Opportunities for University in Frigate Project

The ANZAC Frigate Project is receiving considerable attention in Newcastle, which will be where the frigates are built if the offer of the Australian Warships Systems (AWS) consortium is successful.

The Vice-Chancellor of The University of Newcastle, Professor Keith Morgan, pledged the University's support for Australian Warships Systems' bid for the contract, when interviewed by The Newcastle Herald recently.

Professor Morgan said the University had plenty to offer AWS if the contract, scheduled to be signed by the Federal Government in August, was given to the Newcastle-based organisation.

Professor Morgan said the award of the frigate contract to AWS would result in the greatest opportunities yet for interaction between an Australian university and a major industrial group.

The interaction between the University and AWS' frigate project would have a tremendous impact on the industrial and economic growth of the region, he said.

AWS would need support in a range of services such as testing, design and training that the University has the expertise to provide.

Professor Morgan said that in areas where the University had the skills but not all the desired facilities, it might get funding that otherwise could be denied to it for years.

The extra facilities and the new skills needed in the construction of the frigates would enable the University to increase its range of undergraduate and postgraduate courses, Professor Morgan said.

AWS, the University and the community would all become stronger as a result of the interaction.

He said AWS and the University had been talking about the project for more than a year with the discussions becoming more frequent and detailed since last September.

The Herald reported that the University and AWS officials had discussed the possibility of setting up joint ventures at the main Shortland campus and some of the Dutch firms that would establish in Newcastle as major electronics suppliers had shown interest in the University's research and development (R&D) work.

The Dutch electronics suppliers to the Netherlands-designed M-Class frigate chosen by AWS were looking at investing in five types of industry in New South Wales: electrical generation and switchgear, electronic controls systems, information technology, microelectronics and complex project management.

Professor Morgan told The Herald that the Engineering Faculty's standing in electronics and computer research was recognised at the beginning of 1988 when the Federal Government provided the funding to establish the Centre for Industrial Control Science (CICS) at the University.

The centre's work is recognised internationally. The 30 companies and government organisations it did work for in 1988 included two Swedish power authorities and a United States computer company, he said.

The University's computer science excellence was recognised in December when Australia's leading electronics firm, AWA (an AWS partner), announced that it would fund the establishment of Australia's first chair of microelectronics at the University.

Professor Morgan revealed that, in association with Industry and the HIHE, the University was developing a Centre for Engineering Design to build on its engineering strengths.

Professor Morgan emphasised the University's assistance in quality assurance to outside consultancies such as NewStat. NewStat was established last year, drawing on the expertise of the Department of Statistics and NewStat aims to become a national leader in providing quality assurance consultancy services for industry such as those involved in the frigate project.

Professor Morgan said TUNRA could also be expected to play a key role in the establishment of joint ventures between the University and AWS or any of its partners or suppliers.
Serious reservations over funding

The Government's Science and Technology statement is a matter of some significance. There is provision for a substantial increase in funding for the Australian Research Council, for additional funding for the National Health and Medical Research Council and for increases in numbers and value of Commonwealth postgraduate research awards. The additional funding for the Research Councils contains explicit provisions for infrastructure funding.

All of this is good, particularly in the allocation of additional funding and the acceptance of the need for infrastructure support. But there have to be some serious reservations. The increase in resources for the Research Councils is some $45 million in 1990 and a further $37.5 million in 1991, but not all of this additional money is new money. A large part of it ($20 million in 1990, and a further $25 million in 1991) is generated by continuation of the 'clawback' schedule for redirecting recurrent grant money from the universities to the Research Councils. It is a curious sequence which reduces the funding we have available to support University infrastructure so that the Research Councils can have additional money to serve the same ends. The sequence is, of course, consistent with the view that such expenditure needs to be controlled centrally.

Recognition by the Government of the needs for new money for research is important. The planned increase in funding arrests the decline in provision which has been evident in recent years. It does not remedy the accumulated deficiencies; or bring our funding to the levels achieved in universities overseas. The contrast in levels of funding now being implemented in Canadian universities makes unhappy comparison.

The report contains one matter which will be warmly welcomed. This is the announcement that the National Board of Employment, Education and Training will initiate a review of the quality and extent of library services necessary to meet the needs of teaching, scholarship and research. It is to be hoped that this review will not be unduly delayed, will rapidly identify the evident needs, and will find support in Government for its recommendations.

Professors join research support body

Two University of Newcastle Professors have accepted invitations to be members of expert committees of the Australian Research Council.

The ARC, which succeeded the Australian Research Grants Committee, administers the distribution of grants made by the Federal Government for research.

