

# PRENTICE CENTRE

## Annual Report 1994



THE UNIVERSITY OF QUEENSLAND





# Prentice Centre Annual Report 1994

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## From the Director...

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The Prentice Centre once again provided outstanding service to its clients during 1994 in an environment where tight budgets have demanded increased service and productivity. The total expenditure of \$10,960,585 was matched almost to the dollar by revenues. With an increase of staff from 92 in 1993 to 109 on average in 1996 this was an excellent financial result during such a challenging period.

The achievements of each of the business units speak for themselves in the following pages. Individually the efforts of the staff have been exemplary and in many cases has gone well beyond normal duties and the expectations of the University. The Director has expressed his appreciation to all staff for their efforts and support during this year.

*Graham Rees  
Deputy Director  
for AW Coulter*

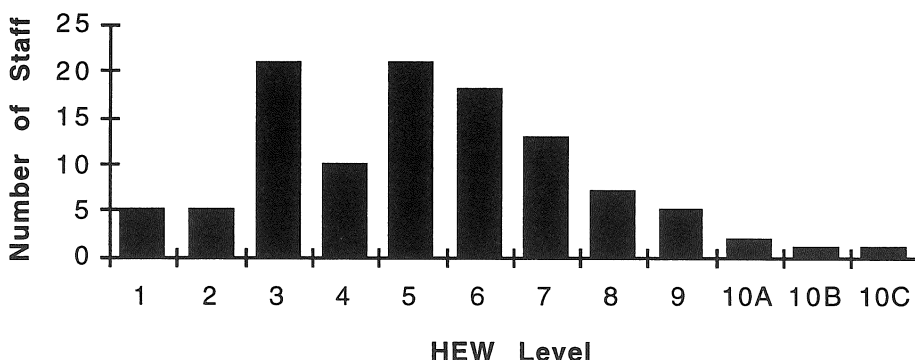
## Profile of Staff

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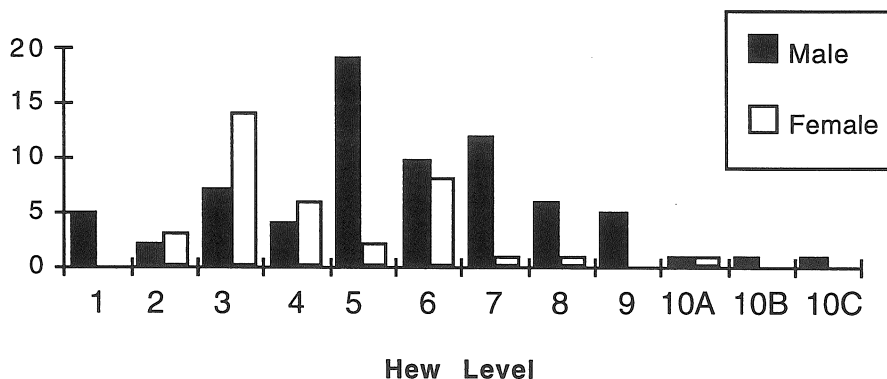
As at 31 December 1994 the Centre employed 109\* people. Prentice Centre staff are distributed according to the following graphs and tables.

\*This includes staff on all forms of leave without pay and worker's compensation, but excludes vacancies.

