Christmas Message

With 1985 drawing rapidly to a close, it is my pleasure once again to wish everyone a Happy Christmas and to express the hope that the festive season will provide many pleasant occasions for families to relax together. Some will be travelling interstate and overseas to be with relatives, others staying at home — wherever you are vacationing I hope you have a safe and most enjoyable time.

This year, the first of the 1985-87 Triennium, has been a busy one for the University and I believe, a successful one. With quotas operating for the first time in all academic areas, some students who might otherwise have enrolled here had the disappointment of not being offered a place. Nevertheless a record number of 1538 students commenced undergraduate courses in 1985, compared to the average of about 1000 for the years 1978-82. Also three-quarters of these were full-time enrolments, compared to just over one half when the intake was around 1000.

No wonder every part of the University has been under pressure. Quotas for next year will be the same as for 1985, except for the 70 extra students for which the Government has made available extra funds. Some relief in student accommodation will become available with the completion of the new houses at Edwards Hall, but the problem of finding suitable accommodation remains severe. The impact of the new requirements and limitations in respect of overseas students has yet, of course, to be seen.

1985 saw the successful enrolment of four Aboriginal students into the Faculty of Medicine, and a further four will commence in 1986. An Equal Opportunity Plan was produced and accepted by the Council and as the year ends, a lively discussion is taking place on the perennial question of University Government. However, a report by the CTEC released in November reopened the unfortunate question of amalgamation — still not to be enforced, but considerable pressure in this direction on the two institutions through the recommendation of lump-sum funding for the 1988-90 Triennium. Hardly what we would have asked for as a Christmas present, but perhaps not unexpected in the light of earlier events. We can only hope that better judgment of the needs of the Valley will prevail and resolve to work towards that end.

A significant number of staff chose 1985 as the year in which to retire — others have resigned to go elsewhere and the opportunity exists for the University to seek “new blood” to fill these vacancies. Such refreshment is good institutionally, although we will miss the contributions of many long-serving staff who have seen the University evolve from its College days to its present size and stature and whose dedicated efforts have helped to bring this about. We wish them well in their new ventures.

To all staff, my personal thanks for the year’s hard work, often undertaken under pressure and with fewer resources than most areas could ideally make use of. Without this willingness to contribute fully to the life and work of the Institution, the University would be much poorer.

With best wishes for an enjoyable break, the compliments of the Season and a happy New Year.

D. W. George, Vice-Chancellor.

INSIDE: Large Grant from Alcan
Holiday Arrangements

The University will close on Tuesday, December 24 for the Christmas to New Year Holiday recess and re-open on Thursday, January 2.

UNIVERSITY NEWS

With this edition, University News goes into recess and will not re-appear until February 17 as No. 1 issue of the New Year, 1986.

AUCHMUTY LIBRARY

During the long vacation ending on February 24 (the first day of First Term), the Library will open from 8.30 a.m. until 5 p.m. on Mondays, Wednesday and Fridays and from 8.30 a.m. until 7 p.m. on Tuesdays and Thursdays. It is closed at weekends.

STAFF HOUSE

The Staff House will close on December 24 and re-open on February 5, 1986.

THE UNION

The Union will be open on weekdays from 9 a.m. until 6.30 p.m. during the long vacation. It will re-open after Christmas on January 2.

SPORTS PAVILION AND AUCHMUTY SPORTS CENTRE

These facilities will close on December 24 and re-open on January 6.

CREDIT UNION

The staff Credit Union in the Union will be open on December 24 (between 9 a.m. and 4 p.m.). The Credit Union will re-open on January 2.

Large Grant from Alcan

A team of research workers from the Faculties of Medicine and Mathematics, Statistics and Computer Science is the recipient of one of the University's largest research grants.

The team has received a grant of $221,000 over three years from Alcan Australia Ltd., to investigate lung function in workers at its smelter at Kurri Kurri.

The team is headed by Dr. Michael Hensley, Senior Lecturer in Community Medicine, and includes Assoc. Professor Annette Dobson (Statistics), Professor Richard Kalman (Occupational Medicine), and Dr. Geoff Field, Staff Specialist in Respiratory Medicine at the Prince of Wales Hospital Sydney.

Mr. Field has carried out a number of studies into lung function in aluminium smelter workers.

Mr John Wodarczak, a research assistant in Medicine, has been appointed Project Manager.

The research team has worked through a Standing Committee, chaired by Dr. Hensley, which includes representatives of Unions and management.

This study is the first triennium of a 10 year prospective study to find out if work at the smelter, especially in the pot room, is associated with any long term damage to lung functions.

Over the three year period, lung function will be measured at six-monthly intervals to nearly all workers using sophisticated computerised lung function equipment.

The team also includes a field worker, a nursing sister, who will work inside the Kurri Kurri smelter.

Term dates 1986

The University's 1986 academic year will comprise the following terms, for all Faculties other than Medicine.

TERM 1 VACATION TERM 2 VACATION TERM 3

February 24 May 5 to May 26 to August 18 to September 8 to
May 2 May 23 August 15 September 5 October 31

Examinations Commence: November 10

Includes: Mid-year Examinations Period (June 30 - July 11)
Farewell Newcastle 85

It was a happy/sad occasion. As Alex Ngian, Secretary of the Singapore Students' Association, said, Farewell Newcastle '85 marked the end of the graduating students' academic life in Australia.

