office Bearers and Contact Information

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Marshall.Leslie@saugov.sa.gov.au

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Scott.Walker@sydneywater.com.au

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jskinner@ecowise.com.au

Web Site: http://www.austhydro.tascom.net

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OR

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TECHNO HEAD

(from page 3)

'The next one you might need is to change the address of a sensor if you have sensors with the same address (identifier) connected to the SDI-12 bus so that they are all individuals like in the Life of Brian. For this one you type the following':

aAb!

'where a is the original address and b is the new address'

'Now before you can read the latest data from a sensor you need to ask the sensor to actually do the measurement as follows:

aM!

where a is the address of the sensor.'

'Only after you you make the measurement, and allow time for the sensor to complete its measurement cycle (warm up and the like) can you ask it for its data with

aD0!

where again the a is the address of the sensor whether it be a single or multiparameter sensor'

'So did you get all that Technohead?' asked Psychobabble.

Technohead looked at Psychobabble with a slightly glazed look. 'Who's Brian?'

AUSTRALIAN RIVER STATION NUMBERING SYSTEM

The Australian Water Resources Council (AWRC) introduced the national station numbering system in the 1960s. During the 1990s and, partially as a consequence of the upheaval in the water industry caused by the COAG water reform process, adherence to the numbering system has declined. The major agencies in the other States and Territories still use forms of the AWRC system however the practices of the smaller water agencies in these States and Territories are unknown. The changes in the water industry and the decline in the use of the numbering system have resulted in a number of problems associated with the management of the surface water network and the exchange, transfer and use of the data collected.

In the next quarterly Australasian Hydrographer this paper will be published in its entirety for discussion. The purpose of this paper is to describe the AWRC numbering system, to present what is known about current practices and to raise a number of questions about the future of the numbering system. It is hoped this will prompt discussion, that will result in an acceptable process for resolving the problems that have been identified.

Distance Education for Hydrographers-In-Training

Neil Harper OTEN-DE ,TAFENSW

The following paper was presented at the 11th Hydrographic Conference, July 2002.

Abstract:

Why Distance Education Through OTEN-DE?

- ***Comprehensive learning resources***
- ***Integrated with workplace learning***
- ***Self-paced***
- ***Utilise the TAFE NSW Network***
- ***On-line Student Support***
- ***35,000 enrolments, 250 Courses (2001)***

Training Program in Hydrology and Environmental Management

- ***To satisfy requirements for continuing professional development.***
- ***20 modules currently available.***
- ***Modules chosen from the Diploma course (the full Diploma is not currently available from TAFE NSW).***
- **Specialist Hydrography Modules**
- **Civil Engineering Modules**
- **Communications Modules**
- **Other Modules**
- **Modules Under Development**

The Future?

- ***57% of the Diploma is yet to be developed***
- ***A Certificate IV exit is proposed***
- ***Further learning resource development will need to be funded by the industry.***

TRAINING PROGRAM IN HYDROLOGY & ENVIRONMENTAL MANAGEMENT – STATEMENT OF ATTAINMENT

Course number: 8046

Course overview

The course aims to provide students with the skills required to carry out the duties expected of a Hydrographer.

The emphasis of the course is for the student to develop the skills required to gather, present, and analyse data required by enterprises whose business involves:

- the use of water as a natural resource
- supplying of untreated bulk water to end users
- control and treatment of waste water, tailings, leachate, ground water pollution, stormwater run off and drainage
- supplying information for weather forecasting, rainfall, run off, drainage, flood prediction, water budgets, allocation, and licensing compliance
- engineering and environmental monitoring and management of water catchments.

This program is made up of the bank of national modules developed for the water industry.

Course award and duration

This course has been developed under the Australian Qualification Framework.
Students who successfully complete one or more group A modules will receive a Statement of Attainment.
The maximum time allowed to complete this course through OTEN-DE is one year. Students who do not complete their studies within the year may re-enrol in the following year.
The course is equivalent to 200 hours of classroom attendance.
However, students studying by distance education usually find that they need to allocate additional study time in order to complete this course. Please note:

- Modules that are 54 hours or less must be completed within 12 months from enrolment.
- Modules that are 55 hours or more must be completed within 2 years from enrolment.

Employment opportunities

When you have completed this course, you will have the knowledge and skill to confidently apply for positions such as an hydrographer or gauging technician that are concerned with the role of testing, monitoring and managing the functions associated with the management of water catchments.
Most students undertake this course because it is a condition of their employment. It is possible that students who commence this course on their own initiative may find employment during the course of their studies. A guarantee of employment cannot be given by TAFE.

Course delivery

You will receive OTEN-DE distance learning materials and study at home at your own pace. You will be required to submit assignments to OTEN-DE for comment and assessment.
Classroom attendance is usually not required. However, if some subjects require attendance at compulsory practical sessions or tutorial, the details will be included in the section called Course Structure.

Course entry requirements

Students require:

- Year 12 or equivalent, or
- Water Industry Operations Certificates III or IV, or

- Mature age entry (ie persons over 20 years of age or more).

You must attach a copy of your qualifications to your enrolment form.

