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The Australian Physicist

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Peer evaluation - Dodds?
President’s Column

The Council’s Annual Report appears in this issue. It shows that the trend towards deeper involvement in science policy issues has continued during 1976. Another development has been the increased use of Council committees to deal with particular fields of Institute activity at a national level; in addition to the Membership and Science Policy Committees, committees on Employment and on Education were set up during the year.

There is a great deal to be said for these permanent committees, because they can develop a degree of expertise which an ad hoc group is unable to do. The Membership Committee, which is as old as the Institute itself, now has precise guidelines and procedures by which it can deal expeditiously with all but the most controversial situations. The Science Policy Committee, with only two years’ experience, is still working towards a satisfactory modus operandi, but is getting better all the time. The newer committees could not yet be said to be working effectively, but no doubt they soon will.

Other highlights of the year were the move of The Australian Physicist to Adelaide, the Second National Congress at the University of New South Wales and the decision to move the Institute office to Sydney after ten years in Melbourne. I have discussed these matters previously in this column.

A most significant statement in the Report, in the Membership section, is that membership is now static. Wastage from various causes now equals new enrolments. This is a fact, not only for the Institute, but for many other organizations in our society; it is very nearly so for society itself (ZPG). We who have lived most of our lives in an environment where growth seemed continuous, automatic and assured are finding it a little difficult to adjust.

At one stage I worked with a scientific instrument company, which had recorded phenomenal expansion in the two decades following the Second World War. One of our bright lads extrapolated the growth curve and announced that by some year after 2000 AD the land surface of the Earth would be covered 20 feet deep by our company’s instruments! We all realize that exponential growth cannot continue indefinitely, but we usually want it to continue at least for the time being. Well for many of us the recent years have been a new and sobering experience, as so many of the growth curves have come to a juddering halt. The Institute is no exception.

The Annual Report will be presented by the retiring Executive at the Annual General Meeting, to be held at Wagga Wagga on 10 February 1977, during the Solid State Physics Meeting being held there at the time.

During the Council meeting in October, the ACT Branch Chairman, Peter Tracey, spoke feelingly on behalf of country members who were unable to participate in Branch activities, and he mentioned particularly the small number of ACT Branch members (four, I think) at Wagga Wagga. As a result the Council, clearly responsive to the needs of neglected minorities, voted that both the Solid State Meeting and the Annual General Meeting be held at Wagga Wagga.

James Campbell

ROYAL SOCIETY AWARD
Dr. Alan Walsh FRS, FAA
Assistant Chief CSIRO Division of Chemical Physics
Melbourne

At its Anniversary Meeting held on Tuesday 30 November, the Royal Society of London awarded Dr Alan Walsh in person a Royal Medal in recognition of his distinguished contributions to emission and infra-red spectroscopy and of his originination of the atomic absorption method of quantitative analysis.

The Australian Institute of Physics is delighted that Alan Walsh, a former President (1966-1967) has received this award. Alan Walsh was elected to the Fellowship of the Royal Society of London in 1968. Amongst the many other distinctions that he has received are the Britannica Award for Science (1966), election as Foreign Member, Royal Academy of Sciences, Stockholm and the Tobern Bergman Medal of the Swedish Chemical Society.
Council Education Committee

This recently established committee has now reached full membership and is actively preparing for action. Members have been drawn from most states of Australia, and from a wide range of educational institutions.

The committee has as its terms of reference “to promote and encourage education and training in the science of physics and kindred subjects . . .”

At its first meeting, held during the Sydney Congress, the committee discussed possible activities for achieving these terms of reference. The following list was finally adopted by the committee.

(a) To recommend to the council of the AIP policies on physics education for adoption by the Institute and to propagate these policies.
   It was felt that this should be the major activity of the committee.

(b) To obtain, collate and interpret statistics on physics education at all levels.

(c) To encourage innovation in the evaluation and improvement of physics education by such means as
   (i) obtaining and publicising sources of financial support for experimentation in instruction by physicists.
   (ii) providing a centralized catalogue of physics learning materials (a committee of the Academy of Science is believed also to be doing this).
   (iii) establishing an information newsletter for wide distribution to teachers of physics at all levels (perhaps through the Australian Physicist or the HERDSA newsletter).

(d) To organize national and international conferences on aspects of physics education (the SA Branch is believed to be interested in running Pacific area conferences).

(e) To establish and maintain contact with similar organizations throughout the world.

(f) To provide a co-ordinating function for the educational activities of the Branches and to promote physics education at the national level.

Readers of the Australian Physicist are earnestly invited to comment to the committee on any of these activities, or to suggest further activities for consideration. The Education Committee is particularly concerned to initiate open discussion of possible AIP policies on physics education in Australia, and would welcome submissions and comments in this area.

With the third Congress (January 1979, Perth) still two years away, the Education committee wishes to suggest to members that they consider starting now on a two-year evaluation of any educational activity which interests them. The results of such an evaluation could then be presented at the Perth Congress.

—Paul E. Clark,
Hon. Secretary, Education Committee

Council Education Committee Members

Professor B. Mainsbridge (Chairman)
School of Mathematical and Physical Sciences,
Murdoch University.

Dr P. E. Clark (Secretary)
Department of Physics, Monash University.

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of Advanced Education.

Dr G. C. Fletcher
School of Maths and Physics, Macquarie University.

Dr Barbara Possingham
10 River Street, Marden, SA 5070.

AIP President
AIP Hon. Secretary  ex officio
AIP Hon. Treasurer

Obituary

The untimely death on 19 August of Miss Elsie York, Senior Lecturer in Physics, is deeply regretted by all who knew her. She had borne the burden of a long illness with courage and forbearance, still remaining active in the Physics Department through much of Second Term.

After her graduation from this University in 1941, Miss York was employed by the National Standards Laboratory in Sydney for several years. Returning to Western Australia in 1947, she combined a part-time University appointment with secondary school teaching. From 1958, when she joined the full-time staff, she was responsible for undergraduate lectures and laboratory classes in numerous courses and earned the well deserved respect of the large body of students who benefited over the years from her tuition.

Elsie could always be relied upon for helpful information and advice on the many facets of the first year curriculum, from text books to timetables. She herself willingly and efficiently undertook a large share of the organisation as well as the teaching of first year courses. Her nature was an inspiration to us all, and her presence is sadly missed by her colleagues in the Physics Department.

Letters

SIR,

Physicists behind bars

Physicists tend to be independent thinkers and a number of our colleagues overseas have not hesitated expressing opinions not favoured by their governments, in spite of the danger to themselves.

Among physicists listed by Amnesty International as prisoners of conscience, i.e. people in gaol for their views and not sentenced for any crime of violence, are Dr Reger Posadas of the University of the Philippines and Dr Andrei Tverdokhlebov from Moscow.

Dr Posadas will be known to theoretical physicists for his work on singularities in general relativity. He was arrested in January 1976 and has not been charged.

A. Tverdokhlebov, arrested in April 1975, had been active in the human rights movement in the USSR.

I suggest that readers concerned about the fate of these two men inform the Ambassadors of the Philippines and of the USSR of their concern.

P. V. A. Grossman, FAIP

SIR,

Might I draw your attention to the paragraph “Problems in the Department of Science”, page 166, The Australian Physicist October 1976.

Contrary to your report, no committee has been established “to centralise management services within the Department”. However, a committee has been established to study a proposal that management services be integrated within the Department. The several distinctions between implementation of a decision to centralise and study of a proposal to integrate should be obvious.

The paragraph’s second sentence has been interpreted by some readers to imply a departmental motivation to take steps to make it difficult to implement recommendations by the Science Task Force which on the face of it are assumed by you to be self-evidently desirable. Such interpretation is worthy of examination. If the Task Force recommendations were to be accepted by the Government, the steps envisaged by your article as making implementation difficult, would be nugatory. You may be assured that there is neither action nor motivation to the end attributed.

The further implication of the paragraph’s second sentence that, with centralisation (sic) of management services, “the main scientific wings of the Department will be under the direct control of the Central Office in Canberra”, reflects ignorance of how management works at present and of what integration of services would entail.

You might care to reflect on the more general applicability of the thought that one does not achieve much in science if one begins by getting the facts wrong. Nor is there distinction to be gained by purveying the mistakes and misinterpretations of others.

I recognise that cases of irresponsible reporting in your journal are rare. Nevertheless instances of the sort I have drawn to notice need not occur at all.

J. P. Lonergan, MAIP.
Policy Division,
Department of Science

People and Institutions

Department of Science to Remain

The Minister for Science, Senator Webster, has given an assurance — which he said was backed up by the personal assurance of the Prime Minister — that the Department of Science will continue in existence.

The Minister confirmed the Department’s future at specially convened meetings of staff at Central Office on 12 October and at the Bureau of Meteorology Head Office on 15 October.

He said Science was advanced by the existence of the Department and he had been greatly concerned by speculation that the Department and the position of Minister for Science would be abolished (speculation sparked initially by the recommendation to this effect by the Philips Science Task Force of the Royal Commission on Australian Government Administration).

Senator Webster pointed out that in the new administrative arrangements announced on 5 October, the Government not only retained the Department but also increased its responsibilities (the Secretariat of the Government Paint Committee will be transferred to the Department from the Department of Defence).