Dr Barry Hill, of the Department of Mechanical Engineering, sang appropriate songs during the 10 course Chinese banquet.

The Warden of Convocation, Fr. James Bromley, spoke of the Singapore students having thrown themselves conscientiously into university life. He received loud applause when he proposed that the University mount a graduation ceremony in Singapore.

The Vice-Principal sent a letter reminding the graduating students that they remained permanently members of the University through their membership of Convocation and wishing them every success in their future careers.

The Singapore Students' Association obtained a number of sponsors and, consequently, was able to present souvenirs to guests, produce souvenir programmes, and give a return air ticket to Singapore and other prizes.

The function was organised by a committee, including Heng Hock Heng (Chairperson), Alex Ngian and Loong Kok Cheong (Treasurer).

Alex Ngian spoke of support given by Jayes Travel Service and Singapore Airlines.

"Although we have not developed the habit of pouring a bottle of Vegemite over a plate of lamingtons and washing it down with a can of Fosters, we did treasure the time spent in Australia," he said.

"Further, we did experience the varied lifestyle of Australians and had very strong friendships with them.

"We hope that through this function the links between overseas students and their Australian counterparts will not be broken. Hopefully, most of us will continue our contact with the University through the Convocation.

The Singapore Students' Society was formed in 1983, with the aim of developing greater cooperation among Singaporean students studying in Newcastle and of assisting new students to gradually adapt to the Australian lifestyle," Mr Ngian said.

Staff members at the farewell were obviously pleased they went. The graduating students from Singapore will be welcome in many quarters if they are able to return.

Maths Summer School

Each year the Newcastle Mathematical Association offers a summer school for high school students about to enter Year 12.

Courses to help the students will be offered in the forthcoming summer school (January 21 to 23), which will be the 18th Mathematics Summer School.

It has been arranged in association with the Department of Mathematics, Statistics and Computer Science. For enquiries and enrolment forms please phone 68 5657.
Move to Sydney after 10 years

After 10 years at the Newcastle Medical School, Professor Stephen Leeder will vacate his Chair in Community Medicine on January 31 in order to take up the Chair of Community and Geriatric Medicine at the University of Sydney attached to the Westmead Medical Centre.

Professor Leeder explains that a transition in his personal development and the Medical School's development had led him "on". "If I had been at Westmead for the last 10 years, I might now be looking for a position at the Medical School."

Professor Leeder says that the Department of Community and Geriatric Medicine at present had two Professors and a staff of about 25, located at Sydney University and the Westmead Hospital.

Of special interest to him will be the opportunity to use research models built up here in Newcastle. His Department will focus research on trying to get the best possible return from the health dollar in the western suburbs of Sydney, the area serviced by Westmead Hospital.

The work will be oriented directly to the needs of that community and such problems as diabetes and heart disease will be evaluated.

Professor Leeder says that his new Chair included a quite sizeable commitment to educating undergraduate students. The curriculum provided for Year IV medical students to be trained at Westmead under an "attachment" arrangement.

Professor Leeder says he would not have resigned if he thought the Medical School was unstable. "It has reached a state of maturity after having been guided through stormy water by Professor G. Kellerman and Professor J. Hamilton. There is no fear that it will fall to pieces. I believe in the injection of new blood into an institution which is still growing. The stimulus of someone new coming into Community Medicine will be excellent."

He says he had developed close attachment to Newcastle to such an extent that he will continue to live here after he has taken up his Westmead appointment. His two sons are at school here and his wife, Dorothy, has her own practice.

"Newcastle is one of the most gentle, and caring, communities I have encountered. But, it is vulnerable and can be manipulated. And some of the politicians here do not help. Their job is to represent their electors, and not satisfy the whims of their seniors in Macquarie Street."

Gateshead High's wins

Mr. E. B. Jacobs, Chairman of Newcastle Section of the Royal Australian Chemical Institute, congratulated Mr. Jeff Bromage, Science Master at Gateshead High School, and students who completed very satisfactorily in the National Chemical Analysis Competition.

Completing in teams of three, two teams from Gateshead won the regional competition and finished first and third in the national competition.

Photo shows (back row) Mr Jacobs (left) with Andrew Masson, Alison Peters and Mr. Bromage, and (front) Bronwyn Elliott, Malcolm Stokes and Tara Sanders. Absent: Simon Tarnawski.
Council approved the promotion of 21 members of the academic staff.

**New Associate Professors**
- Dr. A. Barthofer, Modern Languages
- Dr. K. Ono, Modern Languages
- Dr. K. Walla, Modern Languages
- Dr. R. J. Evans, Electrical and Computer Engineering and Surveying
- Dr. J. G. Fryer, Civil Engineering and Surveying
- Dr. S. L. Carney, Medicine
- Dr. T. K. Roberts, Biological Sciences

**New Senior Lecturers**
- G. R. Keating, Economics
- Dr. D. H. Craig, English
- Dr. C. O. F. Parsons, Sociology
- A. C. W. Sparkes, Philosophy
- Dr. G. A. Lawrence, Chemistry
- Dr. D. Munro, Psychology
- Dr. D. J. O'Connor, Physics
- Dr. H. P. Pfister, Psychology
- Dr. H. W. Dick, Economics
- Dr. J. A. Doeleman, Economics
- P. A. Fairhall, Law
- Dr. D. H. Wood, Mechanical Engineering
- Dr. W. P. Wood, Mathematics, Statistics and Computer Science

**New Lecturer**
- K. W. Lee, Geography

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**Craftsman Presents “Navy”**

At a small gathering at the University on November 28, five ships-in-bottles built by Mr. Haakon Nilsen, of Warners Bay, were presented.

