

Australian Chemical Engineering History

Industrial Vacation Schools – a Personal Recollection

In the early 1970s Prof Rolf Prince at Sydney University introduced the concept of supervised industrial vacation training for Chemical Engineering students. It had long been a requirement, still applicable today, for Engineering students to undertake 12 weeks of industrial experience during their undergraduate programs. Students usually did this as individuals over the summer vacation between third and fourth year.

Prince's initiative was for a group of students from two or three Chemical Engineering Schools at different universities to work for a single company on one or more projects, under the supervision of an academic from one of the Schools. The projects were nominated by the company. The academic's role included setting up the project framework, usually some months in advance; coordinating and leading the group on site; assisting students with technical issues to reduce the load on the company's engineers; and generally supervising their project work.

I was responsible for one of these Schools at Mt Isa Mines (MIM) over the 1974-75 summer. I had a group of 10 students from Sydney University, the University of NSW and the University of Queensland. Our major project was to develop a computer model of the mine site's process water systems. It involved measurements of water flows and consumptions, and the development of material and some energy balances for the lead-zinc and copper concentrators and smelters, as well as tailings dams and all auxiliary processes. Water sourced from rain and from Lake Moondarra was included. The data were processed in a purpose written FORTRAN program.



Students and MB looking at the water reticulation map at MIM.

January 1974 saw one of Australia's greatest flood events in the last 50 years when tropical cyclone Wanda caused heavy rains and flooding across southeast Queensland including Brisbane. Mt Isa received some of the heaviest monsoonal rains in a decade, ultimately isolating the city by both road and rail with supplies being flown in from Townsville by air force Hercules transport planes. The first one to arrive brought the beer, the next the milk, bread and other foods – one had to get the priorities right! Our FORTRAN

program contained a short section which started "IF (RAIN .GT. 100)". That was 100mm (~4 inches) of rain per hour, and this occurred on several occasions.

The floods persisted through to the end of the vacation school. Two of the Sydney students (one was J G Allen, I think the other was P T James, but I am not sure) had travelled to Mt Isa in Allen's baby Fiat 500. They were able to put that on board a Hercules and fly out. Unfortunately I had travelled with my family in a large Chrysler Valiant station wagon with very low ground clearance. The car had

to remain in Mt Isa for a couple of months and was then railed back to Sydney. When I received it, the original white duco now had a dirty red tint from outback dust which could not be removed.

My other unusual recollection of the Mt Isa experience relates to our accommodation. My family was given the use of a small house at 6 Sulphide Street. With only evaporative air conditioning (I was a mere Senior Lecturer and refrigerative air conditioning was only for senior MIM executives), and daily humidities close to saturation in the wet season, we woke up each morning to find “New Guinea mould” growing up the side of the fridge and nearby walls. It was cleaned off each day but returned the next.

Chemical Engineering can indeed lead one to have “interesting” experiences.

Emeritus Professor Michael Brisk