

43/1968

THE AUSTRALIAN NATIONAL UNIVERSITY
FACULTY OF ARTS, S.G.S.
DEPARTMENT OF APPLIED MATHEMATICS

ANNUAL REPORT - 1967

Staff

Prof. A. Brown
Mr J.E. Drummond (Reader)
Dr J.C. Burns (Senior Lecturer: Jan - June
Reader: July - December)
Mr S.M.A. Meggitt (Senior Lecturer)
Mr H.F. Petersons (Lecturer)
Mr R.L. Agacy (Temp. Lecturer: Jan - May
Senior Tutor: June - Dec.)
Mr D.B. Shield (Tutor)
Mrs B. Hawkins (Secretary).

In addition to the full-time staff listed above,
Mr B.M. Fitzpatrick acted as a part-time tutor in Applied
Mathematics I.

During the year the lecturing staff was brought to full
strength by the appointment of Mr H.F. Petersons who joined us
toward the end of May. Pending Mr Petersons' arrival, Mr Agacy
acted as a Temporary Lecturer.

Dr Burns, whose research work on generalized axi-symmetric
potential theory has brought him wide recognition, was promoted
to Reader in July. During 1968 he will be on study leave,
mainly at the Institute for Fluid Dynamics and Applied Mathe-
matics, University of Maryland, although he plans to spend the
last four months of his leave with Professor Lighthill at
Imperial College.

Mr Meggitt returned from his study leave at Cambridge and
resumed lecturing during third term.

We were unable to fill the post of Research Assistant,
despite two offers of appointment to suitably-qualified people.
In one case, negotiations broke down because the conditions of
appointment did not cover the applicant's fare from Britain
and his application for a passage as an assisted migrant was
unsuccessful.

Courses, Enrolments and Examination Results.

We had been led to expect a substantial reduction in
first-year enrolments, because of the change from a five-year
course to a six-year course in the N.S.W. secondary schools;
instead, our first-year enrolment increased appreciably. The
enrolments in the later years were about the same as in 1966.
Details of the enrolments and examination results follow (at
head of next page).

Unit	Enrolments	Examination Results.			
		Number of Candidates	Passed	Failed	Deferred
App. Maths I	67	58 (15)	43	15	-
App. Maths II	31	30 (11)	25	4	1
App. Maths III	24	22 (4)	18	4	-
App. Maths IV	1	1 (1)	1	-	-

The number of candidates who took the honours course and sat the honours examination in each unit is given in brackets after the total number of candidates. Our fourth-year student completed an exceptionally good First in his honours examinations.

Development of Department.

No substantial changes in our research interests or in the organisation of our courses occurred in 1967. Some re-planning of courses may be necessary over the next three years, to allow for the mid-year interruption of teaching when the Science Faculty introduces its semester system. We fear this will have an adverse effect on our students.

Members of the department attended two mathematics conferences in Canberra during the year. The meeting of the Australian Mathematical Society's Summer Research Institute in January and February was devoted primarily to theoretical physics and applied mathematics and it attracted by far the largest membership of any S.R.I. so far. The quality of the lectures and the interest shown by the participants made it an encouraging experience.

During the May vacation, the Australian Mathematical Society held its annual meeting in Canberra and about 140 mathematicians attended. The organisation of the meeting devolved mainly on the S.G.S. departments, whose staffs co-operated to good purpose. It would be difficult to name all of those who helped but I think it is appropriate to mention in particular Dr M.A. Ward, who worked energetically and resourcefully as secretary of the organising committee.

In concluding this Annual Report, I should like to put on record my appreciation of the helpfulness shown by Professor Scales during his two years as Dean of the Faculty of Arts.

A. Brown

January 11, 1968.

List of Publications during 1967

- *Andrew, A.L., Higher Modes of Non-radial Oscillations of Stars by Variational Methods. The Australian Journal of Physics, Vol. 20, No. 4 pages 363-368. 1967
- Brown, A., The S.H.M. Equation: An alternative treatment. The Australian Mathematics Teacher, Vol. 23, No. 1 pages 14-16. 1967
- Burns, J.C., The iterated equation of generalized axially symmetric potential theory:
 I Particular solutions,
 II General solutions of Weinstein's type,
 III Conjugate general solutions.
The Journal of the Australian Mathematical Society, Vol. 7 - Part 3 pages 263-276, 277-289, 290-300. 1967
- Burns, J.C. and [†]Parkes, T., Peristaltic motion. Journal of Fluid Mechanics, Vol. 29 - Part 4 pages 731-743. 1967
- [†]Byrne, G.F., Drummond, J.E. and [†]Rose, C.W., A sensor for water flux in soil: I Point Source Instrument. Water Resources Research, Vol. 3 - Part 4 pages 1073-1078. 1967
- Drummond, J.E., An exploded disc. Mathematical Gazette, Vol. 51, pages 129-134. 1967