Mr. Nilsen is recognised as an outstanding exponent of the Norwegian art of building ships-in-bottles. He was born in Norway and has model ships in museums around the world.

Mr. Nilsen donated a ship to the Department of Naval Architecture at Shanghai Jiao Tong University and then had the idea of donating his models to some other universities.

The Norwegian tradition of building ships in bottles is fast disappearing and he believes that universities will recognise their great historical importance.

There was added significance in Mr. Nilsen presenting a model ship to this University as one of the craftsman's daughters, Katrina Nilsen, works in the Property Division. Moreover, Mr. Nilsen's wife, Laurie, Katrina and another daughter, Jennifer, have received their university education in this institution.

The curator of Newcastle Maritime Museum, Mr. Richard Nor-
"Night" Brightens up Edwards Hall

"A Night at the Hall" provided residents of Edwards Hall and the college's Trustees with a different view of the life of a university student. Thanks to 37 talented people, the audience was able to hear a jazz group, a chamber music group, a Baroque group, the Elizabethan Singers and poetry readers, as well as see a judo group.

The chamber music group already had an established reputation within the Hall community. Matthew Lilly and Murray Webber also performed with the Baroque group.

The crowd was treated to Masafumi Kisada's rendition of Auld Lang Syne on the Japanese flute. Masafumi and Miki Namura, a judo group member, showed that our Japanese exchange students have been valuable assets to the Hall.

The foray into poetry reading demonstrated that this art form is far from boring. Eric Holvik, an American student, entertained with some Woody Allen humour. Don Millar chose modern poetry of a different type. Many in the audience said that the Elizabethan singers were "the find" of the night. Georgina Huxtable, Sue Crawley and Natalie Downing graciously sang "Where the Bee Stings" as an encore. Throughout their performance they had a captive audience.

Michael Jamieson was Master of Ceremonies and proved to be quite the man for the job. Michael was later elected Chairman of the Resident Members' Association.

Wine was provided by a group of students and it is hoped to purchase a harpsichord for the Hall. John Harvey, Michael Bentink and Caroline Booth carried out this service.

The evening was recorded in photographs taken by students, directed by Christopher Deane and Michael Seeto. Jennie Green provided help.

It was agreed that thanks must go to Di Bridger for opening the residents eyes to the wealth of talent within their midst. Through tireless work and liaison with the Warden, Di brought the idea to fruition.

The Real Charles Rasp

Ms. Maja Sainisch, a presenter on 2NURFM, has been awarded a C.H. Currey Memorial Fellowship valued at $2500 by the State Library of N.S.W. in connection with her research into the life of Charles Rasp, the discoverer of the Broken Hill mineral fields.

Rasp, a boundary rider, and two helpers pegged out a claim at Broken Hill in 1883 and the BHP, the public company floated to mine the lead and silver deposits, was incorporated two years later.

Ms. Sainisch found that Rasp had deliberately concealed his true past to the extent of changing his name and retiring into the background when development of the Broken Hill mines commenced.

She is producing a biography which will remove the mythology surrounding Rasp, commonly seen as the simply and lucky boundary rider who had come to Australia for health reasons.

Maja has been researching Rasp for the last five years. "The job kept on growing. After searching through countless documents in archives in Australia and ten countries in Europe, I have uncovered a fascinating, dramatic and tragic life story of a young German
aristocrat who decided in 1870s, during the Franco-Prussian war, to obtain freedom in Australia.

"He left the warfront in France two weeks after his friend, Dr. Franz Carl Emanuel Rasp, was killed in action and on his arrival in Australia he chose his new identity, Charles Rasp."

Ms. Sainisch has produced several publications on Charles Rasp, including a short biography for New Beginnings, commemorating 100 years of Australian-German relations, published by the Institute for Foreign Cultural Relations. She also wrote a ballad about Rasp which was arranged by the Australian composer, George Dreyfus, and performed by orchestras in Melbourne and Broken Hill.

She hopes that her account of the real Charles Rasp - a nobleman from Germany who was educated in Paris and who had extensive knowledge of the sciences and languages - will appear during Australia's Bicentenary.

Ms. Sainisch is married to Professor Ian Plimer, Professor of geology at this University.

Changes in Secretary's Division

A UN man with more than 12 years' experience on the staff has been appointed Assistant Secretary in the Secretary's Division. Mr. Frank Hawkins replaces a previous Assistant Secretary, Mr. Steve Boydell, who retired last September after more than 14 years' service to the University.