The Minister later told Science News that while the Department will continue, final administrative arrangements have yet to be announced. — Science News, Nov. 1976.

ANU 14UD Accelerator

Professor Sir Ernest Titterton, Department of Nuclear Physics, ANU, will be a guest of the Weizmann Institute, Rehovot, Israel, for the official inauguration of the world’s second 14UD accelerator now being completed there. The 14UD accelerator at the ANU was the first machine of its type in the world. It was opened officially on 1 September 1973 and Sir Ernest says that it has fulfilled its design expectations.

The Canberra department was able to give considerable help to the group at the Weizmann Institute and the chief engineering consultant of the Rehovot project visited Canberra for two weeks.

The ANU group, owing to its early entry into work in the Nuclear Structure field with the 14UD pelletron accelerator expects to be able to retain its leading position for some years. — ANU Reporter, 22 October, 1976.

Institution of Engineers, Australia — Task Force on Energy

A Task Force on Energy has been set up by the Institution with twelve working parties each concerned with a particular area of study. The general report should be published in April-May 1977, and copies will be sent to the Federal Government. Of particular interest to physicists are those working parties considering: “Long Term Nuclear Programme for Australia”, “Solar Energy as Heat and for Fuel”, “Review of Energy Research and Development in Australia”.

The Chairman of the Task Force is Professor L. A. Enderbee of Monash University who calls for a “coordinated national energy policy”. — Engineers Australia, November 5, 1976.
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MODEL 144 or 144P 5mW
- Rectangular package
- Beam position within 2.5 mm of center of output aperture

MODEL 146 or 146P 4mW
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- Cylindrical package
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Second National Conference in Retrospect

PRE-CONGRESS ORGANIZATION
The Organizing Committee met approximately monthly for some 18 months prior to the Congress. This length of time was essential.

Considerable doubt grew, peaking perhaps 6 months before Congress, after a call had been made for first registrations, that numbers would fall far short of the First Congress, and that the exhibition would fail. The strong support given in the Australian Physicist the month before Congress, with a list of titles and authors of papers, probably gave the required stimulus to enrolments. It was also a big advantage meeting in Sydney, as so many could attend with minimal travel costs. In any event, the final total registration was 232, plus 40 registrants for the simultaneous 16th Annual Conference of Physicians and Engineers in Medicine and Biology. This slightly exceeded the numbers at the First Congress.

A Social Committee of wives of Committee members was activated about 8 months before Congress and was invaluable in all details of the Social Programme. The only flaw which was noticed was the programming of the Opera House tour for the opening morning. People arrived to register, including this tour, to be told that they would have to leave their motels shortly after 9.00 am that morning. The opening reception, Harbour cruise and Argyle Cellars dinner were all well attended and successful.

The organizer of the exhibition, Dr G. Bowden, put in great efforts to obtain adequate numbers. It seems at the present time that such effort is necessary, and fortunately it ultimately paid off both in interest shown and in a significant profit.

CONGRESS ORGANIZATION
(i) Poster Sessions.
There were considerable doubts as to how these would go prior to the Congress, and several authors had to be persuaded to give their paper as a poster display. The use of posters largely obviates the need for simultaneous sessions, and allows interested attendees to read a paper at their leisure and, if desired, have a significant talk with the author. A number of authors were probably unaware, until they saw other posters, how much the impact could be enhanced by the use of colour, photographs etc., and by the elimination of too much detail. The poster is really an enlarged abstract.

(ii) Siting of sections of the Congress
As all those attending quickly realized, including exhibiting Companies, it was a great asset to require the people wishing to have coffee or visiting show at the registration desk, to pass through the exhibition area and to be immediately adjacent to the poster session rooms. Such siting is vital to the success of the Congress. The coffee vending machines were a great advantage over the more traditional coffee queues served at a counter. It meant that coffee and tea could be taken at any time, and many small groups were seen having coffee while talking to the exhibitors or the authors of poster papers.

(iii) General Symposia.
The Science Problems and Policy in Physics Symposia were on the whole favourably commented on. Their success depended on the selection of able opening speakers. Such speakers require to be sound both in their choice of material and in their method of delivery. At the same time, it was also commented on by a number of people that the views of the younger attendees were perhaps not brought to the fore as well as they could have been.

(iv) Joint meetings.
The arrangement of having the 16th Annual Conference of Physicians and Engineers in Medicine and Biology completely integrated with the AIP worked very well. A representative was on the Organizing Committee, they had their own coloured section in the Abstract Book and they collected their own funds. Nevertheless it is thought that some of their members registered directly with the Physics Congress, and there was an encouraging interchange of attendance at papers between the two groups.

(v) In General.
The time keeping by the various session chairmen was good. The Congress needs this to be successful, in that people should be able to go to a room at the time advertised and find the desired paper about to start. If a speaker does not present himself, it is essential that the programme not be moved forward, but that the session be placed in recess for the 20 minutes so that subsequent papers do not get out of step.

QUESTIONNAIRE
During Congress, Professor Julian Goldsmith organized and distributed a questionnaire covering many facets of the meeting. Sixty-two replies were received. Although this is a fairly small sample the replies were useful, and future Congresses could well make the questionnaire a built-in part of the meeting, so that those attending would know that their answers would help direct the shape of the next Congress.

It emerged very positively that people were happy with a University as a Congress venue, that both invited and contributed papers were about right in length, and that the invited papers were about right in depth, that poster sessions were favoured, and that the opening reception was worthwhile. This sample of attendees therefore seemed reasonably happy with Congress organization and participant performance.

There were also a considerable number of helpful individual comments. These will be passed to the Perth organizers of the Third Congress.

C. Elyett,
Chairman, Second AIP Congress
Congress
Science Policy Making and Parliament
Ann Moyal, Faculty of Humanities and Social Studies, N.S.W.I.T.

At the National Congress Symposium on Science Policy held on Tuesday 24 August under the Chairmanship of Dr James Campbell, three speakers, Professor Sol Encel, School of Sociology, University of NSW and former ASTEC member; Dr Telford Conlon, School of Life Sciences, NSW Institute of Technology and former private secretary to Mr Morrison, Minister for Science; and Dr Roger Bird, Australian Atomic Energy Commission and member of AIP Science Policy Committee, directed Congress' attention to the desirability or lack of desirability of a Department of Science; to problems of the machinery of scientific advice to Cabinet and the Ministries; cuts in national spending on science; and to particular aspects of science policy studied by the Science Policy Committee of the AIP. The following paper by the fourth speaker, Ann Moyal, School of Humanities and Social Sciences, NSW Institute of Technology, focuses on a more democratic aspect of science policy making and the part physicists and other scientists might play in bringing their expertise to inform and serve the Parliament.

Previous speakers have dealt with the administrative high advisory machinery aspects of science and government and the role this Institute has begun to play in tending opinion formally to Government. We have been looking at the Executive branch of Government and how scientific advice is, or can be, injected into decision making at the level of the Ministries, the Prime Minister and the Cabinet.

I should like to look at a more democratic aspect of science policy making and in particular at the role of the Parliament and its members in their critical function of appraising and ventilating policy and in providing an informed forum for the debate of national scientific and technological goals.

As a historian studying some major scientific institutions in Australia, my evidence suggests that important scientific policy is made, if not by "technocrats in long white coats" in President Eisenhower's phrase; but by persuasive heads of statutory authorities, in the privacy of Ministerial rooms, and with a minimum opportunity for ventilation and scrutiny in the Parliament. In investigating the making of nuclear policy in Australia, it appeared that the Parliamentary Opposition laboured under intense difficulties in extracting information from the relevant Minister on such matters as evolving plans for a nuclear reactor, the competing technologies being considered, the ecological ramifications of the planning, and the costs and manpower involved. Persistent questioning by one or two Labor Opposition members, who relied on their private scientific contacts, was brushed aside until the Minister gave his final exposition of a policy already committed and determined by the Executive. The framing of important nuclear policy in Australia then has rightly been characterized as "policy by fait accompli".

This technique of closed executive decision making has, indeed, been publicly defended by one head of a statutory authority, the former Chairman of the Atomic Energy Commission, Sir Philip Baxter, who publicly expressed the view that, with the continuing steam of technological problems facing government and society, only a small proportion of the population and politicians are capable of understanding the complex issues involved.

"The experts" he declared, "must in the end be trusted. To submit such matters to the ballot box... or to the politician who has a divine conviction that he understands technical problems, can only lead to trouble and possible disaster."

So much for the nuclear area! But the problem has been recognized in other places. As early as 1965, the then Liberal Minister for Robertson, Mr. Bridges-Maxwell, drew attention to the fact that, while the Annual Report of the CSIRO was presented to the Parliament with a few explanatory notes on the estimates, such information was "only half the story". It did not, for example, he said, expose the major questions of whether the country was spending enough or too much on such research or what were the crucial problems that the CSIRO was trying to solve. "It is disturbing" Bridges-Maxwell told the House, "that there should be such a wide disparity between the information upon which Cabinet bases its decision and the information available to private members upon which to ratify, amend, or discuss these decisions."

