



## *Australasian Hydrographer*

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### 2002 DEADLINES

For your information, and particularly for our Corporate Members' Advertisements, following are the dates I would like to have copy in my hands (or on my computer!)

ISSUE	DATE
January (M)	25/01/02
February (Q)	09/02/02
March (M)	23/03/02
April (M)	19/04/02
May (Q)	17/05/02
June (M)	21/06/02
July (M)	19/07/02
August (Q)	16/08/02
September (M)	20/09/02
October (M)	18/10/02
November (Q)	15/11/02
December (M)	20/12/02

## Welcome to the December Newsletter

Hello once again, and welcome to our December Newsletter.

With the late-ness of this Newsletter, Christmas and New Year have come and gone. I must be getting old..the time flies so quickly these days, and in a sort of holiday haze I can't even keep track of which day it is. Anyway, I hope the season was kind to you, and that you are refreshed to continue life's battles.

The holiday season has meant that I wasn't able to get a response from our 20 Questions contributor. Not to worry, Frank Davies from WA Water and Rivers Commission came to our rescue with contributions from their internal newsletter. Just what the doctor ordered. Thanks again Frank.

Our Conference Committee is still working feverishly on details for the upcoming event. With this Newsletter is a copy of a letter of invitation to attend the Conference. Feel free to copy it and send it on to whomever you deem appropriate. As you will appreciate, organizing these Conferences takes an enormous amount of work, and these guys are doing it for nix. I'm sure you will join me in thanking them for their efforts.

Also with this Newsletter is a copy of a Membership Form. Yes, it's that time of year again. Our Financial Year is the Calendar Year. As we explained previously, the Subs have increased because we have a full year available to us this year, rather than a partial year after our "resurrection" last year. The Subs are for Retired/Cadet/Student \$50, Members \$100, and Corporate \$500.

I have some back issues of last year's Newsletters. The monthly issues are all available on the web site if you want to get them yourself. I can post the quarterly if you require.

Until next month then...

Les Marshall

### Our Corporate Members Are:

*Hydrological Services Pty Ltd, Bureau of Meteorology,  
Water Data Services, Scott Technical Instruments Ltd,  
Water EcoScience Pty Ltd, ECOWISE Environmental,  
Northern Territory Department of Lands, Planning and Environment  
Davidson Measurement Pty. Ltd., Mclean Automation Pty. Ltd.*

# LEFT BANK, RIGHT BANK, UPSTREAM, DOWNSTREAM

By Jeff Garbutt, WA Water and Rivers Commission

For more than thirty years now it has been our (standard) practice to express longitudinal distances along a river as increasing as one moves downstream, (distances upstream of datum are negative, distances downstream are positive). The other choice, of course, is to make them increase in the upstream direction, (distances downstream of datum are negative, distances upstream are positive).

But did we make the right choice?

I have been aware for a while now that other authorities around the world have adopted the UI standard. Even the surveyors that used to work for the old "Public Works" and the "Water Authority" used it. HECRAS also uses the UI standard.

It appears that we may be the only authority in the world that uses the DI standard. Is that so? Maybe someone could clarify that for me!

Let's look at the reasons for each choice:

**"Downstream Increasing" standard:** The reason that was explained to me back in the 1970's was quite simply because "downstream is the direction of flow - therefore we'll make our longitudinal distance increase as we move downstream".

**"Upstream Increasing" standard:** The reason for this is that if you look at an entire river system (including all the other rivers and tributaries that eventually flow into the main river(s), you need to have some common point of reference that every river in the system can relate to. The obvious choice is where the main river(s) meet the ocean. This point becomes the "zero distance datum" and all other points are measured upstream from this datum. Have a look at some of the flood study maps that have been done over the years and you'll see how this works in practice.

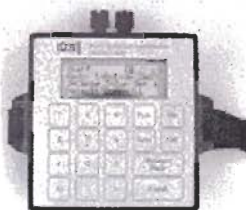
As the nature of our work has evolved to the point of where we are now looking at entire river systems rather than an isolated section of one river, (such as flood flow analysis), it would seem more appropriate to use UI standard. Also, we are starting to use more "off the shelf" software rather than "in house" software. The main one being HECRAS, which uses the UI standard.