Since 1973 Mr Hawkins has been Faculty Secretary, Faculty of Economics and Commerce and, since 1976, Senior Administrative officer responsible for the Faculties of Engineering and Architecture. He has also served as Secretary of some Senate committees. He was instrumental in the Faculty of Economics and Commerce holding "reunions" of graduands on Graduation Days and induction sessions on Enrolment Days.

Away from Faculty work at the University, Mr. Hawkins main interest has been cricket, both as a member of the former Venerable Gentlemen and Administration teams.

As an Assistant Secretary his duties will include managing the Faculty Secretaries and Student Administration and assisting such bodies as the Admissions Committee and the Committee concerned with an Aboriginal Admissions and Support Scheme.

Mr. Hawkins' brother Cliff, a graduate of Newcastle University College, is Dean of the Faculty of Science at the University of Queensland. His sister Marcia recently retired after being Secretary in the Department of Geology.

One of the University's best known administrative staff members has been appointed Senior Administrative officer in the Secretary's Division. Since 1979 Mrs. Linda Harrigan has been Administrative Officer responsible for the Faculties of Mathematics and Arts. Prior to that she was a Graduate Clerk (1973 - 1979) and Secretary to the Dean of the Faculty of Arts (1968 - 1973). Mrs Harrigan will take over responsibility for the Faculty of Economics and Commerce.

Mrs. Harrigan and Mr. Hawkins.
The Vice-Chancellor reported to the Council on December 13 that 40 submissions varying widely in their comment had come in on the proposed recommendations dealing with University Government. The Council approved the suggestion that the Committee established by Council to carry out a review of University Government reconvene early in 1986 with a view to bringing its further advice to the Council in February.

Council members had before them a proposal from the Warden of Convocation, Father James Bromley, that the University mount a graduation ceremony in Singapore next year at which graduands from Singapore, Malaysia, Indonesia and other countries in close proximity to Singapore would receive their testamurs. The Vice-Chancellor was asked to consider that matter in detail and report to the February Council.

Significant discussions have been held over some months about the possibility of introducing a degree of Bachelor of Science (Aviation).

A report from Senate placed before Council members explained that the University had been approached to investigate the possibility of creating a degree in Aviation which would represent the theoretical component of pilot training to the level of Commercial Pilot. The University course would be additional to the flight time and training necessary to obtain all levels of pilot licence, though there would be co-operation and interaction with the Civil Air Training Academy at Cessnock.

Extensive survey work had been carried out with the various areas of the aviation industry and significant interest had been expressed. There were real prospects of encouraging overseas students on a full fee-paying basis to enter the course. There were also strong possibilities of industry endowment of the Chair.

The Faculty Board, Faculty of Science, had supported in principle the introduction of a degree of Bachelor of Science (Aviation), subject to questions of appropriate funding, staffing and accommodation being resolved, and to the development of an acceptable curriculum.

A Board of Studies in Aviation would be created with the intention of allowing for industry input to the degree, while retaining the academic dimensions of the degree within the control of a single Faculty.

The Vice-Chancellor informed Council that Professor N. Rutherford had advised him of a group which had been formed to seek the establishment of an International House, as a joint University-NCAE student housing facility, with the possibility of seeking bicentennial funding. Professor Dutton had agreed to serve on it as his nominee.

Council appointed Professor G. J. Jameson Head of the Department of Chemical and Materials Engineering (comprising the existing Departments of Chemical Engineering and Metallurgy) for three years from January 1, 1986, when the new department comes into being.

Mr. D. Mitchell was appointed Head of the Department of Law for one year from January 1.

Council noted the difficulty experienced by a large number of visitors from outside the Region in finding both the University and the Newcastle College of Advanced Education sites. It decided that a joint approach be made by the two institutions to the responsible authorities seeking the provisions of improved signposting on a number of approach routes to the campuses.

Survey by Staff Association

The Executive of the Staff Association has announced the results of a survey conducted among its general membership in connection with the proposed changes in University Government.

A general meeting of the association amended four of the seven recommendations made by the Council’s committee and the Executive subsequently sought the support of members for the amended set of recommendations.

The responses to the survey covered 60 per cent of the total membership.

The set of proposals from the Staff Association and the survey result:

1. (a) That the University Act be suitably amended so as to preclude student representation on Council via Convocation; (b) That direct representation on Council is made available to postgraduate students but not at the expense of staff member representation on Council. (80 per cent in favour).

2. That the academic staff members of Council be elected by all full time academic staff of the University acting as a single electorate with all full time members of that staff eligible to nominate for the positions. (78 per cent in favour).
3. That candidature for the position of Dean of Faculty be available to all full-time members of academic staff eligible for appointment as Head of Departments within the Faculty. (60 per cent in favour).

4. That candidature for the Headship of a Department be widened to include the Professors, Associate Professors, and Senior Lecturers within the Department. (71 per cent in favour).

5. That membership of Departmental Boards be enlarged to include all Professional Officers in the Department and also one member elected by and from among the general staff of the Department. (62 per cent in favour).

6. That all full-time academic members of staff who are members of the Departmental Board be entitled to vote in any election held within a Department to determine its nominee as Head. (86 per cent in favour).

7. That any Selection Committee for academic appointment the Department concerned be represented by its appointed Head and one other member of the full-time staff of the Department elected by and from the Departmental Board. (80 per cent in favour).