While this imbalance between the Executive and Parliament operates in many fields, it is particularly crucial in the area of science and technology where political decisions have such long term and expensive consequences for national and social development, and where conflicting values and judgements are relevant components of the scientific debate. There is, hence, in my view, a clear need for dispersing the monopoly of information and advice lodged in the Executive branch and for providing the means for ensuring that all informed discussion is made possible in Parliament at a stage when policy is still fluid and being shaped.

How can this be achieved? In most countries the proportion of scientifically trained parliamentarians is distinctly small. In Australia— as in Britain and the U.S.A. — the proportion is in the region of 4-5%. There are presently approximately 10 members of the combined Commonwealth House of Representatives and Senate (out of a total of 189) with some degree in some aspect of science and engineering, of which there is some emphasis on agricultural science, and a total of 85 members of both Houses who hold a degree or higher diploma. It has, in fact, been the non-scientifically trained who have taken the leadership in debating major scientific and technological issues in the past.

One remedy that has been put forward on various occasions to produce a better informed Parliament is the plan for a Parliamentary and Scientific Committee which would act as a meeting ground between interested MPs and scientists, and provide an ongoing liaison between backbenchers, scientific bodies, individual scientists and technologists whereby parliamentarians of both Houses could keep themselves up to date with major developments in scientific research. The proposal was first aired in 1959 by the Liberal MP Peter Howson (whose Cambridge degree included science) and it was expounded in careful detail by Bridges-Maxwell in 1965. Bridges-Maxwell, a member of the Royal Agricultural College and later a member of the Advisory Council of CSIRO, went so far as to warn the House that "unless we parliamentarians understand science and come to terms with scientists, someday somebody will say 'Politics is much too serious a matter to be left..."
to politicians and then democracy will fall.

The Liberal Government, however, committed to a policy of laissez-faire in scientific matters, declined to act and the initiative passed to the Australian Labor Party who took up the idea of a Parliamentary Standing Committee on Science and Technology in its Federal Party Platforms of 1965 and '69. The Standing Committee would, it announced, be established in addition to a Science Council, and would review policy on science and technology and the scientific aspects of general government policy. But the concept again proved abortive and the proposal was dropped from subsequent Labor Platforms in 1973 and '75. It was the OECD Examiners' Report on Science and Technology in Australia (1974) that re-emphasized the need to involve parliamentarians more fully in the problems of debating and shaping science policy. Accordingly, as Minister for Science, Mr. Morrison reintroduced the proposal - this time for a Parliamentary Science and Technology Forum - in his White Paper on "Science and Technology in the Service of Society" in January, 1975.

And there the matter rests. Neither the Labor Government in its remaining months in office activated the plan, nor has the Liberal-Country Party Coalition sought to develop this educative committee despite its reiterated pronouncements on involving a better informed electorate in decisions affecting science. While it is diverting to speculate on Governments' motives and indifference ('there are no votes in science'; 'parliamentarians are too busy' or as Churchill, that great parliamentarian once remarked, 'We do not want scientists meddling with our inards'); a gaping hiatus remains.

It is important to note the establishment of a Parliamentary Committee on Science and Technology is long overdue in Australia and that the initiative for creating it may now lie with the scientific communities and institutes such as this. On a recent Sabbatical leave in England, I was able to look closely at the British Parliamentary and Scientific Committee established in 1939 and I believe it offers a viable model, with some useful pointers to pitfalls as well.

Essentially the British Committee is an unofficial, non-statutory, and nonpartisan committee made up of members of both Houses of Parliament and of nominated representatives from scientific and technical organizations. These affiliated bodies include research institutions, academic and professional societies, councils, and industrial institutes and associations. They run the gamut from the Anatomical Society of Great Britain and the British Hydro-

mechanics Research Association to the Research Association of British Paint Colour and Varnish Manufacturers and the Textile Institute! In all there are over 130 such affiliated bodies, far more, I believe, than we would wish to embrace in Australia. There are also some 130 members from the House of Commons, and over 70 members (including some very distinguished scientists) from the House of Lords.

The aim of the Parliamentary and Scientific Committee is to act as a study group, to provide members of Parliament with authoritative scientific information on major scientific and technological fronts, and to offer a forum for exchange and discussion on scientific and technological matters before, or about to come before, Parliament. The Committee holds monthly meetings while Parliament is in session at which invited scientists or technologists report on current activities and, once a Session, the meetings are addressed by the Prime Minister or the Minister for Science. The Committee also arranges visits to industrial, government, and some defence, research establishments, and produces a monthly bulletin for members, "Science in Parliament", to summarize scientific, technological and relevant educational issues debated in both Houses. Financially the Committee is self-supporting and it caters for modest fees from its affiliated organizations who nominate one or two representatives.

Viewed over its long history, the British Parliamentary and Scientific Committee has served as a hardcore, informing source for parliamentarians on science and technology; as a "lobby" for science; and, in its detached and nonpartisan function, as a base from which individual members of Parliament can introduce specific issues, suggest priorities, and draw attention to fallow fields. Less formally, but no less importantly, the Committee has forged continuing, informal contacts between politicians and scientists and exposed the latter to some of the realities of political life. Its deficiencies, I believe, have resided in its excessive size of membership and in the fact that only a small proportion of its members were "working bees". Its prestige, however, and its pressure led in 1966 to the creation of the permanent House of Commons Select Committee on Science and Technology possessing statutory powers to examine controversial national scientific and technological issues, call witnesses, table reports, and act as an authoritative and tenacious watchdog for science.

In Australia, I would argue, that our first need (as in New Zealand, India and some European countries) is for an informal Parliamentary Committee on Science and Technology, functioning alongside the ASTEC machinery, to create a new climate of awareness in parliamentary thinking and to take some of the layman's awe and inhibitions out of debates on science. With a nucleus of interested backbenchers from both Houses, this Committee could call on the participation and resources of appropriate research, educational, and industrial bodies, the Academy of Science (and possibly its Science and Industry Forum and National Committees), the new Academy of Technological Sciences, ANZSAAS, and, importantly, the professional scientific and engineering institutes and societies. I stress the latter particularly for - as this symposium on Science Policy indicates - the Australian Institute of Physics has moved noticeably into the public domain, and like its US counterpart, the American Physical Society with its Panel on Public Affairs (PPA) could take a distinctive lead in bringing its members into closer liaison with Parliament.

In my view an Australian Parliamentary and Scientific Committee should be a nonstatutory and, to some extent, a nonhierarchical body calling on both established and new expertise and for such national issues as uranium enrichment and development, solar and other energy alternatives, marine science and technology, medical and biological developments, engineering advances, educational and manpower planning and the other diverse scientific and industrial projects that have controversial implications for this country. Members from affiliated bodies should be kept small, and rotating with recourse to differing members as different problems for discussion arise, while a list of self-nominated members of the interested societies could be maintained (as with the American PPA) to provide a reservoir of potential participating scientists.

With such a forum not only might we expect better informed and more trenchant parliamentary debate on scientific affairs, but we might also anticipate that more scientists and technologists might contemplate full-time or parliamentary interludes in their scientific careers and hence a Parliament (now heavily representative of law and commerce) that is more in keeping with a forward-looking, but hopefully introspective, scientific and technological age.

References

Branch News

Victorian Branch

Sir Louis Matheson, Chairman of the Australian Science and Technology Council (ASTEC), addressed a joint AIIP/RACI Victorian Branch meeting at the Royal Melbourne Institute of Technology on September 21. His topic was "A National Policy in Science and Technology", and it provided Sir Louis with an opportunity to discuss the background of ASTEC and its present function. In view of the joint sponsorship of the meeting and the importance of the speaker and his topic the size of the audience (about 50) was disappointing. This correspondent can only say that members missed a most interesting and important evening.

Sir Louis began by pointing out that national science policies are a post-World War II phenomenon; the development of radar, jet powered flight and nuclear weapons had prompted the question of whether peacetime government sponsorship of science could produce similarly dramatic results. Science policy was defined as a means of rationalizing government expenditure in those areas of scientific research and development related to national advancement and well-being. The consequent needs of government to stimulate, finance, even control the development of scientific R & D was noted. Major current problems such as the exhaustion of natural resources and the food-population cycle were quoted as obvious international examples.

Partly because of our gifted situation, Australia had been slow to recognize the need for a national science policy, in contrast with other countries such as Sweden, Switzerland and Japan. He warned that the days when Australia's health was assured by its agricultural industry (supported by CSIRO) were passed, and that we had to look beyond the present practice of digging out our abundant natural resources and exporting them to Japan. A viable and widely accepted national science policy was thus needed, together with a national body to formulate policy and to examine specific problems.

Sir Louis then sketched the brief but turbulent history of ASTEC, based on its inception by major uncertainties associated with frequent changes in government and science minister. As an example, it was noted that the present government has given ASTEC a "one year learner's licence"; that is, its future will be reviewed at the end of 1976. In discussing the role of ASTEC, he stressed the value of its independence, and said that he had been heartened by the response to the recent request for opinions on its existence and function.

At the end of these remarks comments and questions were invited and several questions on the performance of ASTEC on specific issues were raised. The speaker listed a number of items on which reports or advice had been tendered to the government, and commented at some length on the changing views of the Council as to types of issues that were appropriate for ASTEC to consider and those that were not. For example, as Chairman of ASTEC he noted that initially he had been unwilling to consider relatively small and specific questions requiring quick answers; but he had been persuaded, in the absence of any other available and independent body to advise the Minister on urgent questions, that ASTEC should play a role in this area. Indeed, he suggested that it was essential to ASTEC's survival that it do so.