The ARC has four divisions specialising in Engineering, Applied and Earth Sciences; the Humanities; the Life Sciences; and the Physical, Mathematical and Chemical Sciences.

Professor Don Aitken is the Chairman of the ARC.

Professor Annette Dobson, Professor of Biostatistics, and Professor Ron MacDonald, Professor of Physics, have been appointed to the Committee of the Division of Physical, Mathematical and Chemical Sciences.

Professor Ian Plimer, Professor of Geology, and Mr John Burgess, Manager Iron and Steelmaking R&D with the BHP's Central Research Laboratories at Shortland, have been members of the Committee of the Division of Engineering, Applied and Earth Sciences since early last year.
Research

System detects power faults

A University of Newcastle researcher has received $320,000 to develop a new system for monitoring and protecting high voltage electrical switchyards and power stations.

Assoc. Professor David Blatt, of the Department of Electrical Engineering and Computer Science, was awarded the grant by the New South Wales Department of Minerals and Energy.

The support will help fund further development of Professor Blatt's new REMMIT system and, possibly, pave the way for it to be manufactured world-wide.

TUNRA, the University's research consultancy, has contracted Spengat Computers Pty. Ltd, of Newcastle, to assist Professor Blatt with research and ongoing developments.

Professor Blatt began working in the area of protecting electrical equipment about 10 years ago after workers and the State's power supply were threatened by a series of explosions at Vales Point Power Station.

The explosions were caused by a problem in the current transformers. The transformers are more than five metres high, are filled with oil and can carry up to 500,000 volts.

For many decades, current transformers have been used in switchyards and power stations for such purposes as protecting the systems and monitoring supply. Unfortunately, as the explosions showed, they are prone to failure.

Professor Blatt's 'breakthrough' effectively replaces the current transformers with an array of computer controlled magnetic field detectors. The principle of the scheme is to measure the magnetic fields created by the high current passing through the conductors and to relay the information via many microcomputers. The signals are fed into a modern realtime computer, which mathematically deduces all the currents present in the switchyard or power station.

Professor Blatt said the magnetic field detectors are small, inexpensive, and, most importantly, are not electrically or physically part of the circuit being protected. They operate in a similar way to an aerial and are at ground potential and safe to touch.

Once the magnetic fields are measured and the control computer deduces currents in all parts of the overhead structure, the currents can be tested for consistency, and any faults present can be detected and used to trigger circuit breakers in the same way as the existing bus protection schemes, he said.

Another advantage of this digital monitoring technique is that additional information about the onset of faults can be logged for later study.

In the last five years, Professor Blatt has made steady progress with his idea, assisted by the New South Wales Electricity Commission and the Electrical Research Board. A prototype incorporating 24 magnetic field measuring stations has functioned successfully at the Commission's 132kv switchyard at Merewether.

Investigations at the switchyard at Merewether led to TUNRA patenting the system and raising the question of the commercial potential of the new method with a number of manufacturers of electrical equipment.

It is possible that a commercial version could eventually come on line and Spengat Computers, with support from the Department of Minerals and Energy has undertaken work to develop the method commercially.

Having been awarded the grant by the Department of Minerals and Energy, Professor Blatt and Spengat Computers will continue the research, with the aim of improving the system so it will operate at a higher precision and robustness and, ultimately, be able to take over from current transformers.

Professor Blatt presented a paper on his method of monitoring and protecting switchyards to a world-wide conference of electrical engineers organised by the Institute of Electrical Engineers in Edinburgh in April.
Imagine for a moment, building plans, graphs, diagrams and even coloured pictures or paintings which speak to people.

Little wonder that one blind academic referred to the new audio graphics system as having the potential to help an enormous number of visually impaired and blind people.

Dr Don Parkes, Director of the University's Institute of Behavioural Sciences, has worked on the system for the past three years. In January, 1988, Mr. Richard Dear, of the Computing Centre, became his collaborator and now a Sydney electronics company, Quantum Technology Pty. Ltd. has won a $185,000 Federal Government grant supporting the manufacture and marketing worldwide of the system, which Dr. Parkes calls NOMAD. The Institute of Behavioural Science will receive up to $25,000.

The system has recently been further developed to allow representations of colours and patterns to be heard. This innovative technique is called Sound Painting.

Interest in the interpretation of the world's great paintings, for use by blind people, has led to the establishment of the Living Paintings Trust in the United Kingdom, the Patron being the Keeper of the Queen's Art.

NOMAD also enables braille to be learned by blind people, using facilities built into the system.