The Secretary (Mr. Pran Chopra) said that experience showed that the reported 60 per cent response rate was a significant underestimate of the actual response, as his association had consistently found that 10 to 12 per cent of members could reasonably be expected to be off-campus at the time of a survey for reasons such as study leave, long service leave, field trips conference attendance, etc. The 60 per cent reported probably reflected a 70 to 75 per cent response vote.

PSA Looks Ahead

1986 holds the promise of being an interesting year for the University's Sub-division of the P.S.A., in the view of Mr. Lionel Farrell, re-elected Chairperson of the Sub-division.

Mr. Farrell presented his annual report to the sub-division on December 4. The main themes that emerged from the report included:

* More emphasis should be given in the selection process for the Vice-Chancellor's successor to the administrative and management skills of the applicants, including their understanding of and flexibility regarding industrial issues, than to their research records.

* During the year some members referred to the Management Committee their concern about the effect re-organization involving their Department/Division would have on their conditions of employment and duties; in particular the Department of Metallurgy and the Secretary's Division. In the Secretary's Division, a consultative committee was formed and this mechanism might be useful in other Departments.

* One of the major sources of complaint made to the Management Committee during 1985 has been the University's delay in dealing with reclassification applications. The Director of the Staff Office had stated most of the backlog should be cleared by March, 1986. The Management Committee would monitor the situation, particularly as the procedures are due to be reviewed towards the end of 1986. Meanwhile members should continue to let the Management Committee know of any difficulties they encountered.

* The appeal against the procedures followed in setting up the Occupational Health and Safety Committee was disallowed on October 2 and the committee was thereby able to start its valuable work in the University.

The election of officers for 1986 resulted:

Chairperson, Mr. Farrell
Deputy Chairperson, Dr. David Kay
Secretary, Ms. Susan McDonald
Assistant Secretary, Mrs. Mary Stroud

Ordinary members, Mr. Bede Jordan, Mr. Richard Murray, Mrs. Joan Allridge, Mrs. Joy Haes-11, Mr. John Birdwood, Mrs. Neil Keats and Ms. Pam Kristensen

Delegates to Annual Conference, Mr. Murray, Ms. McDonald
Nominee as Central Councillor, Mr. Giles Martin

Government Agencies' Division councillors, Mr. Martin and Mr. Farrell

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Staff House Christmas Party

The Committee has great pleasure in inviting you to a Party
Friday 20th December - 4.00 p.m. - 6.00 p.m.
Come & Celebrate with your Colleagues.

Beer - Wine - Snacks
And it's Free!
Yachting first for TUNRA

A division of TUNRA Ltd. has designed and manufactured electronics and sailing equipment which could help Australia to retain the America's Cup in 1987.

Of great value in the fast-growing field of computer-aided yacht racing, the electronics and equipment are the result of Professional Officer, Mr. Martin Ooms, and Electronics Engineer, Mr. Steven Wiehe, working directly with the Kookaburra Taskforce 87, one of the Australian syndicates taking part in the America's Cup Challenge.

Mr. Ooms and Mr. Wiehe designed and built amplifier circuits with radio frequency immunity and transducers for the 12 metre racing yacht, Kookaburra.

Mr. Ooms, an enthusiastic Lake Macquarie and bluewater sailor, has installed other experimental equipment into Sydney Farr 40s similar to the winner of last year's treacherous Sydney to Hobart race, Indian Pacific. He is a crewman on one of the yachts, Christa-Farr, owned by Mr. Dennis Pomfret, and is anxious to continue these tests during this year's Sydney to Hobart race.

Taskforce 87, established by the Parry Corporation, has brought together many yachting specialists in an attempt to optimise Kookaburra's performance.

Heading the team is Mr. Iain Murray and team members include Mr. Chris Todter, a computer engineer.

Kookaburra has a "12th man" in its crew - a powerful 10 megabyte computer which provides Mr. Todter and the crew with advice on everything from the predicted wind strength and direction on the next leg to the correct spinnaker to set when the yacht reaches the windward mark.

Mr. Ooms made contact with Mr. Murray and suggested that the division of TUNRA Ltd. which carries out research into bulk solids handling, based in the Department of Mechanical Engineering, be requested to assess some new ideas for improving Kookaburra's performance. In Western Australia Mr. Ooms and Mr. Todter held discussions.

Mr. Ooms explained that Kookaburra seemed to have an edge over its opponents as a result of "electronic feel."

He said that people who sailed small dinghies were able to "feel" their boat because they were close to the water, and, being small and light, their boats responded to every movement. "Twelve metre class yachts are 'the Grand Prix cars' of the seas - more than 20 metres long and weighing about 25 tonnes so the 'feel' is non-existent," he said.

"However, the computer on Kookaburra logs and analyses data on wind speed, wind angle,
boat speed, compass bearing, rudder and trim-tab angles, leeeway, water temperature, deceleration, rig tension and other things. The sailors are given 'readouts' and, consequently, they can 'feel' the boat.

"Kookaburra I, which visited Newcastle early this year, has been trialling very well, having raced against the South Australians and the Americans and shown superior hull speed under most conditions. This is a very, good result for the syndicate's first boat.