Similarly, it was clear that Sir Louis' firm desire to avoid political questions had been modified by experience. It was, he said, impossible to avoid becoming involved in the Canberra political scene if ASTEC was to be an efficient and influential force in formulating and implementing a national science policy.

A number of questions regarding the future of ASTEC followed, concerning its composition, its relationship to other bodies (the Academy, CSIRO, etc.), and problems to which ASTEC might address itself. Sir Louis gave his personal views on these items, but stressed that they were essentially matters for the future. ASTEC was presently occupied in establishing itself; it was engaged in the "survival business", he said. It was clear that this is proving to be a most demanding task in itself.

--John G. Jenkin

NSW Branch

The Annual General Meeting of the New South Wales Branch confirmed the appointment of the following committee for 1977:

Chairman: Associate Professor D. H. Morton, University of NSW.
Vice-Chairman: Dr R. E. Collins, AWA Ltd.
Secretary: Professor K. N. R. Taylor, University of New South Wales.
Treasurer: Dr T. E. Freeman, Macquarie University.
Members: Dr R. B. Beevers, Granville Technical College; Dr N. Bignell, National Measurements Lab.; Dr C. H. Burton, National Measurements Lab.; Professor C. D. Ellyett, Newcastle University; Dr I. S. Falconer, University of Sydney; Dr P. M. Kelly, AAECRE; Dr A. R. Moon, NSW Institute of Technology; Dr B. Window, University of Sydney; Dr P. Fisher, Wollongong University.
MINUTES of an Extraordinary General Meeting held in the Keith Burrows Lecture Theatre, University of New South Wales at 5 pm on Thursday 26th August 1976.

1. ATTENDANCE
1.1 Present
The President, Dr J. G. Campbell, was in the Chair, and the following 53 other members were present. There were no apologies.


2. OPENING
The President explained that an agenda had been published in the July issue of AIP, but that, because the meeting had been convened by Council, other matters could be raised under General Business.

3. SCOPE OF ACTIVITIES AND SUBSCRIPTION LEVELS
Professor H. J. Goldsmith (Chairman, NSW Branch) explained that while the Institute had been largely a learned society in the past, it was now moving more towards being a professional body through its concern about the employment of physicists and about the impact of physics on the community. The learned society function cost relatively little to run solely at branch level but the remainder of the activities of the Institute used the majority of the subscriptions paid. The whole matter of activities and subscriptions needed to be discussed. In the subsequent discussion, the following matters were raised:

National Congresses were welcomed as they emphasised the national character of the AIP. It was suggested that there should be lectures for school children and encouragement to school teachers to join the Institute.

Concern was expressed at the high level of subscriptions for 1976, when, in fact, the ordinary members appear to have little or no say in decision making. It was suggested that the Institute should consider restricting expenditure and, therefore, the level of activities, but there was little support for the idea. The President explained that the Budget is in fact split three ways between Administration, Branches (and Groups) and The Australian Physicist.

Res. EGM 2/1
Concern was expressed at the cost of holding two Council Meetings per year, and it was RESOLVED that Council be requested to compare the cost and advantages of Council Meetings versus more frequent inter-Council members' correspondence, and to report to members the results of their investigations in The Australian Physicist.

It was alleged that a few people controlled the Institute. The President explained that, at Council Meetings, Executive members have 1 vote each and Branch Chairman have 2 votes each, except that the NSW and Vic. Branch Chairmen have 3 votes each. Thus Council voting is biased heavily in favour of Branches.

The President pointed out that Council had discussed the general issues of activities and subscriptions in May and had resolved as follows:

Res. C28/3
"RESOLVED that Branch Chairmen obtain the views of their members regarding what services are required and valued by members compared with those at present, with a view to determining policy regarding subscription levels after 1977, and that these views be reported to the next Council Meeting."

4. PHYSICISTS AND INDUSTRIAL AWARDS
It was generally agreed that physicists encounter a problem of job definition when seeking employment in industry or the Public Service in that a significant proportion of suitable jobs are designated 'engineer' and physicists are not considered for them. It was argued that more senior members of the Institute have a responsibility towards younger members in drawing attention to the problem.

Suggestions were made that the AIP should become a 'union' to fight for members in the industrial area, but this idea was rejected by the majority of speakers. The President pointed out that physicists in private industry are covered in the Professional Scientists' Award through APSA (The Association of Professional Scientists of Australia). APSA has proved effective, and not only was there no need for another industrially registered body, it would be quite impossible to have two bodies representing physicists.

The Hon. Secretary mentioned difficulties concerning lack of recognition of the grades MAIP and FAIP by the NSW Health Commission in relation to hospital physicists.

Dr R. M. Green, Convenor, Employment Committee of Council, explained that the terms of reference of that committee included conditions of employment in the Commonwealth Public Service.

The meeting summed up the debate in the following resolution:

Res. EGM 2/2
RESOLVED that Council be asked to investigate means whereby the status of physicists in relevant technological employment be raised and grades of membership of the AIP be more widely recognised.

5. OTHER BUSINESS
The Australian Journal of Physics
Dr R. W. Crompton, who is a member (at the suggestion of the AIP) of the Advisory Panel of the Australian Journal of Physics, reported that the future of the journal was in some doubt. He presented the following cases both for and against the continuation of the journal.

For
1. High standards of editing and production (particularly of theoretical papers),
2. Publishing in local journal leads to more efficient handling,
3. Contributes towards the image of Australian physics.
4. No page charges.

Against
1. Resistance to publishing in a non-specialist journal; widely held view that despite its name it is not a non-specialist journal,
2. Inadequate circulation; material published in AIP "will be overlooked",
3. No sufficiently prestigious.

In subsequent discussion, it was generally agreed that the journal needed to become more 'international' in appeal if it were to be used to a greater extent by local physicists. At present the journal attracts papers in the astrophysics and astronomy areas in particular. This bias would only change if a significant proportion of local physics research in all fields were to be published there. It was thought that present abstracting services already ensure that articles are not 'lost' in pages of the Australian Journal of Physics.

RETIRED MEMBERSHIP
At the 29th Council Meeting it was -RESOLVED (Res 29/23) that By-Law 30 be changed to read as follows:

"Any member who has (a) been a member for 15 years or more and (b) retired from his chief professional occupation and (c) attained the age of 65 years may on application to the Council and if Council thinks fit become a retired member and pay no annual subscription. In special circumstances Council may waive clause (c)."

The Australian Physicist, November 1976  Page 199
Notice is hereby given that the 14th Annual General Meeting of the Australian Institute of Physics will be held at 5 pm on Thursday 10th February, at the Wagga Wagga Agricultural College of the Riverina College of Advanced Education during the AIP State Solid State Physics Meeting.

AGENDA
1. Apologies and declaration of proxies
2. Minutes of the 12th AGM
4. Business Arising from Minutes
5. 14th Annual Report and Financial Statements
6. Appointment of Auditor
7. Other Business
8. Declaration of Election of Executive.

J. R. Pilbrow
Hon. Secretary

GENERAL
The activities of the Branches and Groups have continued to be the mainstay of the Institute during 1976 though, at the National level, the 2nd AIP National Congress proved to be highly successful. Even more than in 1975, the Institute continued to become more involved in issues of Science Policy. Administratively, 1976 will mark the end of a ten year period during which the office has been in Melbourne. Early in 1977 Science House Pty. Ltd. in Sydney will take over the management of the Institute Office at an estimated saving in cost over a full year’s operations of $5000 compared to the present arrangements at Clunes Rose House in Melbourne.

During the year, two submissions on Solar Energy were made to the Senate Committee on National Resources, in which case for a Solar Energy Research and Development Authority was presented. The second of these submissions, which was published in the October issue of The Australian Physicist, was prepared at the request of the Senate Committee. A short submission was also made to the Interim ASTEC. The Science Policy Committee arranged a number of working groups on the Uranium mining and enrichment issues, but these are unlikely to produce reports until after the publication of the second report of the Ranger Inquiry some time in 1977.

Professor T. M. Sabine replaced Dr J. G. Campbell as Chairman of the Science Policy Committee at the 29th Council Meeting. At that Council Meeting, detailed terms of reference were adopted for the Science Policy Committee and they will be published as part of the 29th Council Meeting Report in The Australian Physicist.

From a different point of view, the Institute has developed a new national identity through the various Committees of Council. In addition to the Membership and Science Policy Committees, the Education Committee, set up at the end of 1975, has now begun its work under the Chairmanship of Professor Bruce Mainbridge. At the May Council Meeting, Council set up an Employment Committee with Dr R. M. Green as Convener. The terms of reference of the Employment Committee were published in the report of the 28th Council Meeting (August 1976 issue of The Australian Physicist) while those for the Education Committee will be included in the report of the 29th Council Meeting, yet to be published.

