

AUSTRALIAN HYDROGRAPHERS ASSOCIATION

Australasian Hydrographer



Remember when cableways were real cableways!

Source – USGS photo competition.



November, 2009

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EDITORIAL

The AHA is moving into a new long overdue phase in respect to the qualification of hydrographic personnel. For the past 20 or more years the AHA has worked tirelessly to ensure the appropriate learning material is available to support and promote Hydrography as a long term career.

In September the AHA ran it’s first “trial” one week course which covers 30% of the entire Diploma. Please see Paul Langshaw’s report in this newsletter. The course itself was highly successful and the AHA is now working on a schedule of courses to be run Australia wide.

To assist with the delivery of the course the AHA published an Expression of Interest to enable the AHA to setup a register of trainers and training facilities Australia wide. The AHA wishes to thank everyone who submitted a response to the EOI and we’d expect to be in touch as the schedule is developed.

In addition to the face to face training the AHA has also commenced the Australian Certification Register. Each of the students who complete and pass the course automatically obtains certification at entry level. However existing qualified Hydrographic personnel can now apply to be included on the Certification Register. Details on how to apply are included in this newsletter.

As you are all aware the AHA is run on a voluntary basis and can be demanding on your work and social life with committee members having to travel to attend meetings, work on various issues on weekends and evening whilst giving up a lot of their

personal time which can impact on family and friends. As anyone who has served on a committee can testify it is thankless task.

Mic Clayton who has been the Publicity Officer for the AHA for seven plus years has decided to call it a day. The current committee and the AHA membership as a whole wishes to thank Mic for his contribution not only as the Publicity Officer but as a convenor of the 2008 conference, re-design of the AHA web page, and the thankless task of producing the AHA quarterly journal.

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Visit our **Web Site** at: <http://www.aha.net.au> to download a Membership application and to find contact details for your state representative.

Editorial and advertising enquiries should be directed to the Association’s **Publicity Officer**.

Journal editions are generally produced February, May, August and November. Copy is requested to be with the Publicity Officer by the previous month.

e - mail publicist@aha.net.au.

The views expressed in this publication are those of its contributors and do not necessarily represent those of the Australian Hydrographers Association Inc or its office bearers.

The Australian Hydrographers' Association 15th National Hydrographic Conference



Hydrography - Reflection, Refinement, Resurgence

The Australian Hydrographers' Association Conference is a unique opportunity for hydrographers and industry suppliers to network, learn from each other and promote their products to water industry representatives from all over Australia and the Asia Pacific Region.

Reflection - on the past to obtain a clear understanding of where hydrography has come from, to continue improving based on sound knowledge and understanding

Refinement - of the profession in training and adoption of new technologies including acoustics and telecommunications is vastly improving the efficiency of data collection, and presentation - learn about the latest in these and other areas.

Resurgence - in the need for water data due to climate change, environmental compliance, and social pressures - find out how this is affecting the industry today and into the future.

In association with **Platinum Sponsor the Bureau of Meteorology** and Gold Sponsors Kisters, Unidata, Campbell Scientific, Hydrological Services, Underwater Video Systems and Teledyne RD Instruments, all practitioners with an interest in the profession of Hydrography are welcome to attend and the Committee urges each member of the AHA to find the time to come to Perth in October 2010.

Registration forms, Call for Papers and further information will be made available shortly. For more initial information visit the Association website at www.aha.net.au



Education and Training

Hydrography Certificate and Diploma of Water Operations (Hydrography) Information Update

The following article will be distributed to current students in the current OTEN delivered course 3573, Certificate IV in Hydrography. It is reproduced here for the information of all members.

As you may be aware, course 3573, Certificate IV in Hydrography is being phased out and will be unavailable to new enrolments from 2011. The extension of accreditation to course 3573 will allow a phased transition to the new course. The new replacement course – the Diploma in Water Operations (Hydrography) will be offered to new students progressively throughout 2010 as learning materials become available.

To meet the requirements of the endorsed course, we intend to introduce the following units in the first year:

Skills set in Hydrography

RTD3507

Undertake sampling & testing of water

NWP420A

Install, operate & maintain hydrologic instruments & equipment

NWP421A

Collect, measure & process hydrologic stream discharge gauging

These units from NWP07 Water Training Package form the industry endorsed skill set for Assistant Hydrographers. Completion of these units provides credit towards the Diploma in Water Operations

NWP50107 Diploma of Water operations

Core Units

PSPSOHS501A

Participate in the coordination and maintenance of a systematic approach to managing OH&S

NWP505B Implement & monitor environmental management policies, plans, procedures & programs

Electives

NWP504A

Collect & manage hydrological station survey data

NWP508A

Apply principles of hydraulics to pipe & channel flow

NWP509A

Collect, verify and report hydrological time series data

NWP510A

Develop & maintain ratings

NWP525B

Implement & manage asset construction & maintenance

To attain the Diploma, you must complete the Skills Set, as well as two core and five elective units as scheduled above.

Electives will be progressively introduced as the materials become available. It is anticipated that all electives will be become available throughout the first half of 2010.

If you are currently enrolled in the Certificate IV you will have a further three years in which to complete your course. Alternatively, you may opt to transfer to the diploma when it commences. Naturally, if you choose to transfer to the diploma you will be granted as many credits as you are eligible for.

Mapping the credits across has been undertaken and an initial assessment has indicated that some Diploma modules are fully satisfied by existing 3573 Certificate IV subjects, others are only partially satisfied. In these cases, we are looking at ways in which the missing requirements may be addressed.

The following table shows the subjects that have been assessed as providing full credits for units of competencies in the new course. However, other subjects may only provide credit in some of the new competencies. Where this is the case, you will only need to be assessed in the area of the unit not covered.

As is currently the case, you will also be able to obtain recognition on the basis of qualifications obtained in a different course, for example, a trades course or degree. Also, you will be able to submit evidence of satisfactorily completion of the AHA "Hydrography Basics" course to support your credit applications for RTD3507A (Undertake sampling & testing of water), NWP420A (Install, operate & maintain hydrologic instruments and equipment) and NWP421A (Collect, measure & process stream discharge gauging).

Recognition may also be obtained by provision of evidence of you having the knowledge or skills through work experience or a combination of work, life and study experience. We intend to produce a self-assessment guide to help you decide what recognition you may be eligible for. In some cases, you may be asked to sit a test or interview to determine your eligibility. This may be of particular use to you if you have a number of years experience, but no relevant formal qualifications.

In all cases, the onus is on you to provide appropriate evidence. Examples of acceptable evidence are:

- Samples of your work covering the unit of competency elements and performance criteria, certified by an appropriate supervisor. These could take the form of reports where the you were the prime author, completed working documents such as gaugings, water quality sample documentation or instrument calibration documents,
- Certified copies of academic transcripts,
- Completion of a challenge test, either written or oral, conducted by an OTEN teacher / assessor,
- Combinations of any of these.

Further information on the new course will be provided to you as it becomes available.

If you have completed these subjects	You are eligible for	In this subject
8004Y Hydrography B	Full RPL	NWP421A Collect, measure & process hydrologic stream discharge data
8004G Water Industry Basic Instrumentation B and 8004H Water Industry Specialist Instrumentation	Full RPL	NWP420A Install, operate and maintain hydrologic instruments and equipment.
8004Y Hydrography B and 6724J Statistics and Methods of Sampling	Full RPL	NWP510A Develop & maintain ratings
8004L Water Quality Lab & Field Techniques	Full RPL	RTD3507A Undertake sampling & testing of water
2991P OH&S	Full RPL	PSPSOHS501A Participate in the coordination & maintenance of a systematic approach to managing OH&S
2991P OH&S and 8004X Hydrography A And 8004Y Hydrography B	Full RPL	NWP525B Implement & manage asset construction & maintenance.
2991AE Pipe & channel flow	Full RPL	NWP508A Apply principles of hydraulics to pipe & channel flow

Upgrade of the Queensland Hydrographic Support Current Meter Calibration Facility

Presented by Col Farrawell, Michael Price, Queensland Natural Resources & Water. At the 14th Australian Hydrographers Association Conference

Introduction

This paper describes the reasons for the current upgrade of the Hydrographic Support Flume located at the Rocklea Technical Centre in Queensland, and the design and implementation processes that are being applied to the project.