"Kookaburra II, to be launched this month, will be fitted with rig tension transducers and electronics designed and built by us in the Department of Mechanical Engineering".

Meanwhile, the local yachts that are using new equipment designed by TUNRA Ltd's BSHRA are also doing well in trials. Paladin, owned by Dr. Colin Franklin, carries unique force transducers on the running back stays. The yacht will represent N.S.W. in the Southern Cross Cup races to be held before the Sydney to Hobart race.

Chrisca-Farr, on which Mr. Ooms sails, is leading the Lake Macquarie offshore pointscore at the moment. Mr. Ooms has done more than 7000 sea miles in the yacht, including two Pittwater to Lord Howe Island races and two Sydney to Hobart.

TUNRA Ltd.'s BSHRA is looking for more design projects and welcomes enquiries on Ext. 528.

Research brings patent

The University and the Commonwealth Government have taken a joint patent on a new technique for processing adaptive arrays following research done in the Department of Electrical and Computer Engineering.

The Department and the Commonwealth Department of Defence have been collaborating for some time on research and computer studies in such fields as arrays and controllers for training jet pilots.

Arrays, devices similar to microphones, can be used in arrays, which detect such underwater objects as submarines, and TV and radio antennas.

Already the Department of Electrical and Computer Engineering has been involved with the Department of Defence in array projects valued at $87,100. The latest contract issued by the Department in Canberra is for $47,500.

"We have developed a new technique for processing signals received from arrays even when conditions are bad and the signals encounter distortion," says Professor Tony Cantonl, Professor of Computer Engineering.

"To achieve greater resolution of the signals we have used computer technology to develop new algorithms. The process required very powerful computers."

Professor Cantonl's research team has included former Ph.D. students, Dr. M. H. Er, and Dr. L. C. Godora, and now includes Ph.D. Student Mr. I. Webster.

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Professor Cantonl and Mr. Webster with equipment used in their research.
University's 125-year old Tunnel

The Newcastle Wallsend Coal Company was formed in 1858 to mine for coal in the Borehole Seam "at the foot of the Boroondoom Hills" where Wallsend now is.

By the end of 1859 the site for the company's mine had been purchased from Alexander Brown and the new township had been laid out.

The Government Examiner of Mines pronounced the quality and thickness of the coal unsurpassed by any in the Newcastle coalfield. The seam was 8 feet 9 3/4 inches thick.

The company built a railway to connect the mine with the Great Northern Railway. This is the railway which previously ran along the front of the University. The rail line has been removed, but part of the route is clearly delineated by the cuttings and embankments that are alongside Rankin Drive.

Another memento of the railway, a stormwater tunnel, was recently discovered by members of the University's grounds maintenance staff near the Kintabia Child Care Centre. The tunnel is very interesting both for its age and its method of construction. Judged by the small quantity of sediment that has been deposited, it has provided an effective means of stormwater escaping for 125 years.

Research by the University NEWS revealed that the branch railway, of about two miles' length, was contracted by William Randle, who submitted a tender of 23,400 pounds.

The work commenced in mid-1859 and was completed by the end of 1860.

Coal from the "A" and "B" pits at Wallsend (the former later known as Ellemore Vale Pit) was delivered to the cranes in Newcastle Harbour and most of it was shipped to Sydney and Melbourne for gas production.

William Randle was an experienced British railway contractor who arrived in Sydney in 1852. Six years later he had a virtual monopoly on railway building in the Colony of New South Wales, having received the contracts for the Sydney - Parramatta, Liverpool and - Cambelltown lines and having joined William Wright in the Hexham - East Maitland railway contract.

However, it was claimed later in the NSW Legislative Assembly that some of Randle's financial success had been achieved by a practice common enough among British contractors. He allegedly held down costs of labour when wages were high by "scamping" work on the cuttings on the Parramatta Line - a disreputable trick of the contractor's trade. In 1862, Randle again tendered for work on the Government railways, but his tender was ignored. He later gained some work, but he became insolvent in September, 1863.

The Newcastle Wallsend Coal Company had handed Randle the contract for the Wallsend - Great Northern Railway after previously accepting John Favell's tender of 22,500 pounds. However, Favell refused to sign unless modifications were made in the tender.

Engineering interest in the stormwater tunnel near Kintabia, which is about 50 metres long, centres mainly on the brick-pitching. It was not possible in this era to use reinforced concrete. The arch at the top of the tunnel was formed in bricks and the tradesmen would have had to exercise a lot of care to achieve symmetry. Lastly, an embankment was formed over all the tunnel.

The photographs show the grounds maintenance supervisor, M. H. Presker, at the entrance to the old tunnel, and the inside of the tunnel taken with a flash.
Tax Law For Students

A new book about income tax law is the first written specifically for students at tertiary institutions.

Australian Income Tax Law, by Dr. Ian Wallschutzky, of the Department of Commerce, embodies 428 pages and has the following features:

- Is written to cater for the special needs of accounting students.
- Basic principles are discussed in depth and topics of little value to accounting students are not considered.
- Extracts from judgements of particular cases are shown together with an outline of the facts in the case enabling students to see clearly the applicability of the judgements.
- Each chapter is written as a progression of ideas which allows the students to gradually build on his or her knowledge.
- The book is well illustrated and worked examples are given. Suggested reading and exercises within each chapter will help students test their understanding of the chapters.