### Staff Distribution by HEW Level



### HEW Level Distribution by Gender

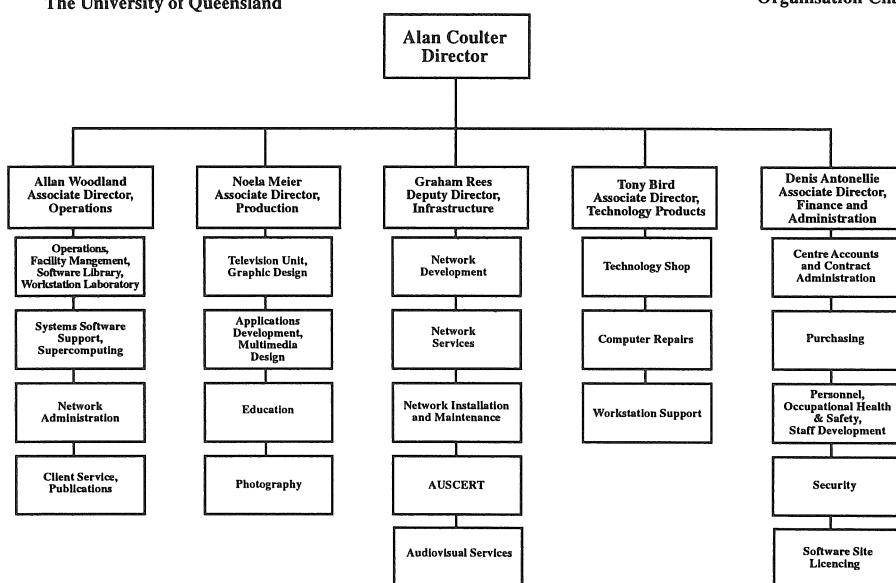




SECTION	NUMBER OF STAFF
<b>FINANCE AND ADMINISTRATION</b>	
Management	1
Accounts	7
Software Licensing	1
<b>EXECUTIVE MANAGEMENT</b>	2
<b>INFRASTRUCTURE</b>	
Management	1
Network Development	5
Network Services	12
Technical Services	11
AUSCERT	3
<b>OPERATIONS</b>	
Management	1
Client Service	6
Supercomputing	1
Network Administration	2
Operations Group	10
Systems Software	4
<b>PRODUCTION</b>	
Management	1
Applications Development	4
Education Services	2
Multimedia	1
Photography	9
Television Unit	6
<b>TECHNOLOGY PRODUCTS</b>	
Management	1
Technology Shop	7
Workstation Support	6
PC Repairs	5

Prentice Centre  
The University of Queensland

Organisation Chart



## Prentice at a Glance

The following table describes in part, the extent of Prentice Centre operations in quantitative terms.

<b>PRENTICE CENTRE AT A GLANCE</b>	<b>1994</b>	<b>1993</b>
Number of Staff	109	92
UQ Fund Allocation	\$2,492,305	\$2,145,488
Centre User Income	\$8,468,250	\$7,858,336
Total Expenditure	\$10,960,585	\$10,003,824
Technology Shop gross turnover	\$4,192,034	\$4,346,000
Number of courses provided	271	219
Total attendance at courses	1,688	1,770
Number of videos produced	131	55
Number of jobs processed through Photographic Unit	6,523	5,000
Departmental network installations	10	15
Number of replays through the CVRS	1,900	1,600
Personal computer repairs or upgrades	1,682	1,500
Slide reproductions/graphics through film recorder	7,300	6,500
Client service contacts	up to 250/ day	200/day
Facilities management contracts	4	3
UQ Network maintenance		
Daily traffic to AARNet:	7.9 Gigabytes	1.8 Gigabytes
Computers and workstations connected to network	5000 approx	4000 approx
High Performance Computing		
Cray YMP2D	660 megaflops	660 megaflops
MASPAR	250 megaflops	250 megaflops

## And Qualitatively Speaking...

- AUSCERT (previously SERT) was formalised as a single trusted point of contact within AARNet for security related incidents.
- Staff from Network Development and Network Services were involved in the organisation and running of QUESTNET '94, the annual networking conference held at the Toowoomba Campus of The University of Southern Queensland. About 320 attended what has become the major academic networking conference in the Australian calendar.
- The Director of the Prentice Centre is the chairman of the QUESTNET Management Committee.
- In conjunction with academic staff from the Department of Physiology and Pharmacology, the Television Unit received a certificate of educational merit from the British Medical Association Film and Video Competition for the production of "Ageing
- The Prentice Centre still leads the field in the paper recycling program, according to a representative of Unigreen.
- The Director of the Prentice Centre is the Deputy Director of the High Performance Computing Unit.