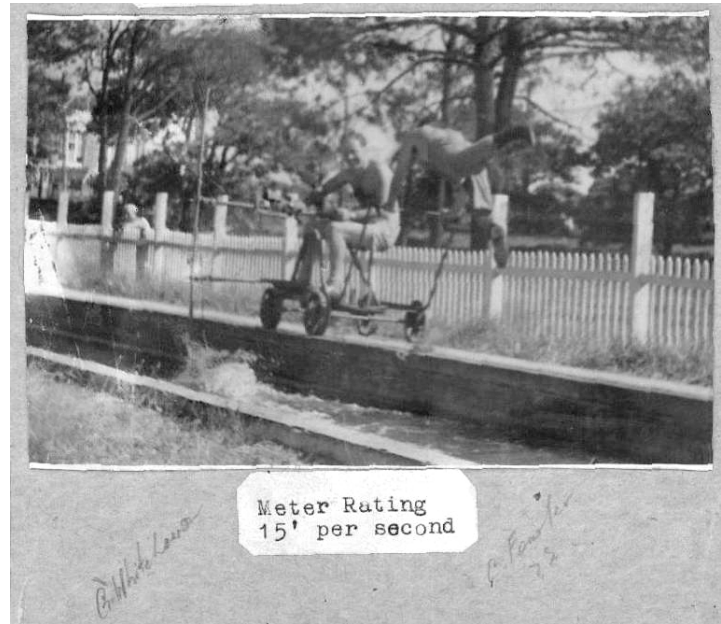
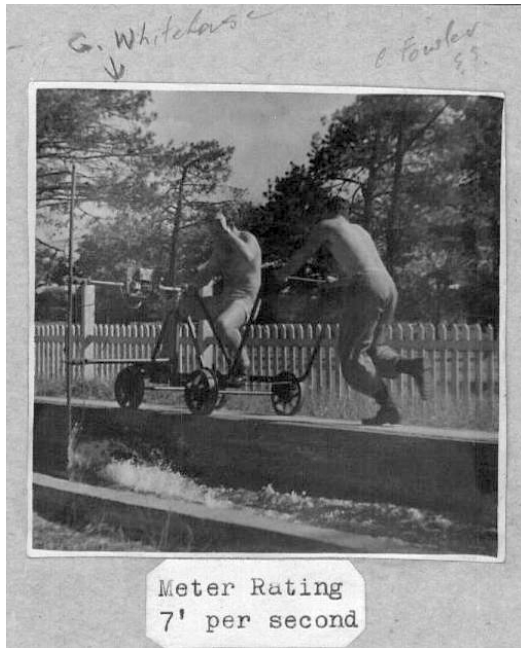
History of the Rocklea Flume.

In the late 1940's the calibration of current meters in Queensland was performed at Enoggera Reservoir utilising a horse drawn boat. NSW had a dedicated calibration flume at the time and QLD was lacking a little in comparison with the NSW facility; although the Queensland methods were less strenuous on the operators.



RATING METERS ENOGGERA RESERVOIR 1949

BOAT DRIVEN BY 1 HORSEPOWER MOTOR IN BACKGROUND



New South Wales Current Meter Rating Facility circa mid 1900's

The Rocklea flume was constructed in the early sixties. It consisted of an open tank of approximately 95m long x 1.5m wide x 2.0m deep, the original trolley was driven by a cable and winch system. The operator manually collected the data by counting the pulses from the current meter and measuring the time period with a stop watch this was achieved whilst riding the trolley. The system remained relatively unchanged until 1980's with only minor technological advances being applied.



Original Rocklea Flume.

In 1984 the facility was upgraded to a semi automated, process controlled system that utilised a variable speed drive and radio telemetry for communication between the control console and the trolley. The data collection and processing was largely computer controlled and shortly after (mid-eighties) the tank was semi-enclosed.



Upgraded Trolley and partially enclosed flume

In 1994, as a preliminary step to gaining Quality Assurance certification, we implemented a calibration system to provide traceability to our facility.

2002 saw our attendance at a Current Meter Calibration Workshop in Christchurch NZ, which was initiated to address industry concerns regarding differences in current meter calibration data.

Although our ratings aligned with outputs from other facilities, the information gained from the workshop highlighted areas where improvements could be made to enhance our calibration process and procedures.

As a result of involvement in the 2002 workshop a submission was presented to our department for the funding of an upgrade to our facility. This was approved but with a limited budget and it had to be developed in parallel with existing projects and obligations.

The new system was fabricated whilst the existing facility was still in service. A failure of the old trolley in 2007 prioritised the completion of the new trolley.

The system, mainly the control circuitry and software are still being developed and refined.



Rating facilities from around the world

Advantages of upgrading the Flume Calibration Facility

Speed Limitations.

The original system's minimum speed was limited to approximately 0.1 m/s. Considering that the low end speed of the calibration is the most erroneous zone, it was very desirable to design the new system to be as stable at as low speed as possible.

Labour intensive and time consuming calibration process.

When I first started rating meters at Rocklea we used to perform between 28 and 36 separate runs of the flume per fan. This coupled with the stilling time between runs and the time consuming reporting process meant that calibrating meters was a costly

and time consuming procedure, which ultimately caused us to cease calibration services for outside agencies.

Resolution

With current technology the resolution of the distance and velocity measurement could be easily increased by a factor of 20 over the old system.

Communication

Radio telemetry was utilised to communicate the control signals and data transfer from the original trolley to the control console and system computer. Although we maintained a licence for our radio frequencies, we constantly received radio interference from other users. This interference would interrupt a calibration which required returning

the trolley to the start and wait for the tank to still out before recommencing.

Mechanical

The design of the original trolley required a manual change of sprockets between the high and low speed runs; this added a substantial amount of time to each calibration. With more than twenty years of wear and tear the old trolley was starting to show its age.

Control and Electrical

The design of the original system required the control software to run on a 386 computer. Keeping the old computer running was starting to become an issue. (Although we had a collection of motherboards, we were down to our last video card). Also the system would only allow one operation at a time, for example if I was rating I could not report on the previous rating or enter details for the next which added more time to the whole process.

The original motor and drive were beginning to lose efficiency and the maximum achievable speed had been gradually reducing. Finally a failure of the trolley drive made it uneconomical to repair.

Overview of the current system and future plans

Fabrication

The selection of the motor and drive unit was quite a lengthy and involved process and included discussions with both the USGS and NIWA who have similar facilities. Ultimately the unit we selected was similar to the USGS setup as it met most of our selection criteria and fell within our budget.

The entire system was designed and fabricated totally in house. The trolley consists of an aluminium channel chassis powered by a Baldor Flux Vector motor and drive assembly through a 10:1 reduction box and includes an integrated electro-mechanical fail-safe brake.



Installing the drive line

Control

Improved range of calibration

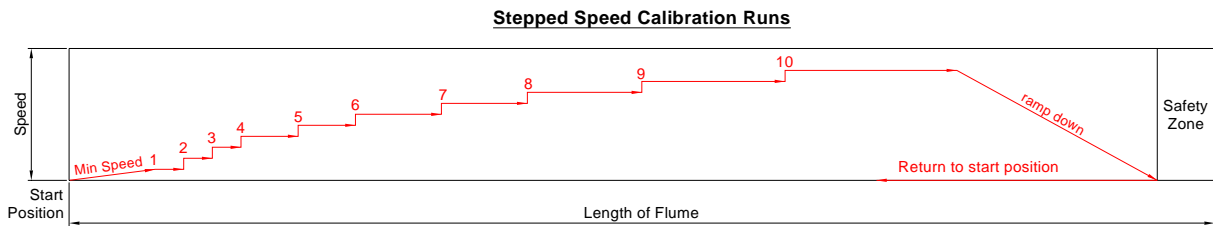
-Utilising the serial input on the new drive we have achieved a stable bottom end speed of 0.01m/s and expect a maximum speed of over 5 m/s.

Increased resolution and accuracy

- Resolution of the distance and velocity measurement of the new system has been increased by a factor of 20 (from approx. 16mm per pulse down to less than 0.8mm)

Stepped speed runs

- For a true and accurate calibration the current meter must be passed through a tank of still water; the disturbance from the calibration and the return of the meter to the start position results in the most time consuming component of a current meter calibration 'Stilling Time' this is the time it takes for the tank to still out before the next run. We have substantially reduced the need for stilling time by performing stepped speed calibration runs. Essentially the current meter is passed through the still tank at a gradually increasing speed until we receive a stable output from the current meter. (Minimum speed response) The meter velocity is then increased to the next pre-determined speed level, when the system records an output from the current meter for this speed it is stepped up to the next pre-determined speed and so on until we either run out of tank or complete the run. Using this method we are able to record multiple speed results in a single run and because the speed is constantly increasing the meter is always ahead of the disturbance in the tank.