During the year Council decided to move the Institute Office to Sydney after a 10 year period in Melbourne. The present office bearers complete their terms of office at the 14th Annual General Meeting in February 1977. In particular, mention should be made of the retiring President, Dr J. G. Campbell who has served continuously on the Executive the past ten years, first as Hon. Secretary (6 years), then as Vice-President and finally President. At the end of their terms of office, Dr J. K. Mackenzie will have completed 8 years as Hon. Treasurer, Dr J. R. Pilbrow 2 years as Hon Secretary. In moving to Sydney, the Institute will lose a co-operative partner in the Australian Institute of Refrigeration, Air Conditioning & Heating, (Inc.) at Clunes Rose House with whom the office has been shared for eight and a half years.

The second AIP National Congress was held from 23 to 27 August at the University of New South Wales with 232 registrants. It was considered to be a scientific and a social success and in addition a surplus of approximately $1500 was realised. A major innovation was the successful use of Poster Sessions and these are likely to be a feature of future Congresses. The 16th Annual Conference of Physicians and Engineers in Medicine and Biology was held in conjunction with the Congress. Planning is under way for the 3rd AIP National Congress to be held in Perth, 15 to 19 January 1979.

The 29th Council Meeting defined retired membership by changing By-Law 30 (published separately in this issue of The Australian Physicist). The new By-Law recognises a growing trend towards earlier retirement.

FINANCE
The accounts for the year ended 30th September 1976 are presented in essentially the same form as last year. The consolidated accounts comprise the individual accounts of the Branches, Groups, Council Funds and The Australian Physicist. The Benvolent Fund is independent from the Institute Funds and is reported separately. Members should have received financial statements from the Branches and Groups to which they belong.

The consolidated Institute accounts show a surplus of $3890, which resulted from a surplus of $3314 in Branch and Group funds, and, after an internal transfer of $1300, a surplus of $1350 for The Australian Physicist, and a deficit of $754 for Council controlled funds. The "extraordinary" transfer of $1500 from Council Funds will ensure that The Australian Physicist has a liquidity of funds appropriate to its new business environment in Adelaide. Table I shows how the accumulated funds of the Institute are distributed among the various component accounts and how they have changed since 1970. It is noteworthy that while both Gross income and Branch and Group accumulated funds have kept pace with inflation those of the Institute as a whole and of Council controlled funds in particular have failed to do so; moreover, the majority of the Institute’s accumulated funds are at the discretion of the Branches and Groups. It seems clear therefore that either the Branches and Groups should be encouraged to spend at a greater rate on activities or they should be persuaded to reallocate their assets so as to enable a lower subscription.

Table 1 shows how the income received by central office was disbursed both for the current year and how it is expected to be disbursed for the succeeding year 1977. Although gross income was below expectation by several thousand dollars careful management also reduced Administrative costs by nearly the same amount. Moving the office to Sydney should result in an economy of scale which will at least contain administrative costs for another year. On the other hand, as "hidden subsidies" continue to disappear, Council and other Legislative expenses were above budget and are expected to increase further in 1977.
TABLE I – FINANCIAL SUMMARY

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*This row of numbers was introduced to agree with numbers in various tables of Audited statement.

MEMBERSHIP

The Institute records with regret the deaths of Mr R. S. T. Kingston FAIP (Vic), Professor D. Muggleston FAIP (Qld.), Dr J. B. Rudd FAIP (NSW), Dr J. V. Ramsay, MAIP (NSW).

The Membership figures at 10 November 1976 are shown in Table III. The figures in brackets indicate the changes over the past year. It is regretted that the names of 47 Corporate members and 12 non-corporate members had to be removed from the Register for non-payment of Annual Subscriptions. The membership now appears to be static. Corporate membership rose by about 0.5% to 1579 and there was virtually no change in either the total membership or the number of Company Subscribers.

There has been no change in the qualifications at present acceptable for Graduateship and shown in Table IV. Table V lists show societies which have been declared Cognate so that their members may become Group Affiliates.

There have been no requests for the assessment of overseas professional qualifications since September 1974.

TABLE II – ACCUMULATED FUNDS

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TABLE III – MEMBERSHIP AT 10 NOVEMBER 1976

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<td>(+3)</td>
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<td>(+2)</td>
<td>(+1)</td>
<td>(+2)</td>
<td>(+3)</td>
<td></td>
</tr>
<tr>
<td>Graduate</td>
<td>55</td>
<td>187</td>
<td>38</td>
<td>65</td>
<td>20</td>
<td>192</td>
<td>58</td>
<td>40</td>
<td>6</td>
<td>661</td>
</tr>
<tr>
<td>(2)</td>
<td>(+3)</td>
<td>(+1)</td>
<td>(+4)</td>
<td>(+1)</td>
<td>(-1)</td>
<td>(+2)</td>
<td>(+2)</td>
<td>(+2)</td>
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<tr>
<td>Total Members</td>
<td>132</td>
<td>444</td>
<td>109</td>
<td>170</td>
<td>40</td>
<td>462</td>
<td>121</td>
<td>91</td>
<td>10</td>
<td>1579</td>
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<tr>
<td>(2)</td>
<td>(+1)</td>
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<td>(+1)</td>
<td>(+2)</td>
<td>(+2)</td>
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<tr>
<td>Associate</td>
<td>3</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>33</td>
<td>(+1)</td>
</tr>
</tbody>
</table>
TABLE IV - QUALIFICATIONS RECOGNIZED BY THE INSTITUTE FOR GRADUATESHIP

(a) A past degree in physics from any Australian or New Zealand university;
(b) A degree in physics from any university recognized by The Institute of Physics (London);
(c) Any of the following degrees or diplomas with physics as a major subject:
- Canberra College of Advanced Education: B App Sc Degree (with special requirements as to physics content);
- The Capricornia Institute of Advanced Education: B App Sc (Physics);
- Caulfield Institute of Technology: B App Sc (Multidisciplinary) (with special requirements as to physics content);
- Darling Downs Institute of Advanced Education: B App Sc (Physics);
- Gordon Institute of Technology: Diploma of Applied Physics;
- The New South Wales Institute of Technology: Diploma in Technology with Major in Physics;
- Queensland Institute of Technology: B App Sc (Physics);
- Royal Melbourne Institute of Technology: B App Sc Degree (Physics); Fellowship Diploma in Applied Physics or Applied Physics (Meteorology);
- The School of Mines and Industries, Ballarat: B App Sc Degree (double major in Physics); Diploma in Applied Physics;
- South Australian Institute of Technology: B App Sc Degree in Applied Physics;
- Sydney Technical College: The ASTC Diploma in Physics, provided it was obtained prior to 1964;
- The University of Adelaide: B Tech Degree in Industrial Physics: B App Sc Degree in Applied Physics on work done at the South Australian Institute of Technology;
- University of Melbourne: B App Sc Degree, provided it includes Physics at the third level, Electronics and Mathematics;
- The University of New South Wales: B Sc Degree in Textile Physics;
- Western Australian Institute of Technology: B App Sc.

TABLE V - COGNATE SOCIETIES

The Institute of Physics
The Institute of Physics in New Zealand
The Royal Australian Chemical Institute
Science Teachers Association of NSW
Science Teachers Association of Victoria
Science Teachers Association of Queensland
Science Teachers Association of Tasmania
Science Teachers Association of the ACT
Science Teachers Association of the NT
SA Science Teachers Association
WA Science Teachers Association
The American Physical Society for people domiciled outside Australia.

"THE AUSTRALIAN PHYSICIST"

Since the January 1976 issue, The Australian Physicist has been produced in Adelaide under the editorship of Mr. W. S. Boundy. The format of the journal was changed to A4 size but the basic layout has been retained. A new feature has been the 'President's Column' each month, and a certain amount of historical material has added insight into the background to Australian physics. Promises of a good deal of material have been made, and it is hoped to publish some of the lectures from the 2nd AIP National Congress. Postal delays have frequently caused difficulty in meeting publication schedules. The Editor and his team are to be congratulated on the excellent job they have done in taking over the production of The Australian Physicist.

INSTITUTE, BRANCH AND GROUP ACTIVITY

The Thirteenth Annual General Meeting of the Institute was held at International House, Melbourne on 27 May 1976. The President, Dr. J. G. Campbell, was in the Chair and 28 members were present. The 1976 confirmed minutes were published in the July 1976 issue of The Australian Physicist.

An Extraordinary General Meeting, chaired by the President, Dr. J. G. Campbell, and attended by 53 members, was held at the University of New South Wales on 26 August 1976. The unconfirmed minutes are published in this issue of The Australian Physicist.

Two Council Meetings, each lasting two days, were held in May and October. The Executive Committee met eight times during the year. The Twelfth Prowse Memorial Lecture was held in Adelaide in October 1976 and was given by Professor R. D. Brown FAA of the Chemistry Department, Monash University. His lecture entitled "Molecules in Space" was attended by about 200 people.

A Committee of Council was set up to plan a Solid State Physics Meeting at Wagga Wagga, 9 to 11 February 1977. Branches have continued the pattern of regular meetings; though the small attendances in some cases have been disappointing. The Tasmanian Branch conducted a seminar on Physics Teaching in Secondary Schools, had a clasticist speak about solar eclipses and made its own submission to the interim ASTEC. In NSW, the monthly meetings topics included uranium mining, gulf and tidal power. Through a separate committee, the NSW Branch organised the 2nd National Congress. The Queensland Branch had lectures from Professor Donald De Graaf (Michigan) and Professor D. C. Peaslee (ANU). Two lectures were held at Rockhampton. Professor N. H. Fletcher presented very interesting Schools' lectures in Brisbane and at Toowoomba where the attendances were 400 and 200 respectively. The ACT Branch set up a sub-committee on Nuclear Power and lectures included those by Professor A. R. Follett (NIZ) on Nuclear Spectroscopy.