## Staff Training and Development

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- Staff from Network Services completed courses on Ethernet and TCP/IP Networking.
- The manager of Network Administration attended the Interop and Networld Conference in the USA
- A representative of the Workstation Support Group attended the Apple Worldwide Developers Conference held at San Jose and San Francisco.
- Prentice Staff participated in professional development courses offered by the Tertiary Education Institute.
- A producer from The Television Unit, on leave from the Centre for professional development, was employed by Griffith University on the production of "AV-TRIX", an interactive multimedia program for teaching film and media students.
- Two technicians from Audio Visual Services attended an AMX course on lecture theatre control systems
- The Associate Director, Operations, attended Supercomputing 94 in Washington DC and the CAUSE Conference in Orlando, Florida on the use and management of information technology in higher education. While in the USA he also visited IT facilities at Virginia Tech, Blacksburg, the University of North Carolina at Chapel Hill and Duke University.
- Four Prentice staff members attended the SMPTE (Society of Motion Picture and Engineers) Conference at Darling Harbour in Sydney. This is the premiere venue in Australia for previewing the latest developments in electronic media.

## Prentice Units in Brief

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### Client Service

Client Service provides the human interface to the computing and audiovisual technology offered by the Centre. It is an information service bureau managing online information files, distribution of publications such as FactSheets and Bulletins, course bookings, computer accounts, and access to network services. This Unit deals with approximately 250 enquiries/contacts per day.

Internet and/or dial in modem access for staff, students, and external clients continued to grow during 1994. As well as revalidating existing accounts, 2,700 new accounts were set up — almost double the number of 1993 accounts.

The Departmental Liaison Officer (DLO) scheme was launched in August. This scheme encourages departmental heads to nominate a member of their staff to act as a contact point with the Prentice Centre. The DLO streamlines communication with the Centre and improves the process of problem reporting and access to Prentice services. At the same time, departments are able to solve simple problems internally. The Prentice Centre supports DLOs by providing information and free access to Prentice courses. Regular meetings of DLOs are also organised to promote the development of self-help networks between departments. By the end of 1994, over half of the University departments were participating in the scheme.

Client Service compiles and maintains the variety of publications necessary to inform the University community of Prentice services and developments. As well as publishing service-specific FactSheets and regular Bulletins, the publications officer develops brochures, advertising material, and Centre reports.



## Technology Products

### ■ University Technology Shop

The University Technology Shop is a retail outlet providing the latest information technology products and services to the University community whilst at the same time promoting corporate objectives. In 1994 the shop grossed approximately \$4.2 million. Departmental purchases accounted for almost two thirds of total sales. Staff numbers were increased with the appointment of two assistant consultants.

In 1994 the Technology Shop negotiated an agreement with Apple Macintosh to offer student discount prices to members of convocation.

Plans are being developed for a new purpose built "emporium" style shop of 300 square metres on the north east corner of the Prentice Building. The new shop will include retail space, a repair centre, a demonstration and a presentation area, as well as the Prentice Centre Reception. All the Centre's services would be showcased in this one location.

### ■ Departmental Workstation Support

This group provides support services to departments, staff and students using DOS, Windows, OS/2, Macintosh and Unix workstations. Functions include:

- Installation and configuration of systems, networking, and applications software.
- Installation, maintenance, and management of departmental LANs.
- Response to phone and email enquiries and problem reports.
- General troubleshooting and problem solving.

Although the group provided free consultation and support for basic enquiries and problems, approximately half of the services were operated on a charged, cost recovery basis. Charged services included:

- LAN maintenance and facilities management agreements with the Development Office, Customs House, the Centre for Tropical Pest Management, and the Gatton College Departments of Animal Production, Food Science & Technology, and Business Studies.
- Management of site licensing and installation of PC and Macintosh networking software (Novell LAN Workplace for DOS/Windows, Netware, PCNFS, DEC Pathworks, Trumpet and MacTCP).
- Installation and support for Technology Shop software and equipment sales.