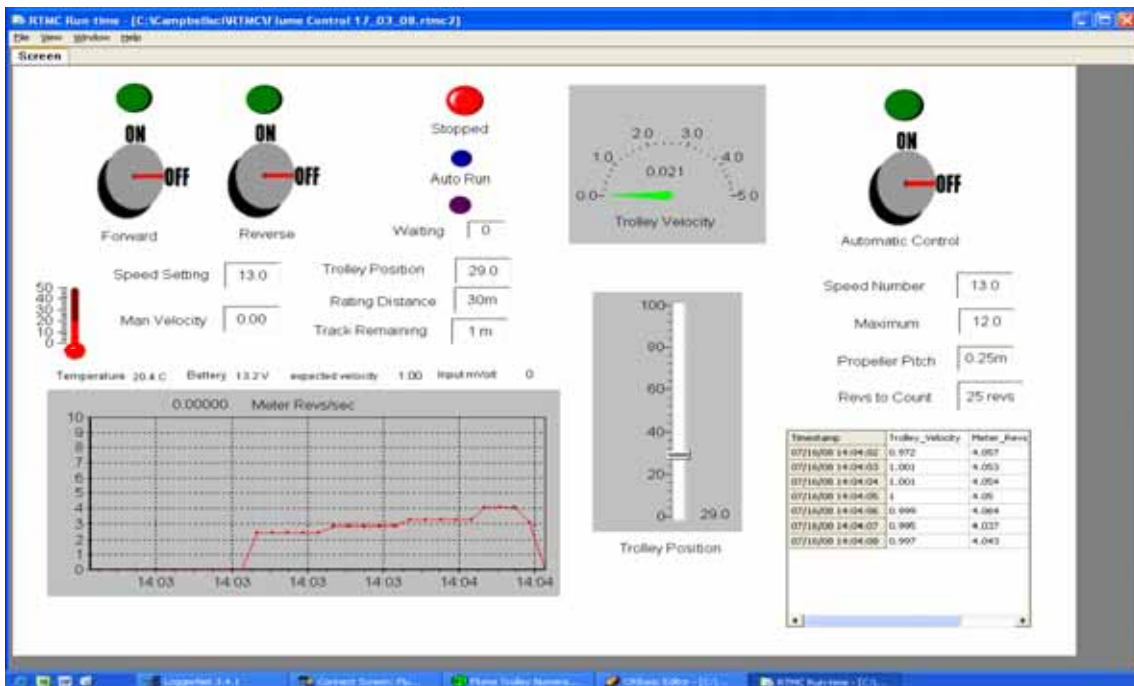
Utilisation of Campbell Scientific CR1000 Data Logger and ancillary components for data collection, telemetry and control.

– The use of the Campbell components as opposed to specialised control equipment has some major advantages for us. Acquiring replacement parts won't be an issue in the future as all the components used are 'off the shelf items'.

The flexibility of the CR1000 will allow us to accept different types of outputs from many different flow

measurement devices, not just the pulsed output of standard current meters.

We are familiar with the programming of Campbell loggers and this affords us the ability to constantly develop and refine the system without the expense or loss of time of engaging outside contractors. The Campbell radios have proven to be extremely reliable and robust.



Screen Shot from the Control Software

Automated calibration and reporting processes

- Our aim is to automate the entire calibration and reporting process freeing the operator for other duties such as preparing next the meters for calibration, performing quality checks and dispatching completed meters.

Planned wave indication device

- As part of the automation process we are planning to develop and install a wave indication device in the tank to monitor water disturbance and to automatically trigger the next calibration run.

Wave control counter measures

- The installation of anti wave cells at each end of the tank and the fitting of Olympic pool style turbulence reducing surface floats will also contribute to reduced stilling times in the tank.

Planned vibration detection on trolley

- The ability to be able to log trolley vibration provides us the opportunity to overlay the vibration trace with the calibration trace to ensure there are no interacting effects.

Trolley

Elevation of current meters for return to start position

- To further reduce water disturbance during the calibration process we are planning to lift the current meters out of the water on the 'return to start' segment of the calibration. This will be achieved by mounting the current meters on vibration isolated pivoting arms powered by electric lineal actuators and being controlled by the CR1000.

Revised trolley dimensions

- The wheel base and mass of the new trolley has been increased to enhance stability to further reduce vibration.

Improved drive specifications

- By using the Baldor Flux Vector motor and drive assembly we can now achieve a greater stable speed range than the old system without the need of a drive ratio change.

The motor and drive has had cooling fans and vents installed to aid in efficiency and stability. The trolley has also been designed in such a way as to allow maximum air flow around the motor.

Enhanced safety features

- We have included an electro-mechanical fail-safe brake and limit switches in the design of the new system and the Baldor controller can be

programmed for rapid ramp down upon power failure before total power loss.



New Trolley Setup

Incorporation of real time video telemetry.

- We have included a real time video system to visually monitor the current meters, it can also be utilised to monitor the display units of instruments that have no separate signal output.



Video Interface

Quality Control

Automated distance calibration circuit

- An independent distance calibration circuit has been included to the system to provide a traceable check against the trolley system.

Traceable current meter input certification

-The current meter input on the trolley can be calibrated with our current meter calibrator (which is also calibrated to a traceable device) therefore verifying results.

Integrated data backup

- The system will be programmed to automatically backup the calibration data and reports to a departmental network drive.

Proposed "As Delivered" calibration

- Due to improved efficiency and time savings of the new system, we think it is now practical to perform an "As Delivered" calibration to all meters.

Conclusion/Summary

The new calibration system will allow increases in efficiency through automation and reduced stilling times. This will be realised through the use of stepped multi-speed runs and meter elevation on returns.

Resolution and accuracy is enhanced through inclusion of an automated distance calibration circuit and high resolution encoders which enable accurate positioning and speed control of the trolley during the calibration.

The use of Campbell Scientific equipment allows demonstrated reliability and flexibility with readily sourced "off the shelf" components.

The automated calibration process will dramatically reduce the rating time of current meters allowing the incorporation of an "As Delivered" rating to the calibration of all meters.

Where Did I Leave My Keys?



In September, financial members will receive an AHA keytag in recognition of their membership of the Association.

The tag is a Key Return Tag, that is, if you lose your keys, the finder can return the keys to the address on the reverse – being the Association's correspondence postal address.

Please note that the tag number is not necessarily (most likely not!) your membership number (this is contained on your membership card). The key tag number issued to you is random, but is recorded in the Association's database, so that if your keys are returned to the Association we can track them back to you, at no charge.

It's Your Website! Visit It!!!



www.aha.net.au



Water: H₂O=Life

*3 December 2009 to 16 May 2010
Temporary Exhibition Gallery*

Experience the power and beauty of one of the world's most precious resources — water. Featuring live animals and interactive displays, Water: H₂O=Life is a thought-provoking, informative and entertaining exhibition for visitors of all ages.

This exciting new exhibition — created by the American Museum of Natural History in New York — is coming to the National Museum of Australia in early December 2009 and will include a component about Australia developed by the National Museum. The exhibition looks at water from both scientific and cultural angles, telling how water functions in the natural world and supports all life, then looks at people's relationship with water right around the globe.

For more information about this soon to open exhibition go to

http://www.nma.gov.au/exhibitions/future_exhibitions/



Australian Government
Bureau of Meteorology



The Bureau of Meteorology – Improving Water Information

The Bureau of Meteorology is Australia's national authority on weather and climate information.

Through the Australian Government's \$450 million Improving Water Information Program, and supported by the *Commonwealth Water Act 2007*, the Bureau is now responsible for providing leadership on water information. Its new role will see the Bureau providing a single, reliable source of water data and knowledge to help the water industry secure the nation's water resources.

Water shortages, climate variability and climate change pose serious threats to Australia's economy and way of life. The Bureau – in cooperation with the water industry – will use state-of-the-art technology to help answer:

- How much water is available in different parts of the country today and how does this compare with the past?
- Who is entitled to use water and how much are they using?

- How much water is being allocated and how is the security of particular water entitlements changing?
- How much water is being traded and to where?
- How much water is the environment getting?
- How much water is being intercepted by farm dams and land management changes?
- How is flood risk changing in response to climatic and land management changes?
- How is the quality of water in rivers and aquifers changing?

The Bureau will also provide insights on the status of Australia's water resources and usage patterns, forecast future water availability, compile and maintain the National Water Account and issue National Water Information Standards. The new program will also enable the Bureau to improve its national flood forecasting and warning services.

www.bom.gov.au/water

AHA Trial Course – ‘Hydrography Basics’ **Course No. 27743**

Paul Langshaw, AHA Training Coordinator

As you would be aware, the AHA has been working with BoM, Government Skills Australia (GSA), TAFE NSW (OTEN) and representatives from the Hydrographic industry Australia-wide to develop a Diploma course specific to Hydrography.

Development of this course is almost complete and OTEN is working to commence offering this course via distance learning in early 2010.

Our industry is long overdue for such a course and with the realisation of fragmented formal training along with alarming skill shortage predictions some urgency was expressed by major employers to deliver at least part of the Diploma course.

In response to this request, the AHA decided to offer a trial five day, “live in” course providing face to face delivery of material based on 3 of the units of competency contained in the Diploma course, these being:

1. Undertake sampling & testing of water
2. Collect, measure & process hydrologic stream discharge gauging data
3. Install, operate & maintain hydrological instruments and equipment

The trial course provided the AHA the opportunity to assess the requirements to run such a live in course and the AHA has now released an Expression of Interest [EOI] to develop a register of National trainers and training facilities. The EOI was formulated on the results of this first trial course.

For the first trial course AHA engaged the services of Hydrological Services (HS), Sydney Water, Hydrometric Consulting Services and YSI Australia to provide professional industry expertise in the delivery of the course material.

The theory and some of the practical sessions were held at the HS premises in Sydney. The remaining practical sessions were held at the Nepean River in western Sydney.

The students that participated in the trial course were from Thiess Services (Victoria), DCCW (NSW Office of Water) and Manly Hydraulics Lab (NSW).

This trial course was pitched at students with less than 2 years experience in Hydrography and whilst the course exposed students to the very latest in technology it also provided theoretical background in areas such as ratings, gauging and survey computation.

As you will note from the attached “schedule” the course provided class room theory which was complemented by field practical sessions.

To satisfy OTEN requirements with respect to course assessment, the students were set written assignments along with practical tasks that were assessed by observation.