For many years students have prepared for examinations in income taxation using as their main reference one of the annually revised Tax Guides to assist in the interpretation of the Income Tax Assessment Act, according to Mr. B. T. Colditz writing in the Foreword.

No doubt the Tax Guides will continue to fulfil a valuable role for students and will also continue to provide a handy concise reference for practitioners.

However with the ever increasing and more complex flow of new legislation there has been a growing need for an explanatory work specifically designed to supplement a lecture course. Australian Income Tax Law is a brave and I believe successful attempt to bridge the gap.

Australian Income Tax Law has been published by John Wiley and Sons and sells for $34.95.

"The Making of Engineers"

A. K. Johnston's book The Making of Engineers In The Hunter Valley is a record, an analysis and a forward looking commentary on the education of professional engineers. It begins with a historical outline of engineering education as it developed in other parts of the world and proceeds to recount in detail happenings in the Hunter Region from the days of Newcastle Technical College to the University of Newcastle at present.

The Hunter Valley is a heavily industrialised area. While its engineering education has much in common with elsewhere, A. K. Johnston says, nevertheless it has its own distinctive and pace-setting features. These are fully described in the book. On the other hand, many comments would apply in varying degree to the rest of Australia and, indeed, the world at large.

The author reviews, and analyses, the shifts that have taken place in outlook and curriculum as far as engineering education is concerned from early beginnings to the present and then makes interesting suggestions about current trends and the future.

Included is a classified list, believed to be the only one in existence, of all recipients of professional engineering first qualifications obtained in Newcastle.

Copies of the book (priced $4) are available from the office of the Newcastle Division of the Institution of Engineers, Australia, or direct from the author, 11 Redhill Drive, Woodberry, 2322.
SPORf

The Oxbridge cricket team's tour of Australia kicks off on December 17 with a match against the University of Queensland. Next fixture for the Oxford/Cambridge Universities representatives will be on December 22 and 23 against the University of Newcastle.

The Oxbridge Team mainly consists of recipients of university blues who also play for their counties. The touring players are:


University's team will mainly consist of the First XI.

The match will be played at University Oval from 11 a.m. to 6 p.m. both days. Lunch will be between 1 p.m. and 1.40. A farewell dinner will be held at the Newcastle club after the close of play on December 23.

Subsequent to playing Newcastle University, Oxford will have fixtures against the Universities of N.S.W. Tasmania, Melbourne, Adelaide and Western Australia and depart for the U.K. on January 19.

A number of athletics contests are being held early next year which will involve members the University's Athletic Club.

These include the Dunn Shield, on January 18 and February 15, the Country Championships, from January 25 to 26, and Inter-Varsity in May. The venue for Inter-Varsity will be Melbourne University.

Any students interested in any of these events should contact the Secretary of the Club, Arthur Kingsland (Ext. 621).

First Cricket President

A Novocastrian, he was appointed to a lectureship in Metallurgy in the Faculty of Applied Science at Tighes Hill in January, 1955, coming from a two-year secondment with the National Physical Laboratory in Britain.

Mr. McLennan was a member of a small band of staff and students from the University College who played cricket and when it was decided to field teams in the NQCA competition in 1955 he was asked to be president of the club.

"The other Newcastle clubs put up a lot of opposition, as they thought we would not measure up to district cricket standards", he said. "However, we soon gained their approval, entering four teams in the competition and building a wicket at our

home ground, McDougall Field, with voluntary labour."
How best to understand the nature of scientific activity and the nature and status of scientific knowledge?

A new book co-edited by Professor C. A. Hooker, Professor of Philosophy, and Professor P. M. Churchland, of the University of California, San Diego, at La Jolla, focuses on the question, but, more particularly, on the debate between believers and agnostics.

Images of Science (University of Chicago Press) is a collection of critiques of the book, The Scientific Image, by Professor Bas van Fraassen, of Princeton University, published by Oxford University Press. Professor van Fraassen is Professor Hooker's "long-time friend and adversary."

The debate between believers and agnostics is influenced by God's invisibility to the senses and the fact that his works in nature do not come labelled with theological propositions.

This had led basically to three groups of attitudes toward the theological claims of religion: belief, agnosticism and atheism, according to Professor Hooker. The theoretical entities of modern science hide invisibly behind contemporary laboratory phenomena in a manner not dissimilar to that claimed for the relation between God and his natural creation.

In this analogy Professor Hooker says the statements of theoretical science, as opposed to laboratory practice, are to be likened to the statements of theoretical theology, as opposed to ethical practice. Ever since the early Greek Philosophers crystallised out the notion of systematic knowledge, scientia, a fierce debate has raged about the proper attitude to take to that knowledge.

Three opinions formed and have persisted, the rejection of all knowledge beyond immediate experience and practice as meaningless with the correlative insistence that anything of value appearing in that realm can be rewritten without loss in terms of experience and practice (atheism), the acceptance of the full range of science and philosophy (the old natural philosophy) as contributing insight into the true nature of reality (belief) and the admission that science and philosophy beyond experience and practice is instrumentally useful in the improvement of life and the satisfaction of curiosity combined with the insistence on suspending any belief as to its truth or insightfulness (agnosticism).