Following a review at the end of the year, management of software site licensing was transferred in 1995 to the Prentice Centre Finance and Administration section. LAN facilities management agreements also moved across to the Systems Software section.

### ■ Computer Repairs

Three technicians repair and upgrade DOS based systems and Macintosh personal computers. In 1994 over 1600 repairs or upgrades were carried out by this unit. This work generated a gross income of \$286,786.74. The Computer Repairs group also assisted in the installation of a PDP11 Emulator for the gold embossing machine in the Printery.

## Infrastructure

### ■ Network Services, Network Development, and Campus Data Network

These groups develop, install, maintain, and manage the ever growing campus computer networks and local area networks (LANs).

In 1994, fee paying external clients were accepted for connection to the network via Prentice. By November there were 446 external modem accounts and 11 permanent connections. A rapid growth in the number of free access accounts for staff and students necessitated the provision of a new host system. The host dingo was replicated and student accounts moved to new host, student.

The number of connected hosts continues to grow. At the beginning of 1994, there were approximately 3500 connected hosts on UQNet. By November, this figure had risen to nearly 5000.

Modem usage has been monitored and automatic limits applied in times of congestion to ensure fair access to the modem banks for all users. In late 1994 the number of active users who logged-in, in a given week, exceeded 900. The number of registered modem users reached 5522 as of end of November, a 250% increase from 1993. A further 23 lines were provisioned and became available early 1995. The modem bank has also been upgraded with installation of new modems.

Campus worldwide web (WWW) services were moved to dingo and prototype home pages developed for the University and the Prentice Centre. Network Development provided assistance and consultation to a number of other departments in establishing their own WWW servers.

Network Engineering continued support of facilities management for Chemical Engineering though this management transferred to other centre groups in 1995.

Departmental network upgrades and installations in 1994 included:

- Splitting of the Libraries' network into two separate systems.
- Re-installation of Chemical Engineering's Novell network.
- Connection of Faculty of Architecture's office to UQNet.
- Connection of the renovated Customs House to UQNet.
- Installation of network in Veterinary Science.
- Installation of a UTP network into AIS.
- Relocation of QMEC to the Mater Hospital.
- Recabling and relocation of QTAC.
- English Department Network.
- Networking of Food Studies at Gatton.
- Installation of Stage 1 of Gatton optical fibre network.
- UTP networking of JKMRC.

Major works expected in the near future include new networks for Commerce, Economics, and Management, and the completion of a network for the Humanities group. It is also planned to connect the colleges to UQNet via a fibre optic network.

During the last 4 months of 1994, the Campus Data Network group became responsible for the installation of Ethernet network interface cards in new LAN installations. Network maintenance and fault isolation was transferred from the CDN group to the Central Maintenance group.

The University of Queensland continued to be a focal point for the development of multicast services in Australia, providing both the multicast hub for Queensland and significant operational expertise for the development of the Australian multicast backbone.

Several students undertook industrial practice, work experience, and carried out projects under the supervision of Network Services and Network Development.

## ■ AUSCERT

AUSCERT (previously SERT) is an Incident Response Team (IRT) modelled on other national organisations such as CERT Coordination Centre in Pittsburgh USA and DFNCERT in Hamburg, Germany. Close liaisons with the Australian Federal Police, other national IRTs, and the Forum of Incident Response and Security Teams (FIRST) has led to international recognition of AUSCERT as a centre for expertise on network and computer security.

A contract with the AVCC in April 1994 formalised AUSCERT as the single trusted point of contact within AARNet for security related incidents.

AUSCERT staff became involved in assisting sites to recover from intrusions as well as analysing incident information to identify sites around the world that had been compromised. Technical consultation with the Australian Federal Police resulted in the execution of Search and Seizure Warrants on two alleged computer intruders.

AUSCERT provided technical assistance and coordination for over 168 computer security incidents, many involving more than one site or country. Six AUSCERT Security Advisories were issued during 1994 and over 25 bulletins on computer security were published for the AARNet community.