Undertaking current meter gauging experience.

Also to satisfy course assessment for accreditation, an OTEN certified trainer was engaged to ensure that trainer delivery, course material and content met the appropriate standard(s).

To obtain a pass in this course, students were required to gain a pass in all three units, i.e. if

a student fails in one of the units they fail the entire course.

On a successful (pass) completion of this course the student applies for Recognition of Prior Learning (RPL) towards the appropriate units of the Diploma.



Students undertake class based learning and assessment

As there are nine units in the Diploma, on successful RPL these students will have completed 30% of the entire Diploma in one week as well as acquiring the knowledge gained from classroom theory presentation and interaction along with practical/hands on tuition, as opposed to the restrictions of distance learning.

Due to the positive response the AHA has received from the students and their employers, the AHA has called for an EOI from organisations willing to participate in the delivery of future courses.



Attacking the mysteries of the dumpy level in basic surveying!

It is envisaged that the AHA will develop a schedule of courses to be staged during 2010

and will advise members of dates/venues via the newsletter.

Due to requests from hydrographic employees a second course will be held in Sydney commencing 30th November 2009.

The cost for the one week course is \$3,200 per student + \$296 OTEN enrolment cost.

The course costs include;

- All meals including the course dinner [5 days]
- Bed & Breakfast
- Twin share accommodation
- Morning and afternoon tea
- Transport to field practical day
- Industry specialist trainers
- OTEN accredited assessor
- Course notes
- Exposure to a full range of instruments and equipment

This course is initially aimed at employees with no more than 2 years experience in Hydrography.



Students for the initial training course

Requests for further information can be directed to me at the contacts below.

Paul Langshaw
AHA National Training Co-ordinator
Email: rainmanwater@optusnet.com.au
Mobile: 0419 266299

Australian Hydrographers' Association Educational Grant

The Committee of the Australian Hydrographers' Association has instituted a number of awards/grants to encourage younger (and not so young) cadets and hydrographers to undertake studies in the Hydrography Certificate IV. This has been implemented since 2006 and the following information is provided about the AHA Educational Grant.

AHA members are also encouraged to make their employers and others aware of this Educational Grant and that the Association wishes to support the development of cadetships and traineeships within the industry, this grant being one aspect of the Associations support.

The following describes the requirements and conditions for the Educational Grant.

PURPOSE

The purpose of the Educational Grant is to:

- promote the principle objective of the Association to further the development of the science of hydrography/field hydrology and its application to the understanding monitoring and management of Australia's water resources, and
- assist students undertaking the Hydrography Certificate IV (accredited under the Australian Qualifications Framework to undertake the final year Project (Subject 8004AA) as required in the course

THE GRANT

The Grant will be of a value of up to \$1000 to assist the students undertaking studies in the Hydrography Certificate IV to purchase material/equipment and services necessary to undertake the Project in the final year of the course.

CONDITIONS

- The recipient will supply an initial abstract paper and a final project paper for publication in the Association's Journal "Australasian Hydrographer", and win advanced consideration for the right to present the Project paper (describing the work undertaken) at the Australian Hydrographers' Association

Conference (at a future date) upon applying for the Conference Educational Travel Grant.

- The recipient will be a financial member of the Australian Hydrographers' Association.
- The recipient will normally be enrolled in the Hydrography Certificate IV (AQF).
- The recipient's project will have been approved by OTEN and/or the recipients employer as an appropriate project activity meeting the requirements of the Project (Subject 8004AA) in the Hydrography Certificate IV.
- Applications will include the approved Project proposal, a budget detailing other sources of financial/material support (for example from the employer/supervisor).
- Application for a Grant does not infer automatic gaining of the grant by the applicant but will be assessed by the Association's Committee who may invite advice from appropriately qualified people. The Committee may liaise with the employer where necessary. More than one grant may be awarded annually, at the Committee's discretion.
- The grant will take the form of a reimbursement to the awarded value, paid to the individual, or may be considered as a rebate to the employer that has initially covered the recipients costs incurred, after presentation of proof of purchase of items/services.
- Items purchased with the Grant will become the property of the recipient's institution/employer or in the case of a stand alone student, the student.
- Proof of purchase of the items/services must be supplied to the Treasurer prior to reimbursement if this grant is awarded.

Further information and application forms can be found on the Associations website at www.aha.net.au

HYDSTRA

WATER RESOURCES MANAGEMENT

WEB PUBLISHING

Many agencies need to publish data from Hydstra onto the web, in order to provide public access to data. Hydstra/Web is subsystem of Hydstra designed to simplify this task.

Hydstra/Web provides you with tools to quickly and easily provide any Hydstra output to web users. The outputs can be simple products like files of raw data, or tables of daily means, or they may be complex products like flow duration plots or flood exceedance statistics.

More details contact: support@kisters.com.au or phone 02 6288 2302



Document Systems Bookshelf - an Electronic Solution

Frank Davies, Department of Water, Western Australia

Presented at the 14th Australian Hydrographers Association Conference, Canberra, 2008

Summary

A good documentation system is critical to the effective functioning of an organisation. It provides a repository for procedures and standards, and a reference source for training.

WA's Department of Water operates a network of over 300 gauging stations with hydrographic staff located in over a dozen separate offices throughout the state. Whether in the office or the field, ensuring that all of these people access the same version of the hydrographic controlled document system presented several logistical issues.

The solution used is the called the Water Information Bookshelf; a collection of Adobe Acrobat portable document files. These are presented via a single interface with individual "books" linked seamlessly by a series of direct and indirect hyperlinks. Updates are managed by transmission over the computer network to each regional office. Field access to the system is provided by configuring laptops to update their Bookshelf copy automatically when networked.

A single master copy of source documents in Word, Excel, etc. is maintained in a restricted area of network storage. This restriction ensures the integrity of the system. When additions or changes are completed they are "published" to Acrobat and integrated into the Bookshelf.

Bookshelf contents include equipment set-up and operation, field work such as surveying, water quality and discharge measurement, data management in the office, such as time series data verification and rating development, and guides for data reporting. In fact, any information that hydrographic staff need to access can potentially be provided.

Environmentally friendly (no hard copies to print or manage) and in a completely indexed electronic format, Bookshelf has now provided over a decade of support to hydrography in the department.

Hydrography in the Department of Water

Western Australia covers a large land mass. In a simple statistic to represent this, it measures approximately 2,400 kilometres from north to south.

The Department of Water operates a network of over 300 gauging stations and employs approximately 40 field hydrographic staff in assessing the state's water resources. These staff are based in a number of regional offices as shown on the following map.

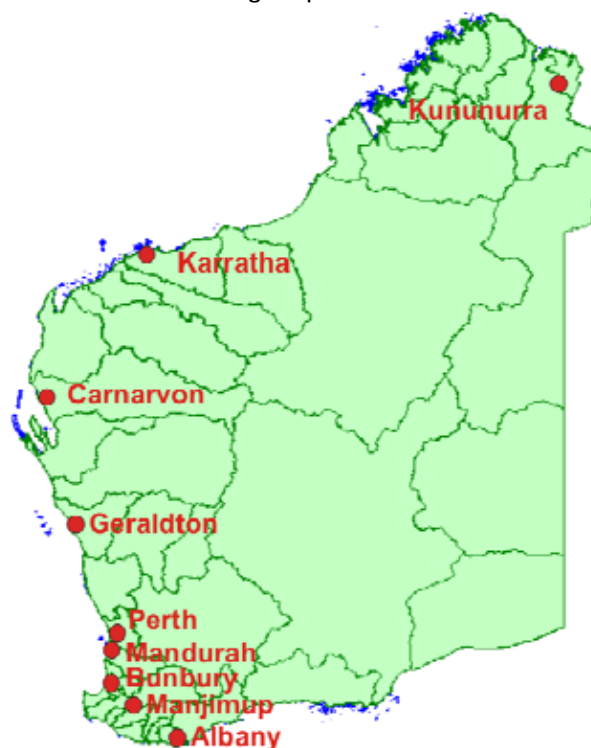


Figure 1 Western Australia River Basins

In Perth, a central support group defines direction for hydrography in the department, fulfilling the functions:

- Management (Principal Hydrographer);
- Asset management;
- Training and standards;
- Equipment (Hydrologic Technology Centre);
- Hydstra support; and
- Separate water quality database (WIN) management support.

The central support group is not autocratic, with decisions made after discussion and agreement via the "Lead Team". This group has

representation from both regional and central staff.

The fact that the department's operations have to cover a large land mass and a variety of climatic conditions has a strong influence on many of the hydrographic practices.

Document System Applications

Documentation systems have a number of applications. These include:

- Standard Operating Procedures, including forms;
- As a reference source;
- Practical guides such as equipment operation, calibration tables, software use;
- Training - development of training material, subsequent reference for trainees; and
- Quality Assurance – formal accreditation

The Department of Water (in its previous governmental form) has considered quality assurance for its hydrographic activities. However, it has never had the need to go down the formal path of accreditation. But if it did, a documentation system would be a fundamental requirement.

A well-developed documentation system forms a cornerstone of an organisation, and hydrography is no exception.