The Chairman and Director of New Product Development of Quantum Technology Pty. Ltd., Mr. Jeremy Miller, said his company's aim is to apply its experience and expertise in what he calls 'the blind business' and develop the system for commercial use in collaboration with Dr Parkes.

Mr Miller, who went to school in Newcastle and holds a BE degree in the University of Newcastle, said Quantum operated at Rydalmere with a staff of 20, including 11 who worked on research and development (R&D). The company had earned a high reputation as a builder of technological aids for the blind. Quantum has access to an international network in the United States, the United Kingdom and other overseas countries.

The grant has been made to Quantum by the Department of Industry, Technology and Commerce under the National Procurement Development Program, which promotes the development of new products for use by government departments and agencies. The DITC makes the grants to industry on a dollar-for-dollar basis for R&D purposes.

Linked to a speech synthesiser

Aids for the blind which Quantum has successfully commercialised in the past include a talking typewriter, called Speakwriter, a braille computer, the Mountbatten Brailler, and a braille translation system, Braille 'n Print.

Dr Parkes realised that visually impaired and blind people had difficulty in obtaining information from factual aids such as atlases and diagrams. Because of the need to use braille for all labelling, and also because of the relative inadequacies of the finger-tips as an information acquisition tool, it is extremely hard for blind people to obtain information. If we can introduce another of the senses, hearing, blind people are greatly assisted in obtaining information,' he said.

When a blind person uses Dr Parkes' system, he or she touches points on a tactile map, graph, diagram or picture, which is attached to a touch pad. The system is linked to a computer equipped with a speech synthesiser. Pressing on the touch pad activates the synthetic voice, which gives the information required.

Dr Parkes has also been collaborating with Professor Reg Golledge, of the University of California, who is also conducting research into electronic aids for blind people such as computer-aided wayfinding and navigational systems.

On a recent visit to the University, Professor Golledge, who is blind, praised Dr Parkes' NOMAD system, which he said could probably be enlarged to take in a wider range of subjects.

The New South Wales Department of Education supported the proposal for the DITC to provide funds for the further development of NOMAD because of its potential to create learning opportunities for visually impaired and blind children in schools. NOMAD is likely to be used as an aid for children with other learning related difficulties, apart from sight impairment.

Staff from the Student Support Services Division of the Department of Education will attend a demonstration of the device in Sydney in a few weeks time.

As part of the longer term programme during the next two to three years, Dr Parkes' other invention called 'Walkie-Talkie Wayfinder' will also be developed. The DITC grant to Quantum includes support for this project. Commercial-in-Confidence constraints limit further description at present. The system is a portable navigation device linked to NOMAD.

**Commercial Venture**

'Talking pictures' go international

Computer Seminar Series

TUNRA, in conjunction with the University's Department of Management and Computer Centre, offers you the following series of Computer Seminars in 1989:

- June 26/29: Macintosh Microsoft Word (version 3, four evenings), $350.
- July 3: Introduction to D Base 3, $250.

Advanced courses in Lotus and D Base will be held in September and October. Other courses can be arranged on request, e.g. expert systems and project management with micro computers. In-house computer training can also be arranged for a broad range of topics and skill levels.

The University of Newcastle NSW 2308 AUSTRALIA Phone: (049) 67 1811 Fax: (049) 674946 Telex: AA 28784

TUNRA, The University of Newcastle

**THE UNIVERSITY OF NEWCASTLE RESEARCH ASSOCIATES LTD.**

Seminar details — Gary Pulen at 67 1811.
Graduation '89

Last degrees from old University

Degrees were conferred upon 838 people by the Chancellor, Justice Elizabeth Evatt, at four 1989 graduations in The University of Newcastle's Great Hall on May 12 and 13.

The new graduates were the last admitted to degrees by the old University of Newcastle, which is about to amalgamate with the Hunter Institute of Higher Education and the Newcastle Conservatorium of Music.

This year men and women were evenly balanced in the University Medals list. Ms Veronica Lunn (English), Ms Denise Golds-worthy (Metallurgy), Mr Christopher Wright (Classics) and Mr Malcolm Engel (Chemical Engineering) are medal recipients.

Five distinguished persons were admitted to Honorary Degrees.

An honorary Doctor of Engineering degree was awarded to Dr Walter Hughes, CBE, in recognition of his long career as a professional engineer, company manager and executive in the ship building and railway industries.

Emeritus Professor Ian McC. Stewart had an honorary Doctor of Engineering degree conferred upon him in recognition of his contribution to the University, the engineering profession and research in chemical engineering.