Conference Presentations by AUSCERT staff during 1994 included:

- Sixth Computer Security Incident Handling Workshop — Boston Mass.
- Australian UNIX Users Group
- Digital Equipment Computer Users Society Symposium
- QUESTnet Winter Workshop

## ■ Audiovisual Services

This unit is responsible for providing audiovisual services to the University. It maintains the audiovisual control systems in 76 programmed lecture theatres, including three lecture theatres at the Royal Brisbane Hospital and two at the Gatton Campus. Technical support for the Television Unit is also provided. Training courses on how to use the facilities in the programmed lecture theatres were run for academic staff in both semesters of 1994 and equipment demonstrations were conducted.

Service, maintenance, and upgrades of the audiovisual and control systems in programmed lecture theatres continued. This included the installation of several new data projectors, overhead projectors, 35mm slide projectors, and radio microphones. Replay VCRs in the CVRS were upgraded, as was the audio system in Mayne Hall.

Audiovisual Services supplied equipment and operators for several international conferences, both on and off campus. They also organised the PA system and a microwave link to the opening ceremony of the Customs House.



## Operations

### ■ Operations Group

The Operations group monitors and operates the University's mainframe computers. The Workstation Laboratory (10 PCs and 16 Macintosh computers), and Workstation Laboratory for People with a Disability (2 PCs, 1 Macintosh computer, image scanner, and Braille printer) are also maintained by Operations. During 1994 there were 16,000 visits, 14,000 hours of paid time, and 184,000 pages printed by laboratory users.

Other functions conducted by the Operations team included:

- Line printing (2.1 million pages)
- Laser printing (1,108,627 pages)
- Document scanning (5000 pages of text and images)
- Photocopying (802,423 images)
- Binding (1650 documents)
- Central Video Replay Service (1900 screenings)
- Data entry (860 hours)

Events of 1994 included:

- Purchase of LPS32 Laser Printer (to replace lps40).
- Introduction of Opscan 10 mark sense reader — It can scan 6000 sheets on both sides in one hour
  - Purchase of a new 486 computer to run the Opscan 10 and text scanner.
  - Upgrade of Workstation laboratory software to
    - Microsoft Word for Windows V6
    - Word Perfect for Windows V6
    - Quattro Pro for Windows V5
    - Quattro Pro for Dos V5
  - Upgrade of Workstation laboratory PC hardware to 8mb RAM.

### ■ Network Administration

Network Administration manages the network on a daily basis to ensure its viability and integrity.

This unit looks after the configuration management of all networks and routers within The University of Queensland network systems and also the management of the Queensland hub for AARNet. It is also responsible for the co-ordination of all network related fault rectification and the implementation of router based security filtering. Staff are on call from 7:00am to 11:00pm, 7 days a week to investigate critical network faults.

During 1994, major changes have occurred to the campus network with an ATM switch installed and the main routers upgraded.

### ■ Systems Software

The Systems Software group is responsible for maintaining system software — Unix and OpenVMS operating systems — on prentice central computers.

#### UNIX — Brolga and Goanna

Brolga is used for software development and evaluation, database development, research, communication and networking, file storage and retrieval, teaching and typesetting. In 1994 there were more than 300 users, both internal and external, and an average of 350 – 400 processes running.

Brolga is also used as the platform for computing courses and as a backup server for 12 other Unix hosts. The popular UQ gopher server maintained by this group operated at near 100% availability during the whole year.

Goanna is used as a database development platform and software testing and evaluation

## **OPENVMS — UQVAX**

In 1994 there were about 200 UQVAX clients representing 90 departments of the University or outside organisations. There were also 120 active Prentice accounts, 100 accounts for Prentice courses, and 350 free mail accounts.