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and Professor Sir Herman Bondi on Sanitation. In Victoria, activities included a lecture on Science Policy by Sir Louis Matheson, and symposia on uranium mining and interplanetary. The Youth Lecturer, Professor K. D. Cole, presented a lecture on "Solar Terrestrial Physics" in Geelong, Ballarat and Churchill to a total of 1550 secondary school students.

The roles of the groups, while national in character, have continued to develop in different ways. The Biophysics Group was involved in the 16th Conference of Physicists and Engineers in Medicine and Biology, held in conjunction with the 2nd National Congress. Group members are closely involved in the establishment of the Australasian College of Physical Scientists in Medicine. The Vacuum Physics Group held a most successful Conference Vacuum Technology Course in Brisbane in July. The NUPP Group is planning a Summer School at Jimnabane 7 to 11 February 1977.

The Education Group will cease to exist at 31 December 1976 and the planning of educational activities in future will be the responsibility of the Education Committee of Council and the Branch Committees.

CO-OPERATION WITH OTHER SCIENTIFIC ORGANISATIONS

The Institute values its membership of the Conference of Allied Societies which meets twice a year for discussion of topics of mutual interest. Associated societies are the Australian Institute of Mining and Metallurgy, the Institute of Engineers Australia, the Royal Australian Chemical Institute, the Australian Institute of Agricultural Science and the Institution of Surveyors Australia.

The Institute has reciprocal arrangements with a number of other societies whereby a member of one Society visiting the other's country can be helped in establishing contacts with other physicists there, and enjoy most of the benefits of membership of the other Society (without subscription and with no voting rights) on a short-term basis. These reciprocal arrangements exist between the AIP and the American Institute of Physics, the Canadian Association of Physicists, the European Physical Society, the Institute of Physics, London, the Institute of Physics, Singapore, the Physical Society of Japan and the South African Institute of Physics.

The Institute is represented on a number of bodies as listed below:

ARCHIVES

As a consequence of the move to Sydney, the Executive have decided that files up to the end of 1974 will be deposited in the Archives at the Adolph Basler Library in Canberra where earlier files are already stored.

MEMBERSHIP OF COUNCIL FOR 1976

The following members of the Executive took office in February 1975 and complete their term at the conclusion of the Fourteenth Annual General Meeting in 1977:

- President: Dr. J. C. Campbell
- Vice-President: Professor T. M. Sabine
- Hon. Registrar: Dr. J. L. Rouse
- Hon. Treasurer: Dr. J. K. Mackenzie
- Hon. Secretary: Dr. J. R. Pilbrow
- Dr. F. J. Jacka held office on Council (ex officio) as Immediate Past President.

Each Branch was represented on Council by its Chairman, who holds office until 31 December 1976 as follows:

ACT Branch: Dr. P. B. Treacy
NSW Branch: Professor H. J. Goldsmith
Qld. Branch: Professor R. W. Dunlop
SA Branch: Professor J. H. Carver
Tas. Branch: Dr. W. D. Parkinson
Vic. Branch: Professor H. H. Boltin
WA Branch: Professor B. Main bridage

OFFICERS OF THE INSTITUTE

- Secretary: Dr. J. R. Pilbrow

Assistant Secretary: Miss B. Doddrell
Editorial Committee: "The Australian Physicist"
Editor: Mr. W. S. Boundy
Assistant Editor: Dr. E. R. Sandercock
Book Reviews: Mr. G. A. Bell
Secretary: Mr. J. A. Westphalen
Members: Dr. B. Possingham, Dr. G. Robertson
Treasurer: Dr. R. D. Campbell
Associate Editors: Mr. F. W. Brown, Dr. N. Bignell, Professor H. C. Webster, Dr. G. Robertson, Dr. P. M. McCulloch, Dr. J. D. Cashon, Dr. R. de Laeter
Auditor: Richard Lowe & Co.

Trustees for Benevolent Fund: Professor H. C. Bolton, Dr. R. W. Crompton, Professor T. M. Sabine, Dr. J. G. Campbell.

Returnng Officers: Professor B. M. Spicer

Memorial Committee: Dr. J. L. Rouse (Chairman), Professor H. C. Bolton, Dr. J. G. Darby. Ex officio members: Dr. J. G. Campbell, Dr. J. K. Mackenzie, Dr. J. R. Pilbrow.

Science Policy Committee: Dr. J. G. Campbell (Convenor till 26 Oct. 1976), Professor T. M. Sabine (Chairman from 26 Oct. 1976), Dr. R. Bird, Professor H. H. Boltin, Professor H. C. Bolton, Dr. J. K. Mackenzie (ex officio) and Dr. J. R. Pilbrow (Hon. Secretary).

Education Committee: Professor B. Mainbridage (Chairman), Dr. P. E. Clark (Hon. Secretary), Professor J. R. Prescott, Dr. G. C. Fletcher, Dr. A. Grafton, Dr. R. Green, Dr. J. de Laeter, Dr. R. MacDonald, Dr. Barbara Possingham.

Employment Committee: Dr. R. Green (Convenor), Dr. I. Maclean, Assoc. Professor D. Morton and Professor T. M. Sabine.

Finance Advisory Committee: The Executive.

AIP Representative on Joint Office Management Committee: Dr. J. R. Pilbrow, Dr. J. K. Mackenzie, Dr. J. L. Rouse.

Institute Trustees: Dr. R. D. B. Fraser, Mr. T. P. McRae.

BRANCH AND GROUP COMMITTEES

ACT Branch: Dr. P. B. Treacy (Chairman), Mr. G. E. Barlow (Vice-Chairman), Mr. C. S. Newton (Secretary), Mrs. E. M. Richardson (Treasurer), Mr. A. M. Baxter, Mr. P. A. L. Bowe, Mr. F. W. Brown, Mr. D. M. Finlayson, Mr. J. P. Lonergan, Mr. W. K. McKenna, Dr. A. F. Nicholson, Professor G. V. H. Wilson.

NSW Branch: Professor H. J. Goldsmith (Chairman), Dr. J. C. Macfarlane (Vice-Chairman), Associate Professor D. H. Morten (Secretary), Dr. T. E. Freeman (Treasurer), Dr. R. B. Beavers, Dr. C. H. Burton, Professor C. D. Ellyett, Dr. G. J. Russell, Dr. N. Bignell, Dr. R. E. Collins, Dr. P. M. Kelly, Dr. R. Window.

QLD Branch: Mr. R. Dunlop (Chairman), Mr. R. R. Gardiner (Vice-Chairman), Mr. T. C. Lewis (Secretary), Mr. B. W. Lucas (Treasurer), Professor R. L. Segall.

Tas. Branch: Dr. W. D. Parkinson (Chairman), Dr. J. E. Humble (Vice-Chairman), Mr. I. A. Newman (Secretary).

Vic. Branch: Professor H. H. Boltin (Chairman), Professor K. D. Cole (Vice-Chairman), Mr. J. D. Bunton (Secretary), Dr. J. G. Creer (Treasurer), Dr. J. D. Cashon, Dr. J. Clark, Mr. R. J. de Groot, Mr. W. G. Durant, Mr. F. Hannaford, Dr. J. G. Jenkin, Mr. R. C. Warner.

WA Branch: Professor B. Mainbridage (Chairman), Dr. J. Black (Vice-Chairman), Dr. P. Jennings (Secretary), Dr. B. M. Hartley (Treasurer), Dr. J. R. de Laeter, Dr. M. J. Lynch, Mr. S. Gunson, Professor R. Rand, Dr. J. Robins, Mr. M. Farrell, Mr. K. Tobin, Mr. R. Fleay, Dr. P. Dallimore, Mr. C. Griffiths, Mr. D. W. Collins.

SA Branch: Professor J. H. Carver (Chairman), Dr. E. Murray (Vice-Chairman), Dr. E. R. Sandercock (Treasurer), Dr. R. Cahill (Secretary), Mr. J. Bosher, Dr. R. Clay, Mr. G. Goodwin, Mr. C. Loe, Dr. S. O. Martin, Dr. J. Mohyla, Dr. B. Possingham, Dr. G. Robertson.

BIOPHYSICS GROUP: Dr. J. L. Clark (Chairman), Mr. C. M. Clarke (Vice-Chairman), Mr. L. D. Oliver (Secretary), Mr. D. Robinson, Dr. G. Wordsworth.

EDUCATION GROUP: Dr. G. L. Paul (Chairman), Mr. L. G. Little (Vice-Chairman), Dr. C. G. Gaul (Secretary), Dr. R. P. Clark, Mr. W. G. Dunn, Mr. I. Guy, Mr. R. S. Horsfield, Mr. W. A. Miller, Mr. L. Jefferies, Dr. R. S. Woolcott.