Professor Hooker says that in this debate realists are the believers, instrumentalists the agnostics and empiricists the atheists. He has long been a realist and sought to develop a realist theory on which knowledge was viewed as a specialisation of biological, evolved skills.

Professor van Fraassen had threatened since the early '70s to write an agnostic response to this view. In 1980 he did just that, publishing The Scientific Image. Professor Hooker has provided an essay in which he gives an overview of the major areas of difference between realists and agnostics and argue the major advantages of realism.

While at the height of its theoretical purity the debate can seem far removed from the practical problems of daily science, it is by no means true that it is irrelevant to the conduct of science and public affairs.

Cultural attitudes toward science down through the centuries have always been formed against a background of philosophical assumptions about the nature of knowledge and its purpose in human life.

Now that science/technology is at the cutting edge of a radical transformation of human life the consequences of cultural assumptions about the nature of knowledge and its relationship to practice (both scientific and ethical practice) can loom very large indeed both for scientists and for society at large.

These themes are the focus of a second research volume by Professor Hooker, A Realistic Theory of Science, to be published next year by the State University of New York Press.

He has been honoured by an invitation from SUNY Press to publish a collection of his essays, written over the past decade, developing a naturalistic theory of human knowledge. In the volume he also explores cultural consequences of different views of human knowledge, or the changing relationship between science, technology and society in the years ahead. The manuscript is now in the hands of SUNY Press.

Copies of a broad overview essay to appear in Professor Hooker's book are available from the Philosophy Department upon request.
NEWS BRIEFS

The Churchill Trust invites applications from Australians, of 18 years and over from all walks of life who wish to be considered for a Churchill Fellowship to undertake, during 1987, an overseas study project that will enhance their usefulness to the Australian community.

No prescribed qualifications are required, merit being the primary test whether based on past achievements or demonstrated ability for future achievement.

Fellowships are awarded annually to those who have already established themselves in their calling. They are not awarded to students or for basic study, not for the purpose of obtaining higher academic or formal qualifications.

Details may be obtained by sending a self-addressed stamped envelope to:

The Winston Churchill Memorial Trust, GPO Box 478, ACT 2601

Completed application forms and reports from three referees must be submitted by Friday 28 February 1986.

The Vice-Chancellor will be the guest speaker at the next Australia Day Dinner to be held at the Police Boys’ Club on January 25.

The dinner, being organised by the Newcastle Branch of the Australia Day Council, will be the culmination of a week of special activities, including a Champagne Breakfast at the Madison Motor Inn on January 20 sponsored by Newcastle Chamber of Commerce, running from 7 a.m. to 9 a.m.

Tickets for the Australia Day Dinner cost $16 and can be obtained from Dr. R. Amar (69 2305). Tickets for the Champagne Breakfast costing $10 can be obtained from Adele Thornhill (43 2086) and Harry Chambers (69 3536).

Advertisements

For Sale

1. Drawing Machine plus drawing board 990 x 710 and stand. $50.00.

2. Banana Lounges 2 of $10.00 each.

3. T.V. Table 600 x 300 - Teak finish with magazine rack under. $20.00.

4. Surfboard 6’-8” Morning Star single fin. $70.00.

Phone Richard - 54 9415 or Ext. 639.

Honda Civic 1977, 4 door, manual, yellow, Radio/cassette, August rego, $2800.

1979 BMW 3231, 2-door, iBerian red, sunroof, radio/cassette, excellent condition, $13,500.

Phone: 26 6142 (work) or 69 2436.


Viscount Caravan, full roof, pop top, 1980, 17 x 8, 5 berth, island D B, Front kitchen, new annexe, TV aerial, new regn., extras, excellent cond., $5500 o/n/o. Ph 43 3216.

Architect - designed home - passive solar design, in a quiet bushland setting in cul-de-sac on Dudley Bluff, close to beach. Tri-level, open plan with cathedral ceilings - 3 bedrooms, 2 bathrooms, study, eat-in kitchen, wine storage area, huge rumpus/entertainment room, landscaped ground. $140,000 o.n.o. Available Immediately - contact C. Cutting 49 8284.

PEUGEOT, Six seater family wagon, first registered January, 1978 with continued servicing according to the Peugeot manual by Peugeot garages, if offered for a negotiated sale. Contact John Giles, Maths (Ext. 349) Home (57 1466).

WANTED

Donations of vacuum cleaners, lounge chairs, floor rugs, outdoor chairs and other general household furnishings and equipment. For Bandon Grove residential education centre. We will collect. Contact Collins Community Programmes. Ext: 291.

HOUSE MINDER

Reliable female will mind house, feed and look after pets, water house plants and gardens, clean pool etc in return for small negotiable rent. 12 months period preferred.

Currently house-minding for lecturer of this University, references available upon his return in Jan., 1986. Ph 48 9275 A.H.

HOUSE TO RENT

New Lambton Heights, 6 to 12 months lease, suitable for 2 couples sharing, 5 bedrooms, 2 bathrooms, extensive separate sitting room areas, rent $180.00. Phone 52 8746, office 67 9953.

Typing Done

Maree Willis, of 5 May Street, Islington. Ph 62 1087.