As well as use for program development, Mail, and News, UQVAX was used for:

- Pathworks — 40 PCs boot from UQVAX, 20 applications disks, 560 MB
- SPSS — 14 clients,
- SAS — 4 clients,
- Oracle — 3 clients, 13 Prentice users
- Learning Management Systems (LMS) in Physics and Botany
- External Studies — 14 accounts, 85 MB of disk space
- Typesetting — access from brolga and Macintosh computers
- Laser printing— laboratory, and other PC, Macintosh and Unix
- Accounting; printing and typesetting charging, managing accounts
- Course booking system
- Central Video Replay System bookings
- Software library records; sources on disk 2,140,000 blocks 1,070 MB
- HotLine Problem reporting system

In 1994 the Systems Software Group provided advice, systems planning and installation, systems support, problem solving, and training in new software packages for Prentice and other departments.

## **■ Facilities Management**

Facilities Management provides computing support for University departments and external clients. Its main area of responsibility is Departmental Local Area Networks (LANs) used by academic and administrative staff and by students in computer laboratories.

During 1994 this section continued to service two major departments and negotiated an arrangement with a third. They also serviced some small facilities. Regular on-site visits and remote monitoring of computing services were carried out.

With the continued growth in popularity of client/server computing solutions to business problems, these services should be increasingly in demand.

## **■ High Performance Computing Unit**

The Cray Y-MP2D supercomputer (yabby), installed in August 1993, sustained constant use throughout the year while the MASPAP MP-1204 (pelican) was only lightly utilised. Access to James Cook University's Cray system was arranged in exchange for JCU's use of yabby. The JCU Cray, although slower, has a larger memory. This meant some larger jobs were able to be run. The main users of yabby in 1994 were Chemistry, Engineering Departments, Physics, Mathematics, and QPDI/Mathematics combined projects.

Installation and acceptance of the IBM SP2 at the Queensland Parallel Supercomputing Facility (a combined project with Queensland universities) began mid year. Wilfred Brimblecombe was on the acceptance committee.

The High Performance Computing Unit held a two day 'hands-on' Vector Computer Workshop attended by 25-30 people. They also organised a seminar on Earthquakes with speaker, Peter Mora, from QUAKES.

In December, tenders were called for new high performance computing facilities to replace the Cray Y-MP and MASPAP computers which were decommissioned in 1995.

## Production Services

### ■ Applications Development

The Applications Development Unit continued to develop and maintain a wide range of information systems for University departments throughout 1994.

The QUIZ Computer Managed Learning system for the Biochemistry Department was completed. The Oracle client/server system was delivered in December for acceptance testing. Evaluation and refinement in a small-scale "live" environment will be carried out in 1995.

A new External Studies Management system was designed for the Faculty of Education and the Gatton campus External Studies section. This system, developed using the Progress 4GL and RDBMS, will organise the distribution of course materials and tracking of submitted student assignments.

Software for Business Services was developed to manage batch invoice data entry and authorization of payments through the Expenditure section;

Existing systems were enhanced and support provided for the Convocation Roll, Equine Blood Typing, Cattle Blood Typing, Microbiology Culture Collection, Academy, and PC Lab systems.

Staff also had a range of consulting and advisory roles. They consulted with departments on the preparation of submissions for CAUT and Quality funding. (Anatomical Sciences and Geographical Sciences were successful in attracting funding for 1995.) They also assisted with the development of the AIS Business Continuity Plan

The Applications Development Unit had membership on the advisory committee for the development of the TIARA timetabling system and the advisory committee to oversee planning for the A/V Library Multimedia Facility;

The Prentice Centre also established a new CD-ROM production service within the AD Unit in September 1994. Based on the Yamaha CDR100 quad-speed CD-ROM recorder, the service is designed to transfer data from PC, Macintosh, Unix, Vax/VMS, and other computing platforms, to CD-ROM.

### ■ Education Services

Over 250 computing courses covering more than 50 different topics attracted almost 1700 enrolments during 1994. These courses varied in length from 3 hours to 15 hours.

Most of the courses are offered via the Prentice Centre's advertised course schedules, though the demand for tailored courses to meet specific demands of departments continued to grow. In some instances requests for such courses were met by scheduling evening sessions.

Cost of providing and updating both hardware and software forced the decision to introduce charging for all courses during the year, albeit at favourable rates compared to external providers.