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VACUUM PHYSICS GROUP: Mr J. A. Davies (Chairman), Mr T. G. Lewis (Secretary), Dr I. R. Cowling (Treasurer).

NUCLEAR AND PARTICLES PHYSICS GROUP: Associate Professor R. B. Taylor (Chairman), Dr J. R. Bird (Vice-Chairman), Dr R. F. Barrett (Secretary), Dr I. F. Bubb, Professor D. C. Peck, Professor G. L. Opal, Dr L. Peak, Professor H. H. Boktin, Professor B. M. Spicer, Professor A. Poletti, Dr T. Ophel, Professor C. A. Hurst.

REPRESENTATION ON OTHER BODIES
Council gratefully acknowledges the services of those members who represented the Institute on the Councils or Committees of other bodies; they were:

National Association of Testing Authorities: Professor L. W. Davies.
Australian National Committee on Illumination: Dr A. J. D. Farmer.
Australian Institute of Radiography: Mr J. F. Richardson.
Acoustic Standards Committee of S.A.: Dr R. W. R. Muncey (resigned May 1976); Associate Professor H. F. Pollard.
Australian Academy of Science: National Committee for Physics: Dr. F. J. Jacka.

CONSOLIDATED BALANCE SHEET AS AT 30TH SEPTEMBER, 1976

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCUMULATED FUNDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at 30th September, 1976</td>
<td>24,127</td>
<td>28,017</td>
<td></td>
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<tr>
<td>— See Table II for 1976 #</td>
<td>248</td>
<td>4,457</td>
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</tr>
<tr>
<td>CURRENT LIABILITIES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>6,151</td>
<td>3,528</td>
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<td>Subscriptions in advance</td>
<td>145</td>
<td>275</td>
<td></td>
</tr>
<tr>
<td>Unexpended Grants — SA–SSPC Fund</td>
<td>232</td>
<td>232</td>
<td></td>
</tr>
<tr>
<td>Employment Survey</td>
<td>398</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>Schools Lectures</td>
<td>92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions for Specific Purposes for —</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of Subscription Year</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Service Leave</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4,619</td>
<td>19,844</td>
<td></td>
</tr>
</tbody>
</table>

| 7,518 |

**CURRENT ASSETS**

Cash on Hand | 153 |
Cash at Bank and in Transit | 4,457 |
Cash on Deposit – Permanent Building Society | 2,998 |
Accounts Receivable | 2,134 |
Stock on Hand at Cost | 592 |
Investments – at Cost |
Debentures etc. which are dealt in on a prescribed Stock Exchange | 20,041 |
Furniture, Fittings & Plant — |
At Deemed Value 1967 | 896 |
At Cost | 1,353 |
Less Provision for Depreciation | 1,016 |
Depreciation | 1,233 |

**FIXED ASSETS**

Less Provision for Depreciation | 1,233 |

COUNCIL FUNDS – BALANCE SHEET AS AT 30TH SEPTEMBER 1976

<table>
<thead>
<tr>
<th>1975</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCUMULATED FUNDS</strong></td>
<td></td>
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<tr>
<td>Balance at 1st October, 1975</td>
<td>7,308</td>
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<tr>
<td>Less Deficit for year</td>
<td>4,222</td>
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<tr>
<td>Total</td>
<td>3,086</td>
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<tr>
<td>CURRENT LIABILITIES</td>
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</tr>
<tr>
<td>Bank Overdraft</td>
<td>498</td>
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<tr>
<td>Accounts Payable</td>
<td>500</td>
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<tr>
<td>Audit Fee</td>
<td>382</td>
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<tr>
<td>Due to Benevolent Fund at Call</td>
<td>145</td>
</tr>
<tr>
<td>Subscriptions in Advance</td>
<td>17,611</td>
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<tr>
<td>Funds held on behalf of Branches and Groups</td>
<td>18,429</td>
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<tr>
<td>Provisions for Specific Purposes for —</td>
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<tr>
<td>Change of Subscription Year</td>
<td>400</td>
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<tr>
<td>Long Service Leave</td>
<td>19,886</td>
</tr>
<tr>
<td>Total</td>
<td>22,071</td>
</tr>
</tbody>
</table>

**CURRENT ASSETS**

Cash on Hand | 3,086 |
Cash in Bank | 100 |
Cash in Bank – Deposits at Call – Arnott First City Perm Bldg. Society | 1,055 |
Accounts Receivable | 678 |
Stock on Hand at Cost | 592 |
Investments – at cost |
Debentures etc. which are dealt with on a Prescribed Stock Exchange | 20,041 |
Furniture, Fittings and Plant – |
At Deemed Value 1967 | 896 |
At Cost | 1,353 |
Less Provision for Depreciation | 1,233 |
Depreciation | 1,016 |

**FIXED ASSETS**

Less Provision for Depreciation | 1,016 |
Depreciation | 1,233 |

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CONSORTIUM STATEMENT OF INCOME & EXPENDITURE FOR THE YEAR ENDED 30th SEPTEMBER 1976

1975 1976
(4,183) Surplus (Deficit) from normal years activities after making the following Charges and Provisions 3,790
- Provision for Long Service Leave 876 Auditors Remuneration for - Audit Services 1,034
- - Other Services - -
- 108 Depreciation of Fixed Assets 100 Directors Remuneration and Emoluments -
- - $984 - - $1,134
and after including 2,084 Interest Received from Investments etc. $2,431

Add Extraordinary Items
- Transfers from Provisions - Long Service Leave 100
- $2,099 Net Surplus (Deficit) for Year $ 3,890
26,226 Which is added to Accumulated Funds brought forward from previous year 24,127
$24,127 Leaving Accumulated Funds carried forward as per Balance Sheet $28,017

COUNCIL FUNDS — INCOME & EXPENDITURE FOR YEAR ENDED 30th SEPTEMBER, 1976

INCOME
Income from Normal Sources
28,189 Members Subscriptions for 1976 39,581 40,990 2,772 4,427
939 " " " 1975 1,409 64 -
523 Group Subscriptions for 1976 502 -
1,893 Bank and Investment Income 2,226 -
262 Exhibitions and Summer Schools etc. 80 -
- Employment Survey Funds 397 -
Extraordinary Income
- Transfer from provisions for - Long Service Leave 100 1,140
4,223 Deficit for Year 754 85

EXPENDITURE
Legislative
Council Meeting & Executive Expenses 4,427
Assessment of Qualifications - 4,427

Publishing
"The Australian Physicist" 12,500

Branch and Group Activities
Branch & Group Grants 7,962
Visiting Lecturers Grants 1,292
Conferences & Lectures 1,240
Archives Grant - 10,494

Administrative
Salaries & Wages 10,194
Rent & Cleaning 751 10,945
Printing, Stationery & Insurance 1,483
Postage, Telephone & Cartage 1,144
Sundries & Bank Charges 286
Depreciation 100
Audit & Accountancy 600 3,613

$36,029 43,549

Extraordinary Expenditure
Transfer of Funds to "The Australian Physicist" 1,500

$36,029 $45,049 $36,029 $45,049

INVESTMENTS AT COST AS AT 30th SEPTEMBER, 1976

<table>
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<tr>
<th>(Nom.)</th>
<th>%</th>
<th>Due</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>802 (800)</td>
<td>L.A.C. Ltd</td>
<td>8%</td>
<td>31.36</td>
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<tr>
<td>788 (800)</td>
<td>C.U.B. Ltd</td>
<td>6%</td>
<td>21.12</td>
</tr>
<tr>
<td>2,752 (3,000)</td>
<td>B.P. Aust. Ltd</td>
<td>7%</td>
<td>28.77</td>
</tr>
<tr>
<td>1,012 (1,000)</td>
<td>Ford Motor Co. Pty. Ltd</td>
<td>7%</td>
<td>30.47</td>
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<tr>
<td>3,000 (3,000)</td>
<td>Associated Securities Ltd.</td>
<td>13%</td>
<td>5.09</td>
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<td>2,000 (2,000)</td>
<td>ESANDA Ltd</td>
<td>10%</td>
<td>15.00</td>
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<tr>
<td>780 (800)</td>
<td>I.C.I. Ltd</td>
<td>6%</td>
<td>30.12</td>
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<td>1,936 (2,000)</td>
<td>ESSO Pty. Ltd.</td>
<td>7%</td>
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<td>1,005 (1,000)</td>
<td>ESANDA Ltd.</td>
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<td>16.00</td>
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<td>800 (800)</td>
<td>Finance Corp. of Aust. Ltd.</td>
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<tr>
<td>2,000 (2,000)</td>
<td>Alliance Holdings Ltd.</td>
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<td>1,640 (1,700)</td>
<td>B.H.P. Ltd</td>
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<tr>
<td>1,030 (1,000)</td>
<td>I.C.I. Ltd.</td>
<td>8%</td>
<td>31.80</td>
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<tr>
<td>1,000 (1,000)</td>
<td>GMAC Ltd.</td>
<td>13%</td>
<td>31.80</td>
</tr>
<tr>
<td>290 (300)</td>
<td>B.H.P. Ltd.</td>
<td>7%</td>
<td>1.10</td>
</tr>
</tbody>
</table>