Hard Copy Documentation

Historically, documentation was distributed in hard copy format. In the early 1990s it was obvious that much of the existing documentation required updating and a group of staff was formed to redress the situation.

In 1995, after considerable effort to revise a series of key components, an attempt was made to implement a formal hard copy controlled document system. This was a logistical nightmare. It was a full-time job managing the process that tracked people, documents and updates.

Who needs the document?

How is the copy sent?

How to ensure they receive it?

How to ensure updates are inserted?

What happens if someone leaves?

A better solution was needed.

The Electronic Solution: "Bookshelf"

The Evolution of Bookshelf

At the same time as experimenting with hard copy controlled documents, the department was also developing its hydrographic training program. This resulted in the purchase of a software product called TRACCESS to manage the process. TRACCESS was (and still is) software to manage self-paced, competency-based learning programs. It revolved around a database that tracked each trainee's progress through sets of learning modules. The other key requirement was access to reference material, preferably on line. That way the learning database could link directly to the reference material.

Although it was ultimately decided not to continue with the software, the on-line reference material, the **Water Information Bookshelf**, or colloquially just "Bookshelf", was the progeny of this system.

It should be stated that the Bookshelf concept was provided by the vendors of TRACCESS. In developing the content, a contract with them included preparation of the material by technical authors as well as the medium for presenting it. However, the department lays a direct claim to the content.

What is Bookshelf?

The majority of Bookshelf is composed of a series of Adobe Acrobat portable document files (PDF) "printed" from source WORD documents. Whereas with a hard copy document system a single topic would be distributed as a physical book, in Bookshelf each is published to a separate PDF file. The principle secret to its operation is a diagrammatic interface which presents a hyperlink to each PDF "book" title, the same as selecting a book from a shelf in a library. A mouse click on the link opens the book for reading in Adobe Reader.

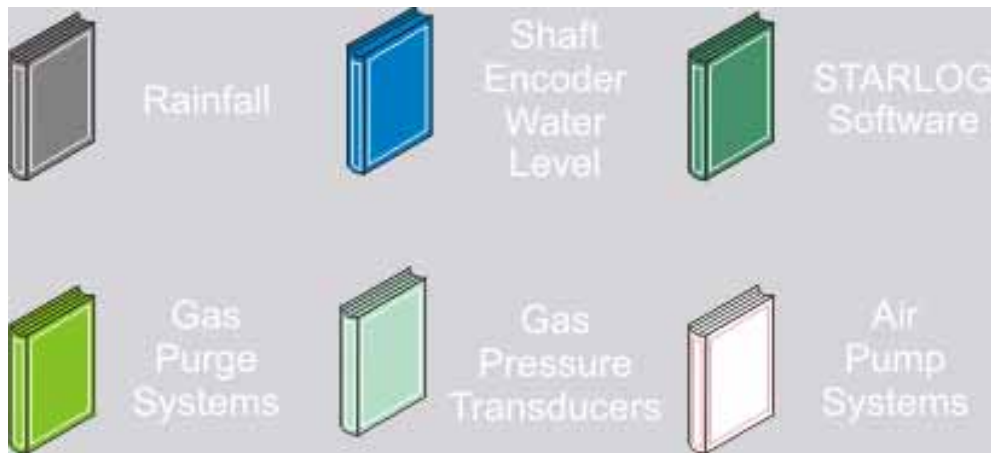


Figure 2 Bookshelf Extract

Adobe Reader is a commonly used application, but it is worth while pointing out some of the immediate benefits of an electronic document over hard copy:

- word and phrase searching;
- Table of Contents links;
- bookmark and thumbnail locating;
- zoom / scaling of diagrams;
- internal cross linking of reference material (which also avoids duplication); and
- linking to external reference sources.

The Structure of Bookshelf

The series of books are arranged in categories to assist readers locate the information they require and to allow for their physical presentation on-screen. These categories appear as “tabs” on the navigation screen.

The navigation screen is created from a multi-page drawing prepared in Corel Draw, but an earlier version worked quite satisfactorily using MS Office PowerPoint as the drawing tool. The set of navigation pages are also printed to PDF format and each page links to the others via the tabs.

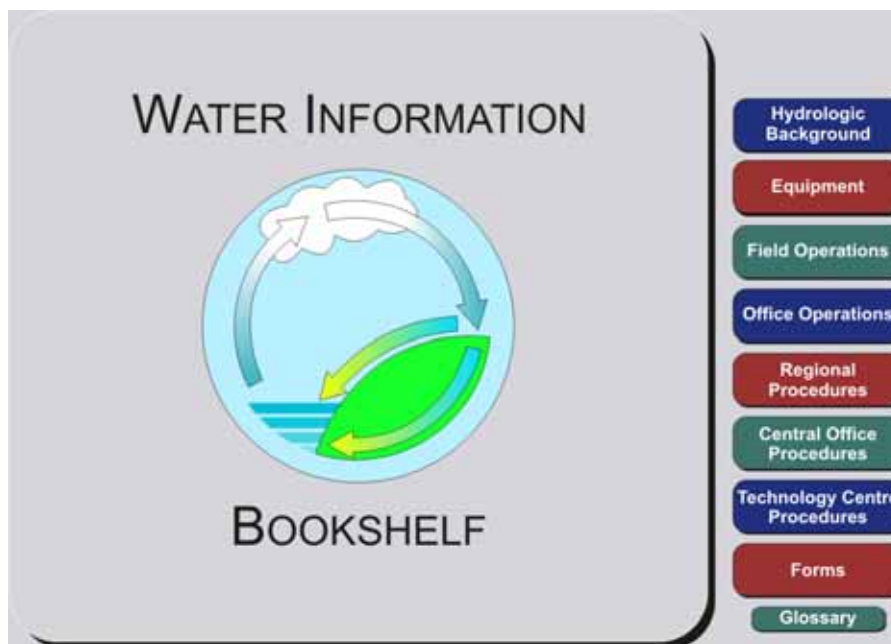


Figure 3 Bookshelf Opening Page

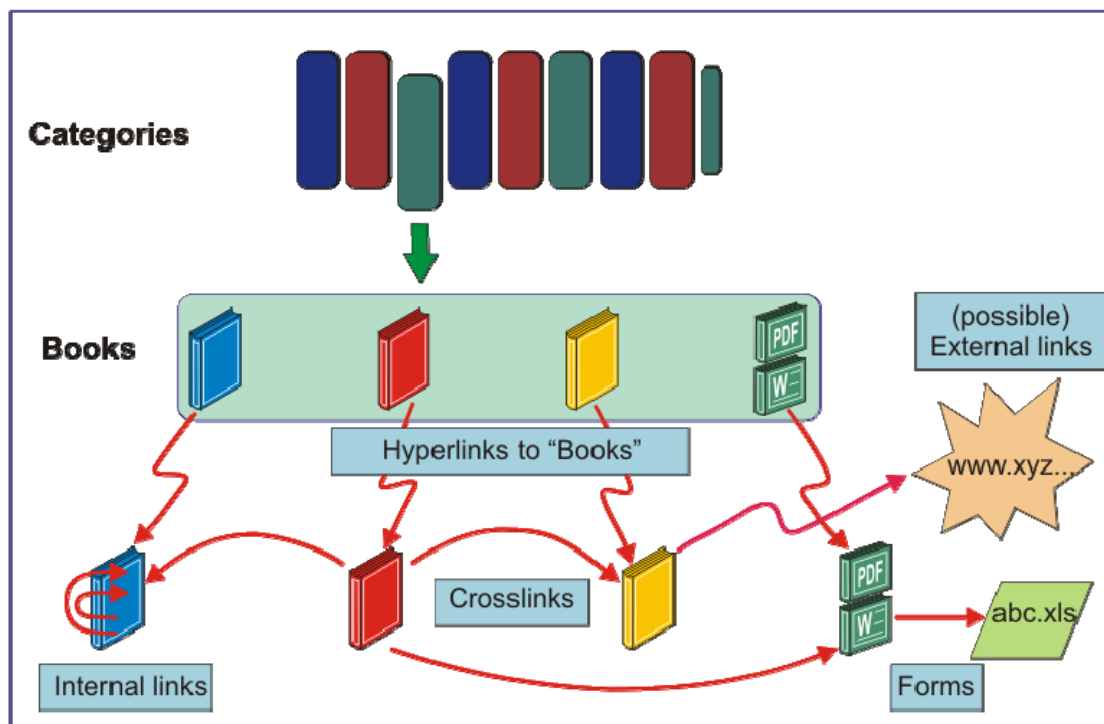


Figure 4 Bookshelf Linkage

Document Template

Consistency of presentation is a key feature of the documentation.

Applying the same template for all documents is one of the little things about Bookshelf that add up to a lot when the system is viewed as a whole.

Some features of this template are:

- font styles;
- document revision tracking, including a Revision Status Details table;
- use of the same “warning” symbol for important points, especially OSH;
- alternate header / footer - to facilitate printing in a book style copy, although this is discouraged; and
- section structure.

Most documents are prepared using an A5 page size. On screen, the text of an A5 page can be read without the need to zoom in. A4 requires a zoom operation. Certainly, when Bookshelf was first released in 1997 screen technology, especially for field use, was not good. So, simple concepts were adopted; the “lowest common denominator” principle.