Last year the PC equipment in Course Room 2 was upgraded to allow the introduction of Windows-based courses. This year attention was given to providing better Macintosh facilities in Course Room 1. This involved replacing existing machines with LC575s with Ethernet cabling. Some courses, which had been suspended until satisfactory performance could be guaranteed, were then resumed.

A new subject, Desktop Editing, was introduced to the educational television course program.



## ■ Television Unit

This unit produces teaching, research, promotional, and archival videos for the University. In addition a graphic design service and educational courses in video production and media skills are provided.

Now established in the new production studio, the Unit produced 131 video programs in 1994, dubbing orders exceeded 200, and 31 video courses were scheduled

Productions included:

- Studio recordings of Australian Sports Medicine Federation Continuing Education lecture series
- Recording and editing of proceedings of Pan Pacific Conference —Post Graduate Research, Supervision, and Training — for Tertiary Education Institute
- Closed circuit video transmission for Ninth Australasian Society for Ultrasound in Medicine Vascular Ultrasound Workshop — three camera, live switch of patient, practitioner, and ultrasound output
- Recording of graduation ceremonies at St. Lucia and Gatton Campus in May, August, and December
- Broadcast via a microwave link for the opening of Customs House on 23rd October. The Television Unit videoed the Governor's journey by boat from Dockside to the Customs House and the subsequent ceremony which were both transmitted to the attending guests.

Lady Edwards officially opened the new Television Production Facility on 2nd June, following which the Television Unit hosted an open day for the University community.

A Desktop Video Editing system was acquired primarily for teaching and these courses have been popular. Non-linear editing systems for production were investigated.

The Television Unit reached an agreement to manage the Journalism Department production facilities and teach journalism students video production skills in 1995.

## ■ General Photographic Unit

This unit provides scientific and technical services, photo instrumentation and general photography to the University community. External industry is also serviced through GOBIS (Government Information Business Service).

Throughout the year 6523 jobs were carried out. This figure does not include colour copies, passports photographs, laminating, and miscellaneous sundries which are not recorded by requisition.

Approximately 24,881 student, staff, and external identification photographs were processed during 1994. 7,785 graduation portraits were taken at 17 ceremonies. Approximately 12,000 prints were made from 2,493 of these negatives.

## ■ Multimedia Design Unit

This unit's main role is to provide a computer slide creation and imaging service. Other services include enhancement and manipulation of images for publications and sections of presentations. A highly personalised service is provided resulting in quality graphics to enhance conference and teaching presentations. These services were used by 356 clients from 64 sections, departments, and institutions in 1994. Computer generated slide presentations for local and international conferences were prepared for 23 clients and a total of 7,300 35mm slides were imaged through the film recorder. Popular presentation packages were introduced to more staff and students resulting in an increase in customers for 1994.

## Finance and Administration

The Finance and Administration section manages and advises on:

- Funding
- Accounts
- Purchases
- Payments
- Billing
- Stores
- Personnel
- Staff development
- Occupational Health & Safety
- Security
- Vehicle control
- Space administration

In 1994 this section took over the role of software site licence provider, employing an additional staff member as a Software and Contracts Officer (SCO) to service this area. At the end of 1994, the control of some site licences was still to be passed over to the SCO but it is expected this will happen in early 1995.

During 1994 the staff of Finance and Administration performed the following.

- processed 3,550 orders
- processed more than 4,700 invoices for payment
- produced billing of 2,904 invoices for services
- processed more than 20,000 Requisitions for Interdepartmental Services
- Banked \$1,466,643 cash

## Management Advisory Committee

The Management Advisory Committee of the Prentice Centre meets weekly to discuss issues involved in the Centre. The members are:

Alan Coulter (Chair)	Director
Graham Rees	Deputy Director
Allan Woodland	Associate Director Operations
Noela Meier	Associate Director Production Services
Tony Bird	Associate Director Marketing and Technology
Denis Antonellie	Associate Director Finance and Administration
Kym Hosking	Senior Television Producer