$19,843 $20,041
## THE AUSTRALIAN PHYSICIST – INCOME & EXPENDITURE ACCOUNT FOR YEAR ENDED 30TH SEPTEMBER, 1976

<table>
<thead>
<tr>
<th>INCOME</th>
<th>1976</th>
<th>1975</th>
<th>EXPENDITURE</th>
<th>1976</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal Income</strong></td>
<td>8,643</td>
<td>12,500</td>
<td>Publication Costs</td>
<td>9,691</td>
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<tr>
<td>Special Supplements &amp; Inserts</td>
<td>–</td>
<td>–</td>
<td>Ten Year Index</td>
<td>680</td>
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<tr>
<td>9,000</td>
<td>514</td>
<td>Reprints &amp; Extracts</td>
<td>145</td>
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<tr>
<td>588</td>
<td>3,457</td>
<td>Distribution Costs</td>
<td>3,892</td>
<td></td>
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<tr>
<td>1,883</td>
<td>821</td>
<td>Accountancy &amp; Clerical</td>
<td>246</td>
<td></td>
</tr>
<tr>
<td>Advertising</td>
<td>1,707</td>
<td>Audit</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>1,052</td>
<td>149</td>
<td>Postage, Stamp Duty &amp; Telephone</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>14</td>
<td>Printing &amp; Stationery</td>
<td>718</td>
<td></td>
</tr>
<tr>
<td>Extraordinary Income</td>
<td>14</td>
<td>Sundrys</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>Transfer of funds from Australian Institute of Physics</td>
<td>314</td>
<td>Surplus for Year</td>
<td>1,330</td>
<td></td>
</tr>
<tr>
<td>1,500</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deficit for Year</strong></td>
<td>14,042</td>
<td><strong>$17,006</strong></td>
<td></td>
<td><strong>$17,006</strong></td>
</tr>
</tbody>
</table>

## BALANCE SHEET AS AT 30TH SEPTEMBER, 1976

<table>
<thead>
<tr>
<th>1975</th>
<th>1976</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT LIABILITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>1,699</td>
<td>369</td>
</tr>
<tr>
<td>Deposits at call – Permanent Building Societies</td>
<td>2,709</td>
<td>Bank Accounts</td>
</tr>
<tr>
<td><strong>ACCUMULATED FUNDS</strong></td>
<td>1,655</td>
<td>2,385</td>
</tr>
<tr>
<td>Balance at 1,10.75</td>
<td>1,055</td>
<td>Stock on Hand at cost</td>
</tr>
<tr>
<td>Surplus (Deficit) for Year</td>
<td>1,330</td>
<td>Accrued Income (Interest)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,385</strong></td>
<td><strong>$4,084</strong></td>
</tr>
</tbody>
</table>

## BALANCE SHEET OF BENEVOLENT FUND AS AT 30TH SEPTEMBER 1975

- **ACCUMULATED FUNDS**
  - Balance at 1st October, 1975: 5,091
  - Add: Members contributions and interest
  - Less: payments
  - Total Funds: 6,069

- **HELD AS FOLLOWS:**
  - Bank Account: 1,925
  - General Account: 816
  - Investment at cost: 3,268
  - **Total Assets:** 6,069

<table>
<thead>
<tr>
<th>1975</th>
<th>(Nom)</th>
<th>MMBW</th>
<th>%</th>
<th>Due</th>
<th>1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>393</td>
<td>(400)</td>
<td>5.0</td>
<td>1.10.75</td>
<td>1,300</td>
<td></td>
</tr>
<tr>
<td>1,300</td>
<td>(1,300)</td>
<td>9.2</td>
<td>1.10.75</td>
<td>1,300</td>
<td></td>
</tr>
<tr>
<td>9.4</td>
<td>1.10.75</td>
<td>1,300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>186</td>
<td>(200)</td>
<td>6.0</td>
<td>1.12.76</td>
<td>186</td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>(500)</td>
<td>6.2</td>
<td>1.12.79</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>1.9.80</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>782</td>
<td>(1,000)</td>
<td>5.58</td>
<td>1.12.80</td>
<td>782</td>
<td></td>
</tr>
<tr>
<td><strong>$ 3,661</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$ 3,268</strong></td>
</tr>
</tbody>
</table>

## FUNDS HELD ON BEHALF OF THE BRANCHES AND GROUPS

<table>
<thead>
<tr>
<th>BRANCHES</th>
<th>Balance at 1.10.75</th>
<th>Deduct Withdrawals</th>
<th>Add Undrawn Grants</th>
<th>Surplus from Activities</th>
<th>Annual Interest</th>
<th>Balance at 30.9.76</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>850</td>
<td>18</td>
<td>–</td>
<td>–</td>
<td>75</td>
<td>907</td>
</tr>
<tr>
<td>NSW</td>
<td>3552</td>
<td>397</td>
<td>550</td>
<td>–</td>
<td>320</td>
<td>4025</td>
</tr>
<tr>
<td>QLD</td>
<td>1123</td>
<td>181</td>
<td>261</td>
<td>–</td>
<td>85</td>
<td>1288</td>
</tr>
<tr>
<td>SA</td>
<td>2968</td>
<td>–</td>
<td>334</td>
<td>–</td>
<td>267</td>
<td>3569</td>
</tr>
<tr>
<td>TAS</td>
<td>229</td>
<td>–</td>
<td>93</td>
<td>–</td>
<td>21</td>
<td>343</td>
</tr>
<tr>
<td>VIC</td>
<td>5501</td>
<td>800</td>
<td>–</td>
<td>–</td>
<td>423</td>
<td>5124</td>
</tr>
<tr>
<td>WA</td>
<td>1465</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>132</td>
<td>1597</td>
</tr>
</tbody>
</table>

Page 206 The Australian Physicist, November 1976
REPORT OF COUNCILLORS

Your Councillors submit herewith the following audited financial statements:

Income and Expenditure Account made up for the year ended 30th September, 1976.

Balance Sheet as at the end of the financial year then ended.

Your Councillors report that:

1. The net surplus of the Institute for the financial year amounted to $3890.

2. Prior to the making out of the Income & Expenditure Account and the Balance Sheet your Councillors took reasonable steps to ascertain what action had been taken in relation to the writing off of bad debts where necessary and the making of provision for doubtful debts and are satisfied that there are no known bad debts to be written off and no provision is considered necessary for doubtful debts.

3. At the date of this report your Councillors are not aware of any circumstances which would render the position as regards accounts receivable as stated above inadequate to any substantial extent.

4. At the date of this report your Councillors are not aware of any circumstances which would render the values attributed to current assets in the accounts misleading.

5. At the date of this report no charge on the assets of the Institute has arisen since the end of the financial year which secures the liabilities of any other person; and no contingent liability has arisen since the end of the financial year.

6. No contingent or other liability has become enforceable or is likely to become enforceable within the period of twelve months after the end of the financial year which in the opinion of your Councillors will or may affect the ability of the Institute to meet its obligations when they fall due.

7. The result of the Institute's operations during the financial year were, in the opinion of your Councillors, not substantially affected by any item, transaction or event of a material and unusual nature save for the transfer from Provision for Long Service Leave of $100 as stated in the Income & Expenditure Statement which in the 1975 year did not occur.

8. There has not arisen in the interval between the end of the financial year and the date of the report any item, transaction or event of a material and unusual nature likely, in the opinion of your Councillors to affect substantially the results of the Institute's operations for the next succeeding financial year.

9. Since the end of the previous financial year no Councillor has received or become entitled to receive any benefit not disclosed in the accounts by reason of a contract made by the Institute with the Councillor, or with a firm of which he is a member, or with a company in which he has a substantial financial interest.

Signed on behalf and in accordance with a resolution of the Councillors dated 30th November 1976.

This 30th day of November, 1976.

J. K. Mackenzie
J. R. Pilbrow

STATEMENT OF PRINCIPAL ACCOUNTING OFFICER

I, James Kenneth Mackenzie being the principal accounting officer of THE AUSTRALIAN INSTITUTE OF PHYSICS state that, to the best of my knowledge and belief, the accounts give a true and fair view of the matters required by Section 62 of the Companies Act 1961, to be dealt with in the accounts.

This 30th day of November, 1976.

J. K. Mackenzie

AUDITORS REPORT

To: The Members of THE AUSTRALIAN INSTITUTE OF PHYSICS.

As required by the Companies Act 1961, we report as follows:

We have not acted as auditor for the following Branches or Groups:

Branches—
Australian Capital Territory
New South Wales
Queensland
South Australia
Tasmania
Western Australia

Groups—
Education
Vacuum Physics

The Australian Physicist

We are satisfied that the returns received from Branches and Groups are in form and content appropriate and proper for the purposes of the preparation of the attached Balance Sheet and supporting accounts of the Institute.

We have examined the Auditor's report on the various accounts and report that such were not subject to any qualifications or comment.

In our opinion:

(a) The attached accounts are properly drawn up:

(i) so as to give a true and fair view of the matters required by Section 162 to be dealt with in the accounts, and;

(ii) in accordance with provisions of that Act.

(b) The accounting and other records and the registers, required by the Act to be kept by the Institute have been properly kept in accordance with the provisions of the Act.

HARRISON LOVE & VANCE
Chartered Accountants
R. W. VANCE — Partner
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is not just your ordinary radiometer

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- Internal calibration-standard
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