Professor Warren Hogan, Professor of Economics at the University of Sydney, was awarded an honorary degree of Doctor of Science for his contribution to scholarship and research in economics over many years, including the period in the 1950s in which he was a member of staff of the University of Newcastle.

Mr Ulric Burstein, Musical Director and Conductor of the Hunter Orchestra, was a recipient of an honorary Master of Arts degree for his work for education and cultural life.

An honorary Doctor of Science degree was presented to the Hon. Mr John Varnum. Regional Commissioner and Deputy President of the Industrial Commission of New South Wales and Chairman of the Hunter Area Health Service Board for his contribution to industry and commerce of Australia and the application of his skills for the benefit of the Hunter community.

At the ceremony for Arts graduates, the Minister for Family and Community Services, the Hon. Virginia Chadwick, MLC, remembered when she was an undergraduate at the University in the 1960s when there was an emphasis on the Arts in Australian universities.

Mrs Chadwick said numbers in Australia's Arts Faculties remained high. The figure in 1985 was 60,000 - almost twice that of Science.

She said that in the week of the graduations she had introduced a Bill into the Upper House of the State Parliament providing for amalgamation of institutions of higher learning in New South Wales.

"The University of Newcastle and the University of Technology, Sydney, will not become network universities. In each case, partners have agreed that they will merge fully in order to create a new institution. The institution will take the name of the previous university.

'An Interim Council will be proclaimed to ensure the new University Council is established within 12 months. Its role will be to bring together the components of the University.'

Mrs Chadwick said Dr Metherell's task was to ensure his Council appointments reflected a balance of the interests represented in the participating institutions and the community.

The Vice-Chancellor, Professor Keith Morgan, who gave a report to every graduation, said that the Bill giving effect to the amalgamation of the University. the Hunter Institute of Higher Education and the Newcastle Conservatorium of Music passed through State Parliament on May 11.

'In the words of the Bill, this establishes the University of Newcastle as "a continuation of and the same legal entity as the (existing) University", Professor Morgan said.
Academic Exchange

Ube and Newcastle Faculties linked

Following a visit to Newcastle by the Mayor of Ube City in Japan, an academic exchange agreement has been signed between the Faculty of Engineering and the Faculty of Engineering of Yamaguchi University, which is in Ube.

The affiliation between the faculties was originally suggested because of Newcastle’s and Ube’s relationship as Sister Cities. This year is the 10th anniversary of this formal link.

During a visit to Newcastle last year, a delegation from Ube City, including the Mayor, raised the idea with the Vice-Chancellor, Professor K. Morgan, and Professor Roberts, who said that they would be pleased if the exchange agreement were approved.

Under the agreement Professor Sambuchi’s Faculty and the Faculty of Engineering will promote academic exchange in those fields that will enhance each Faculty’s educational and academic roles, including exchange of information and materials, promotion of activities such as collaborative research, lectures and symposiums, the exchange of scholars and researchers and the exchange of graduate students.

The agreement will be in force for five years.

1989 Management Seminar Series

TUNRA, in conjunction with the University’s Department of Management, offers you the following series of one-day Management Seminars in 1989.

• June 30: Effective Communication
• July 28: Computerised Skills Inventory for your Organisation
• August 24: International Marketing
• August 25: Redesigning Work for the Competitive 1990s
• September 29: Team Building and Organisational Development in a Changing Work Environment
• October 26: Market Research
• October 27: Managing Change in a Post-Industrial Society

Time: 9 am to 5 pm
Cost: $250 per registration ($225 two or more registrations)
Seminar Details — Gary Pullen at 07 1811

Visit by Federal Ministers

Yamaguchi University was founded in 1949 and has grown to become a sizeable university consisting of eight faculties. The university has 1,815 staff and 8,431 enrolled students.

The main campus is in Yamaguchi City, west of Hiroshima. However, the Faculties of Engineering and Medicine are located in Ube City, south of Yamaguchi City.

The Faculty of Engineering is constituted of 10 departments with a total of 40 Chairs. The departments are Mechanical Engineering, Industrial Mechanical Engineering, Mining and Mineral Engineering, Industrial Chemistry, Chemical Engineering, Electrical Engineering, Electronic Engineering, Civil Engineering, Construction Engineering and Applied Science.

The Dean of the Faculty of Engineering at Yamaguchi University, Professor Masao Sambuchi (right), and the Dean of the Faculty of Engineering, Professor Alan Roberts (left), with Administrative Officer, Mr Geoff Gordon, sign the agreement.