Technical Writing Skills

Typical of the multi-skilling aspects of hydrography as a career, staff (the authors and editors) had to acquire a reasonable level of technical writing ability. In the development stages guidance was provided by the TRACCESS software vendors who had expertise in this area.

Populating Bookshelf

Historical Effort

The complete electronic version of Bookshelf did not appear over night, and it is still evolving. In its early days, content was minimal. It was more a case of attaining “critical mass” so that readers respected it as a reference source.

Figure 5 Bookshelf Content indicates that after five years of development over 2000 pages of information had been provided. This in itself does have much meaning, but it is estimated that this addressed about 80% of day-to-day requirements of its users.

How much effort did this require? This is a difficult question to answer.

Firstly, the project had the benefit of a comprehensive set of historic documents; it was not a case of starting from scratch. Some of these historic documents were in electronic

(WORD) format, whilst others had to be scanned using optical character recognition. And then these required a significant effort to convert and reformat them into current software versions. Most also had many diagrams and pictures that needed preparation. At the same time there were parallel efforts occurring to develop training material, which considerably overlapped the documentation.

During this time three people and some contract staff were employed in various capacities of document preparation. Document preparation is really a simplification of the task, since much of the work was actually defining and updating the many operating procedures and standards.

Keeping up with Technology

Presently, changes in equipment (loggers, pressure transducers, etc.) and software (Hydstra) occupy a major proportion of the effort maintaining the system's content.

It is undesirable to have content which has aged since this has the effect of downgrading the product.

Publishing Format

Why Adobe Acrobat PDF?

The reference material was required to be available in the field. Because the field computing platform has historically been very basic, both in:

- hardware – minimal processing power and hard disk capacity; and
- software – the department's information technology section is reluctant to licence additional copies of software if it is not essential.

... Adobe's PDF resolved this limitation.

These hardware and software limitations are now dissipating, with recent purchases of Panasonic Toughbooks loaded with the MS Office software suite.

What Does PDF Offer?

- **A well-established publishing standard**

PDF is an accepted industry "standard". It has proved itself to be a truly portable format over an extended period of time.

- **Free reader**

PDF reader is free and forms part of the "standard image" loaded onto all departmental computers.

- **Compact file size**

Images (especially) are resampled during PDF conversion to optimise file size.

- **Presentation**

When publishing from WORD to PDF, the same image is reproduced exactly (not reformatted in any way). Diagrams can be scaled up during viewing to achieve greater detail, and a lot of hydrography requires this option.

- **Security options**

At times staff require document text and graphics for alternate purposes. PDF allows a copy and paste action, although the result is not formatted. Although various PDF security levels can be implemented to control this, there has been no need to do so.

- **Index / search**

The entire Bookshelf content is indexed and the index forms part of the published system. If readers cannot recall where the answer is written they can simply use the index to search for a word or phrase.

Other Publishing Format Options

It is recognised that PDF is not the only publishing format. There are many arguments that compare HTML versus PDF, with the discussion bending both ways. It could be suggested that individuals will have their own biased preferences, although there is good logic behind either.

Bookshelf has been developed in PDF, and it has been a successful, efficient system for some time. That alone is sufficient to have no desire to explore these other options. Indeed, the major effort is in preparing and maintaining the source material rather than tinkering with the delivery. However, that is not to say that an alternative solution may provide a better result.

Bookshelf Management

Hard copy document management was complex. However, electronic documentation also requires some strict disciplines.

Source Document Control

Whilst the front-end delivery Bookshelf is very user-friendly, a strict controlled document system is applied behind the scenes to control the source information.

The majority of Bookshelf source documentation is developed in WORD, although components use software from the remainder of the MS Office suite, and Corel Draw and Photo Paint are used where appropriate. Master copies of this source content are kept in a secure area of network storage using folder permissions. Only Bookshelf managers can access this.

When an author / technical expert is to update their book, a working copy is extracted from the secure area and issued to them, with a record kept that they are working on it.

It would be undesirable to have multiple copies of the source document in existence.

Separate Diagrams

Most documents include pictures – either digital images or drawn diagrams. These images are linked rather than embedded to control file size in WORD. Over Bookshelf's existence there have been many issues with the WORD file size, despite investing in additional RAM for PCs. Linking images tends to help this problem. The separate images have more integrity and are also useful for inclusion in other material, such as training and public displays.

Preparation for Publishing

Final document preparation usually involves several author / editor reviews. Consistency of writing style and format represents a further level of effort.

Word is published direct to PDF. Adobe supply a macro which automatically establishes links for the table of contents in the resulting PDF file.

With a bit more effort, internal document links could also be completed in this step. However, the internal and cross links are currently managed manually.

After an off-line Bookshelf copy is updated with the new information and the Bookshelf index updated, the updates are copied to the central system in Perth before copies on other servers are also updated. An email is then sent to a contact list notifying readers of the change.

Bookshelf Distribution

Production Copy in PDF

Apart from some standard forms and a few reference tables, all Bookshelf content is in PDF format. PDF effectively means read-only, and certainly ensures version control.

Distribution of Content / Performance

- **Regional office**

Each regional office has a server resource with its own unique copy of the entire Bookshelf. Thus, readers in remote offices access material from a local server rather than from a central copy. This eliminates any file transfer (bandwidth) issues.

- **Field PC**

All hydrographic field PCs have a copy of Bookshelf. These are frequently connected to the WAN network for data transfer. Each time this occurs, Bookshelf content is checked by an automatic facility for currency, and then updated if necessary.

Supporting Procedures

Changes to standards and procedures are continually evolving. The process to change a document in Bookshelf needs careful consideration and a fair degree of technical effort. This is often managed by shorter-term communications to provide an interim solution. Memos, a regular newsletter, or direct email is used to achieve this.

Document Coordination Role

A document coordinator manages Bookshelf source material, including negotiation with technical experts, PDF preparation and system integrity, and information distribution. The coordinator is also responsible for the memo and newsletter communications.

Memos

Urgent, "must do", procedural changes are distributed via a memo system. These advise of aspects such as equipment faults and repairs, safety issues, and procedural changes. In most cases the memos have a direct impact on Bookshelf content and are therefore flagged for subsequent consideration.

Newsletter

Longer term, evolutionary changes are often presented in a quarterly newsletter. This creates the opportunity for discussion and development of a subject before it is formally adopted.

Email

Email transmission is uncontrolled. Unfortunately, it is common that this is frequently

used to bypass the formal communication systems when the content may be critical.

Ideally, email composers should consider the impacts of what they write on Bookshelf content.

2500 pages (mostly A5);

- 46 "books";
- 25 forms; and
- 70 Mb of disk storage.

Page number and disk storage content history are shown in the following graphs.

Bookshelf Statistics

The present content of published (PDF) Bookshelf material is represented by:

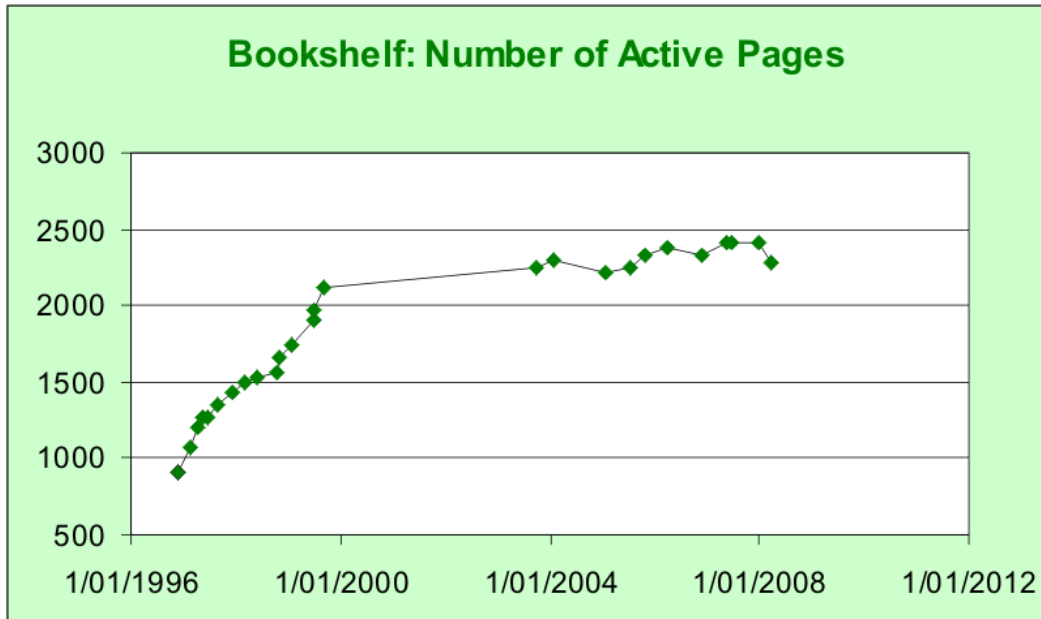


Figure 5 Bookshelf Content

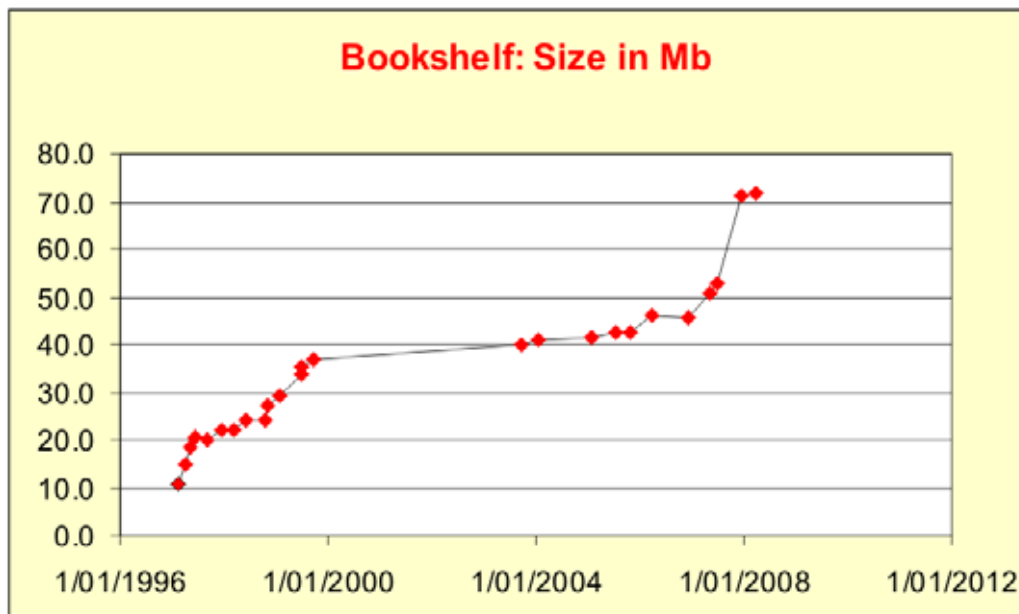


Figure 6 Bookshelf Size

Graph comments:

- 1996 – 2000: intensive development phase;
- 2000 – 2004: document coordinator role inactive;
- 2008: drop in page numbers after content updated and rationalised; and
- 2008: sharp rise in file size with use of scanned external document rather than direct WORD to PDF creation.

Bookshelf – The Issues

• Software skills

Management of the system requires a number of technical skills to be maintained:

- WORD – templates, image links;
- MS Office in general;
- Corel Draw and Photo Paint (image preparation and management);
- Adobe; and
- Technical awareness – network architecture, server names, folder security.

• Strict content administration

Bookshelf requires the attention of a strict disciplinary (the Document Coordinator) to control content.

• Authors / technical expert

- Identifying an appropriate author / technical expert for a given subject is often difficult;
- Equally, it is hard to maintain a current author for updates. Employees are regularly moving on; and
- Authors require a reasonable level of technical writing skills.

This issue is not unique to Bookshelf and applies equally to hard copy.

• Reading on-line

Users are reticent to do this and tend to print hard copies. It could be argued that this is just a legacy issue and it is gradually disappearing as people spend more time reading on-line as well as appreciating the flexibility of electronic media.

• Feedback is rare

Again, this problem also exists with hard copy. At least with electronic media readers have

some capacity to extract material to provide context for possible improvements.

• Copyright

With the use of electronic media it is very easy to plagiarise. Bookshelf authors have to be vigilant that they do not abuse copyright and the department is also protective of use of Bookshelf content by commercial organisations.

Bookshelf – The Strengths

• Branding

All Bookshelf and related content is clearly identified with consistent branding. Features of the branding are:

- the same document template use in Bookshelf content; and
- the hydrologic cycle logo (shown below).



Figure 7 Documentation Logo

The logo is also used for formal memos and the regular newsletter to identify them as being related to Bookshelf content.

• Updating is expedient

The PDF publishing format facilitates corrections and updates, compared to hard copy.

• Every user accesses the same information

Since the PDF files are distributed to the entire network in a single pass, there is little possibility for confusion with version or release numbers that hard copy causes. The only problem that may occur is that field computers are not regularly networked to receive the latest update.

• System portability

The complete system can be simply copied to different computing mediums be they stand-alone PCs, network servers, or portable memory.

It is very compact (which was a big issue in earlier times with limited disk space for field computers) which facilitates updating.

- **Environmentally friendly**

All delivery is electronic, so there is no immediate requirement for paper copies.

- **Electronic media flexibility**

Electronic media has many advantages over hard copy, as mentioned in the sections What is Bookshelf? and

Publishing **Format.**

- **One-stop reference source**

All documentation is contained within a single source.

- **Potential for expansion**

The Bookshelf structure can be easily adapted to include additional related information sources.

Bookshelf Philosophy

The credibility of a document system must be built up over time. The Water Information Bookshelf is in a fortunate stage of its existence where this credibility is now well established.

“It needs to be sold”

People are basically lazy. To obtain an answer to a problem most will ring or ask somebody rather than research the answer themselves.

To overcome this, the philosophy is to refer them to Bookshelf. Any question to central support staff must rely on Bookshelf content. This is where the department “hangs its hat”. User replies include a reference to a section from Bookshelf, with the knowledge that they are reading the same material.

The corollary to this is that the document system must be effective in solving user’s requirements.

“If it isn’t in Bookshelf ...”

Bookshelf includes a mechanism for users to report errors, improvements or deficiencies in the content. Although this is not well utilised, the option is provided and it places the onus on the users to take the first step.

Keep it simple

The concept of Bookshelf is not complex. In fact, it is very simple, and that is possibly why the system has been the success it has.

AHA National Hydrography Certification Scheme

The Australian Hydrographers Association (AHA) has initiated and will maintain a national register of practicing hydrographers.

This is seen as the first step to implement a process of National Certification of Hydrographers.

Certification is an industry owned and managed recognition scheme. Recognition of skills and experience of personnel is essential for industry to adequately and accurately measure the water resources of Australia. It will also help to manage our water resources in a more efficient manner in a time of national water shortages.

Each level of National Certification indicates:

1. An amount of relevant industry experience
2. A nationally recognised set of skills that are considered the minimum required for working in the Hydrographic occupation.

3. Recognition of prior learning (i.e. tertiary qualifications and relevant experience)

4. A requirement and willingness to commit to retaining and further developing skills and knowledge to maintain a standard of currency

A National Certification Scheme will ensure recognition of training to the highest level. Under this scheme, ongoing training courses and programs will be available to provide professional development to the hydrographer.

What is Certification?

Certification identifies the minimum skills and knowledge for hydrographers so they can perform their job to the satisfaction of all stakeholders that may use water resource data, including state and federal agencies, private sector and clients.

It also provides clients and end users with traceability to assist in judgement on the confidence levels of data.

Certification works regardless of regions, states, public or private sector, urban or rural applications.

Certification is a tool to keep “cowboys” out and is the best opportunity to take our industry forward to a more sustainable future.

Certification is often confused with qualifications, accreditation and licensing. The following table will assist you to understand these different yet related concepts.

Type of credential	Recipient	Credentialing body	Mandatory or voluntary	Example	Lifespan	Consumer protection
Licensing	individual	political body	mandatory	driver's licence	periodic renewal	can be withdrawn
Accreditation	programs/organisations	association/agency	voluntary	Quality Assurance programs	Periodical renewals	Regular audits/can be withdrawn
Certification	Individuals	Association/ Agency (eg AHA)	voluntary	National Certification	Periodic renewal	Ongoing skilling/can be withdrawn
Qualification	Individual	Training group	voluntary	Diploma/Cert	No renewal	None

Benefits of Certification

Certification provides a system for those hydrographers and their employers that are committed to best practice and professionalism to be recognised by the industry.

The ability to use certification to identify and recognise skilled and committed hydrographers will benefit:

- *Certified individuals* – expressing their commitment to excellence by participating in a process to assess and update their knowledge. They can be confident they are doing the job right which may lead to advancement and recognition within the industry. All certified hydrographers will be listed on the AHA database.
- *Employers* – knowing that staff members that are certified have the appropriate underpinning skills and knowledge for their position and are committed to excellence in their role.
- *Job seekers* – certification can provide young people and other job seekers with a defined career pathway
- *Private industry employers* – by insisting on using certified personnel they are practicing sound risk management.
- *The Hydrographic industry* – can grow more professional as a result of gaining, maintaining, recognising and documenting skills of hydrographers. As more and more people become certified the level of professionalism in the Hydrographic industry will continue to improve.

How will it work?

It may be considered viable that organisations make application on behalf of its employees. If this is the case each applicant would still be assessed on an individual basis and be required to provide substantive documents re experience, training and education achievements.

Where the AHA considers it is unable, for what ever reasons, to provide an appropriate decision on submitted statements of qualification and experience AHA will engage the services of a third party such as a registered RTO to provide an objective determination.

Levels of National Certification and Definition

Cadet Certification

- This level is made up of trainee and/or assistant hydrographers such as new employees to the Hydrographic industry eg school leavers or employees/students from other disciplines with minimum or no experience in hydrography.

Minimum qualification:

RPL from other discipline or Skills Set from Cert IV or enrolment in same.