Course structure

Details of the course structure are attached.
Not all modules are available from OTEN-DE. Details of the modules available at OTEN-DE are shown below under Group A and Group B.
Completion of some modules requires students to attend practical sessions. Since some of these practicals are only held once a year, it is important that prospective students enquire of the teaching staff about the likely timing of the practical component to ensure that completion of the modules is possible within the time period.

Course modules

Students may complete either one or any number of modules so that the total hours of modules do not exceed 200 hours per enrolment period. For students wishing to progress at the maximum rate, this requirement will necessitate forward planning by students.
The following modules are available or are soon to be available:

Core modules – "Group A"

NSW module no	*National module code*	*Module name*	*Hours*
2991AJ	EB071	Project Management	36
2991P	EA040	Occupational Health & Safety	18
2937H		Introduction to GIS	36
2991AE	EA857	Pipe and Channel Flow	18
2991AU	EA855	Hydraulic Mechanics	18
1742A	EB030	Advanced Quality Concepts	36
8004C		Introduction to Hydrography	18
8004D		Plan and Map Interpretation A	36
8004E		Plan and Map Interpretation B	27
8004F		Water Industry Basic Instrumentation A	36
8004H		Water Industry Specialist Instrumentation	18
8004J		Applications of Land Surveying	45

Core modules – "Group B"

NSW module no	*National module code*	*Module name*	*Hours*
8979H	EA025/ NCS009	Negotiation Skills	20
8979J	NCS010	Team Building Communication	20
8979P	EA027/ NCS015	Presenting Reports	20
2991E	EA026	Computers and their application to CAD	36
2991B	EA003	Engineering Maths B	36
2991H	EA064	Computer Aided Drafting 1	36
2480D	NITTSS1	Spreadsheets 1	18
2480E	ITTDB1	Database 1	18

Other group "A" and "B" modules.

OTEN is exploring the opportunities to develop these modules but is unable to advise at this stage whether or when they might be made available. Further enquiries should be directed to the Building and Construction teachers on 02 9715 8485.

Practical work

Students enrolled in 2937H Introduction to GIS, are required to attend a computer workshop. Students will be required to pay travel costs to and from the practical session as well as any incidental expenses such as residential accommodation and meals. Specific details will be forwarded to students following enrolment in this module.

Learning materials

OTEN-DE will provide learning materials for the subject content of the course in the form of printed materials and/or computer disks. You will be required to purchase additional texts (approximate cost, $400) necessary for the completion of the core subjects/modules. You may also need to purchase additional texts depending on electives chosen.

Assessment

The assessment for this course is written assignments tests/examinations and practical tests.

Enquiries

OTEN-DE
51 Wentworth Road
Strathfield NSW 2135
ph: (02) 9715 8000
fax: (02) 9715 8445
e-mail: oten.courseinfo@tafensw.edu.au

Engineering & Environmental Data Management Systems

Hydstra Modelling & Telemetry Seminars for HYDSYS Users

Hydstra is holding two one-day seminars to introduce current HYDSYS users to the TimeStudio telemetry and modelling modules.

The seminars are designed to cover a range of technologies with the aim of providing you with an opportunity to catch up with technological developments across the industry. To this end we have invited a number of industry representatives to deliver updates in their area of expertise and to be available to answer your questions. In the case of telemetry the following areas will be covered:

- Hydstra Telemetry overview
- Integration of Hydstra Telemetry and Modeling
- Telstra's IRIDIUM satellite service
- Telstra's CDMA network
- MAXON CDMA modems and control units
- Optus' StarTrack service
- Sydney Water's experience with StarTrack

The Modelling seminar will demonstrate a range of models and the automation features of Hydstra Modelling. The seminar will include:

- Introduction to Hydstra Modelling (HYDSYS MODSYN and TimeStudio Modelling);
- Paper Presentations on Applications of Modelling
- Modelling for Analysis
- Modelling for Hydrological Applications

The seminars will be structured to provide ample opportunity for questions and possible ad hoc workshops where appropriate.

Location	Sydney Records Centre Globe St The Rocks, Sydney
Date and Time	Telemetry—Wednesday, 13 November 2002 Modeling—Thursday, 14 November 2002
Cost	FREE, lunch and morning and afternoon tea will be provided

For further information or to register for either or both of the seminars please contact: Hydstra support staff shown below.

RSVP Brian Higgisson or Tom Riley before 1 November 2002
(02) 6288 2302 or support@hydstra.com

Application For-Renewal of Membership

The Secretary,
Australian Hydrographers Association,
C/- 14 Kosciusko Street,
TRARALGON,
VICTORIA 3844

Dear Sir

I wish to Become a Member/Renew my Membership of the Australian Hydrographers Association.

Name: _____

Address: _____

_____

Phone: _____

e-mail: _____

Employer: _____

Title: _____

Address: _____

_____

Membership Grade: **Member ($100 per annum)**
Retired/Student/Cadet ($50 per annum)
Corporate ($500 per annum)

I enclose **$** .

I wish to receive my monthly Newsletters by **e-mail/post/I will down-load from the web site**.
I wish to receive my Quarterly Newsletter at my **Home/Work** Address.

Signed: _____

Date Received _____ ***Member Number*** _____