The Minister for Trade Negotiations, the Hon. Michael Duffy (centre), and the Minister for Industrial Relations, the Hon. Peter Morris (right) recently visited the University. They are pictured meeting with the Vice-Chancellor, Professor Keith Morgan, before delivering a joint lecture on Economic Reform in Australia to Industrial Relations students in the Department of Economics.
Research into grief reaction

A study of 49 parental couples in the Hunter Valley has found differences, and similarities, between the responses of parents who have a handicapped baby and parents who have experienced a cot death.

The study, conducted between 1983 and 1987, produced evidence that anxiety and depression predominate for both groups and that such reactions are more evident in mothers than in fathers who have experienced sudden infant death. As a group, such parents experience greater anxiety and depression, than do parents who have a handicapped baby.

Supervised by Professor Beverley Raphael, who resigned from her position as Professor of Psychiatry in 1988, the study was undertaken by Anthony Nicholas, Principal Lecturer and Head of the Department of Social Health and Welfare at the Hunter Institute of Higher Education to meet requirements for a PhD degree in the Faculty of Medicine at the University of Newcastle.

Participating parental couples in the pilot and main studies were involved in one of two infant support programs in the Hunter Valley, the Baby Stimulation Program at the Special Education Centre at the Hunter Institute and the Prelude Program at Kurri Kurri. The Director of each support program, as well as research officers from the Department of Health and the Faculty of Medicine, facilitated parent contact and data analysis.

The study addressed reactions of parental couples to congenital handicap and to cot death. It was thought that the two groups of parents would be similar in their response patterns and follow the stages described in literature on grief and bereavement — but that the groups would differ in the intensity and duration of their grief. The results indicated that, in the short term, parents who have experienced a sudden infant death have higher levels of unresolved grief and that, over all, mothers experienced greater anxiety and depression than did fathers.

Analyses of responses to a 25 item Unresolved Grief Inventory, specifically developed for the study, revealed five major factors: Depression/Anxiety, Coping, Being Told, Stigma and Acceptance. As well, audio-taped responses to a Semi-Structured Interview were analysed and compared to those on the Grief Inventory.

Data indicated that parents who experienced sudden infant death had greater difficulty with Coping, Stigma and Acceptance than did parents with handicapped babies. The latter group, however, had greater difficulty in dealing with issues on how they were told about their baby’s problems.

The study also indicated that parents in both groups, especially fathers, were sensitive to the reactions of health professionals, e.g. medical and nursing staff, and the impact that such reactions had not only on themselves but also on their partners.

Evidence suggested that the birth of a congenitally handicapped infant precipitated a parental grief response due to the loss of an idealised baby. It seems that this loss is unlike that of parents who have experienced cot death and that qualitative differences, as well as the quantitative ones shown by the results, are of importance.

Such findings, of value in the professional preparation of persons working with families in the fields of Medicine, Health, Education and Welfare, support the proposition that parental responses to cot death and handicap are likely to be reactive and time-related rather than endogenous and chronic.

Papers on the study have been published in the Medical Journal of Australia and the Journal of Early Child Development and Care. More than 60 requests for additional information on the research have been received from overseas universities, government departments and teaching hospitals.
Another book produced in the Department of History has just appeared. It is the biography George Reid, written by Gregory McMinn, who recently retired from his position as Assoc. Professor in the Department of History, and published by Australia's leading academic publisher, Melbourne University Press.

Sir George Reid, whose critical but controversial role in the Australian federation movement led to his misleading nickname 'Yes-No Reid', was born in Scotland in 1845 and died in 1918. In the course of his long career he was not only a leader of the Sydney Bar but successively Minister for Public Instruction, Leader of the Opposition and Premier of New South Wales; Leader of the Opposition and Prime Minister of Australia; first Australian High Commissioner in London; and a member of the wartime House of Commons.

His ludicrously obese figure, swaying gait, walrus moustache and monocle made him a caricaturist's dream; and just as his figure lent itself to caricature so did his personality lend itself to the same kind of distortion. His reputation has suffered, over the years, from the assaults of two contemporaries, Alfred Deakin, who absolutely failed to understand him, and Bernhard Wise, who grossly distorted the account of his part in the federal movement. With a couple of notable exceptions their views have been accepted by subsequent historians, and Reid's great contributions, particularly towards making the Commonwealth Constitution more liberal and democratic than it might otherwise have been, have been overlooked. It is arguable that if Reid had got his way fully in 1898-99 the traumatic events of 1975 would not have occurred.

Mr McMinn's book not only deals more fairly with Reid in this matter than any previous account but explores his work for education (which included bringing order out of the chaos produced by Parkes's hasty legislation of 1880, and establishing the first New South Wales public high schools, as well as the first technical colleges and the first evening university courses); examines the revolution-