Now I come back to my earlier question, "Did we make the right choice?" And if we didn't make the right choice, should we change? And, if we do change, what do we do about our left bank and right bank naming standards?

Maybe we could have some further discussions about this in future issues of the Hydrographic Newsletter.

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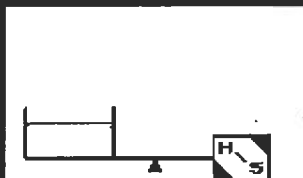
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## FLOOD WARNING ON THE OAKOVER RIVER

*Todd Baldock, WA Water and Rivers Commission*

Staff from the WA's Water and Rivers Commission Karratha office recently investigated and installed a flood warning/indication station on the Oakover River - Ripon Hills Road Crossing (near Port Hedland in the north-west of the state). The Oakover site greatly improves the capacity of the De Grey flood warning network by providing a fifth telemetered station within the catchment.

The project brought four mining companies together (BHP Billiton, Newcrest Mining, Pilbara Manganese, and Straits Resources) who assisted in funding the station and who will all benefit by the flood warning/indication aspect. It may also pave the way for similar projects in the area. We have earmarked other sites in the area which will probably involve the same companies. Future projects may however depend on the success of this site.

The Ripon Hills road, which connects Marble Bar to the far east Pilbara, was initially constructed to service the mining centres at Telfer (Newcrest), Woodie Woodie (Pilbara Manganese) and Nifty Copper Mine (Straits Resources). Since its construction began in 1998 the road has regularly been closed due to inundation of the major floodways. The Oakover River Crossing, which is located approximately 130 km East-South-East of Marble Bar, was closed for several months during the 1999/2000 wet season when heavy rain from cyclones brought widespread flooding to the catchment.

The three mining companies that operate in the area rely heavily on road transport. Pilbara Manganese for example employs approximately 30 independent road carriers to transport their ore to Port Hedland. Prior to the station being established Pilbara Manganese staff would have to drive out and visually inspect the water level at the crossing (a 6-hour round trip from Port Hedland). The need for easy access to on-site information was readily apparent. It was therefore not surprising to have overwhelming support for the project from the companies involved.

As a flood indication station it is important as it offers a real time view of the water level at the crossing. The station is also a valuable addition to the existing De Grey flood warning network that is currently in place. For this reason BHP Billiton offered to contribute to the project. BHP Billiton operate several mines in the Goldsworthy area and were interested in the flood warning capability that the station provides for their rail network. A pluviometer was also attached to the site which will offer real time rainfall information as well as provide long term records in an area that historically has little information.

The new 2100P gasless Mindata which has been on trial by the Commission's Instrumentation Facility was installed at the site. Although initially more expensive to set up, the operational costs will be less.

*(Continued Page 4)*

## FLOOD WARNING ON THE OAKOVER RIVER

(Contd.)

The other distinct advantage is that it will eliminate the potential to run out of gas. All the instruments were housed in a cabinet and connected by the Instrument Facility in Perth prior to being sent to the region. Having it all prepared saved the region valuable time in setting up the equipment on site.

The project was a good opportunity to build relationships between the Commission and local industry. It not only provides a service to the companies involved but also has a huge benefit to local communities, other businesses, government and tourists. The benefits to the Commission as a flood warning site is invaluable and will provide a good case study for other similar projects in the area.

A special thanks should go to the Instrument Facility whom were able to give priority to this job at very little notice.

Frank Davies also adds:

There are two key aspects of the item. One, it links into our role in flood warning in WA by combining the specific requirements of private enterprise. Two, the site has a Mindata pressure transducer that uses a compressed air system rather than nitrogen for its operation.

We operate a central polling facility for all our flood warning sites which poll at a minimum interval of daily, unless a flood event is occurring (when the frequency is increased). The polled data can be viewed at

<http://www.wrc.wa.gov.au/waterinf/telem/contents.htm>



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