Senior Hydrographer Certification

- This level is made up of employees with completed qualifications at Diploma level or equivalent in hydrography and appropriate type and length of experience specific to hydrography (assessed by AHA).

Minimum qualification:

Diploma or Cert IV (full course) in hydrography with a minimum 5 years experience specific to hydrography.

Principle Hydrographer Certification

- This level is made up of employees that have qualification to Diploma and Advanced Diploma or Graduate Certificate in hydrography (when available) or a degree from an associated discipline with a minimum of 5 years experience specifically in hydrography.

Minimum qualifications:

RPL from associated degree or Dip (or Cert IV) plus Advanced Dip or Grad Cert in hydrography plus minimum 5 years experience.

Hydrographer Certification

- This level is made up of employees with more than 5 years experience with no tertiary qualification in hydrography (may have tertiary qualification in other disciplines).

Note: *This category will have a sunset recognition date of 2 years after initial application.*

It is expected that by this time hydrographers should have at least completed the Skill Set from the Diploma in hydrography.

It should be noted that the minimum qualification of Skill Set can be gained through the RPL process which would be carried out through an RTO.

Application Process for National Certification

Step 1. Documentation of current position and employer:

The process begins when AHA receives an application for National Certification.

Then assessing substantive documentation provided by applicant so as to determine the appropriate category of certification for each applicant.

The applicant is requested to provide details of current employment to initiate the assessment process (i.e. position descriptions etc).

Step 2. Documentation of industry experience:

The applicant is requested to document years of relevant experience in the Hydrographic industry with a brief description of work practices carried out (i.e. open channel, closed pipe, groundwater, atmospheric measurement etc.).

This experience statement will be randomly verified by the AHA over time.

The application form for National Certification will be located in "downloads" on the AHA website.

Step 3. Documentation of skills from a training provider.

Where documentation of qualification is not able to be produced or AHA cannot make a determination, a third party assessment by NSW TAFE (OTEN), as a registered RTO will be engaged by AHA.

RTO's are the only organisations that can assess, verify and issue "Statements of Attainment" that show an applicant has met the skills requirements for National Certification.

Cost for the RTO assessment service is included in the "Initial Certification" cost.

To help deliver certification and to strengthen the alliance, AHA has entered into a MOU with NSW TAFE (OTEN).

Step 4. Application for National Certification

Once the applicant has submitted their documentation to the AHA along with the application form and the "one off" certification fee of \$400.

Only applications from current/financial AHA members will be accepted.

Subject to AHA assessment, the application will be approved or recommended for assessment by the RTO.

Step 5. Awarding National Certification

When all of the above documents are supplied, and the applicant's experience and qualifications are validated, Certification is awarded.

The Nationally Certified Hydrographer receives documentation stating the level and currency dates of their Certification. This information will be entered on the AHA National Register of Certified Hydrographers.

Step 6. Renewal of National Certification

To ensure that Nationally Certified Hydrographers keep their skills up-to-date there is a process to renew Certification at regular intervals

Nationally Certified Hydrographers will need to show that they have remained active in the industry and have taken steps to keep up-to-date with new technology and information.

A mandatory number of 20 points must be verified on application for renewal of National Certification.

AHA will provide currently certified hydrographers with guidelines of a points system to assess renewal eligibility. A list of examples how to gain these points is set out in a following section.

Estimated Costing:

The costing for this process is being finalised and more information will follow shortly.

PROCESS of Continuing Professional Development

By requiring a regular re-certification process AHA is ensuring that certified personnel remain active in the industry and are keeping their knowledge and skills up-to-date. People who demonstrate this by earning the required CPD points in the required timeframe will maintain their active status. Those failing to earn the required CPD points will be considered "Inactive".

CPD will be assessed and certification renewed at a defined interval.

AHA will conduct random audits of at least 5% of all CPD returns each year.

CPD requirements for certification (see below)

- Remain active in industry in area related to certification in hydrography.
 - Require evidence for 20 points each year.
 - Pay the renewal fee
 - Remain a financial member of the AHA (\$100/annum at 2009/2010)
-

ACTIVITY	DESCRIPTION	POINTS and EVIDENCE
Attend a short course, seminar or in-house training deemed relevant to hydrography (assessed by AHA)	These include courses, short courses, or seminars, which might be held in conjunction with trade shows or field days. The AHA, professional associations or societies, universities, colleges or technical institutes, manufacturers or distributors or part of an in-house training program, may conduct these courses.	3 points per day attendance 5 points for 2 days Provide a certificate of attendance or other evidence of involvement / attendance
Attend a formal course in hydrography conducted by a college, university or technical institute	Course work must be offered by an accredited institution and be hydrography related and/or applicable to the job description.	10 points for achievement of each unit of competency (Statement of Attainment), Provide a transcript for evidence
Attend a hydrography conference, trade show or field day with published agenda	The AHA, professional associations or societies, universities, colleges or technical institutes, manufacturers or distributors or part of an in-house training program, may sponsor these events.	3 points per day attendance 10 points for 3 days
Membership of the AHA	Current financial membership of the AHA	5 points for each year of the preceding 2 to a max of 10 points
Exceptional activities	Activities that do not fall into any of the previous categories may be submitted for the management committee for review. The AHA will assess these activities for relevance. Activities might include overseas study tour or industry leadership activities.	Points to be assessed and awarded by AHA to a maximum of 10 points.
Teach or present a paper at a short course, seminar, technical conference, or in-house training class relevant to hydrography.	Prepare and deliver new material for a paper, publication or training course. Only the initial submission will be allowed when presenting a paper repeatedly. The AHA will assess these activities for relevance.	Points to be assessed and awarded by AHA to a maximum of 10 points.
Inactive status	<p>Renewals will be due by 1st July each year. If no renewal is received by the following December the certification status of that hydrographer will be considered "Inactive" until this is rectified.</p> <p>An "Inactive" Certification status prevents the hydrographer from practicing as a "Nationally Certified Hydrographer" until they renew their certification. If the inactive period is less than one year, renewal can be made by paying all renewal fees and submitting sufficient CPD points to cover the inactive period. If the inactive period is for more than one year, the certification is forfeited and re-certification will require the applicant to start the certification process over from the beginning.</p>	



Australian Hydrographers Association Photographic Competition.

Australian Hydrographers cover every nook and cranny of Australia in their day to day work as hydrographers. Many images have been recorded over time by hydrographers in their working travels of where they work and what they do.

Over the next few months the AHA will be running the Australian Hydrographers Association Photo competition. With a prize of a **complimentary registration**^[1] for the 15th Australian Hydrographers' Association Conference in Perth, 2010, what could be more encouragement to participate!

Entry guidelines and conditions for the competition:

- The submitted image should pertain to a hydrographic/hydrologic theme and/or be related to work that AHA members or other hydrographers are involved in.
- All images must be submitted in digital format, in either JPEG format or TIF format. Images may be in colour or black & white and should accurately represent conditions at the time the images were captured; do not edit or alter content. Images may be from a digital camera or may be scanned from traditional print, slide, or negative media. For best results, use the highest quality your digital camera supports. Use the highest density when scanning images
- Submitted images are to be the photographers own work.
- Where an image has been taken while involved in the activities for an employer, it is the responsibility of the entrant to ensure that there are no copyright restrictions on the use of the image by the employer or seek appropriate permissions to release its copyright to the public domain. The AHA assumes that entry of an image in the competition has met this criteria and will not
- Where an image is submitted containing identifiable persons other than the photographer, it is assumed that the submitting photographer has sought and received permission from the subject to use the photo, containing their image, in this competition. The entrant will provide a statement to this effect with the image to the Judging Panel
- Images submitted and accepted for the competition are submitted on the understanding that the image enters the public domain for copyright purposes at that point in time and is available for unrestricted use by the AHA in (but not limited to) promotional material, publications, website etc. Where used in AHA publications every effort will be made to acknowledge the photographer where appropriate. The AHA will not monitor or enforce the image's acknowledgements outside AHA use once in the public domain.

The judging committee reserves the right to reject an image from entry in the competition considered to contain unsuitable or inappropriate content. Entry forms and these conditions are available on the AHA website – www.aha.net.au.

^[1] The prize is a full 2010 Conference registration fee only (1 Only). Travel, accommodation and ancillary costs are the responsibility of the prize winner. The prize may be transferred to another person if required but only after written application to the Conference Committee for Perth 2010.

What Difference a Dry Season Makes! - *Mic Clayton*

While travelling in the Burdekin Catchment in October I made a point of photographing as many gauging stations as I could – much to the

annoyance of the wife and kids.

The May Journal contained a report on some wet season gauging on the Burdekin, near Ayr, as well as the following photograph of the river in action at where some of the lads were gauging!



Below is a photo I took of the same bit of river taken on the October sojourn. While not from the same angle it shows the exposed bridge piers and the exposed sandy river bed –

reminded me a bit of some of the New Zealand Rivers I have seen in my travels – except they didn't have the heat to go with them!



While continuing on my travels in neighbouring catchments I also chanced upon what appeared to be gauging stations under construction. While some responses to my

enquiries have intimated that it was a BoM flood warning site, "having a sleep", I am fairly sure it was one under construction



Looking suspiciously like the makings of a gauging station!



As described – a gauging station "having a sleep!"