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Editorial

Sometimes I thought I'd never see the day. The copy for my 18th, and final issue, of Ergonomics Australia is about to leave my computer for its electronic journey to Melbourne to the tender care of Goro Jankulovski, the graphic designer who has now seen out the terms of two editors. Thanks Goro, your professionalism has been much appreciated. My heartfelt thanks are also extended to all contributors over the last three years, and my best wishes are extended to the incoming editor, Shann Gibbs.

My annual report to the 1999 AGM is contained in this issue so I'll not dwell on the past except to note that I have included in this issue a table of contents for the feature articles which have appeared in Ergonomics Australia On-Line over the last 3 years. I will be continuing to edit Ergonomics Australia On Line, and I'm hoping focussing on that alone will allow further developments to be made in that area. In particular, case studies describing work which you are proud of would be very welcome.

On that note – there are a large number of self-employed consultants out there, presumably doing work which would be of interest to other members, but they are category of member from whom I have seldom, if ever, received contributions describing their work. This puzzles me. Why is this potential marketing tool not utilised? Is it that people are not confident enough of what they do? Unlikely. Is that people are not willing to give away their trade secrets? Possibly. Is it that clients are not cooperative? Possible, but it is also an opportunity for the client to market themselves as a progressive, socially responsible, company. Or is it that people are just too busy servicing clients to find the time. I suspect this is the most common reason. If this is you, can I respectfully point out that the most successful small business owners are those who work **on** their business, not **in** their business. The pages of Ergonomics Australia and EAOL are a valuable marketing tool just waiting to be exploited to the mutual benefit of all concerned.

Thanks again to everyone who has contributed to Ergonomics Australia over the last 3 years.

Robin Burgess-Limerick PhD

Letters

**RE: - SYDNEY DESIGN 99 CONGRESS
26 - 29 SEPT 1999**

I have always felt doubtful about the extent of common ground between graphic, interior and industrial design for a joint congress. Creativity is required in many fields of endeavour. Although common ground exists, principally in visual strategies, I think it can be strengthened.

In 1969 at the ICSID Congress in London, the speakers were concentrated on industrial design, providing leaders in advanced fields, such as Thring on robotics, Loewy on the ergonomics of the interior of a space vehicle.

I would like to see a greater emphasis on ergonomics in design. Why is this aspect of graphic design so over-ridden by attention getting? Feeble tone contrast to the point of being unreasonable in common place. It even occurred in the congress handouts.

Attention to function, and utility through ergonomics is an opportunity to strengthen common purposes between the now three divisions of the DIA. In a letter to Ergonomics Australia, Feb 88, I suggested that "sound ergonomic design seems to correlate with appearance which remains acceptable over a long period of time, rather than a transient style".

If the tertiary design courses were to base design procedures on ergonomics instead of aesthetics, I think better designing for the community would result. And aesthetics would still be there, this time uncluttered by illegibility, awkwardness and unfriendliness.

In this respect our design endeavours could be more closely related to engineering design, having common purpose or ergonomics and cost effectiveness

Graphic designers involved in the advertising industry have the least in common with these objectives. They are mostly concerned with helping to persuade people to buy something, even a poorly designed product. In this way they often participate in a practice which is the enemy of good product design.

Charles Furey

President's Message

FROM THE SECRETARIAT

Well its been exactly twelve months since I joined the merry band and it has been an interesting year. I wish to say thank you to all members, those that I have spoken to throughout the year, those I met at the conference, as well as the members whose only communication with me has been through the various forms of mail, but most especially to the Board and the Various State Committees that I have dealt with throughout the year for your support and help in areas new to me.

I think that the Year 2000 is going to be an exciting year for all with new challenges. Please check out our Web site at www.ergonomics.org.au and let me know what you would like to be included on that site, any special interests or areas etc. At present I have on there a what's new site and a GST page which I update as more information comes in. This site will be receiving more development all the time so lets include some members suggestions. We want the members to use this site so please make suggestions and I will try to implement them (within my skill level and legalities of course). We have been investigating the various exiting features of the WEB so that we can make the site more relevant to you our members as well as to non members seeking information.

The Board and I would really like to make this site an important part of your membership and our communication with you and for members to communicate with each other this is especially important for those of you that are in remote or distant locations from the Branch activities, but is relevant to all members. Please let me know how it can be more effective for you to make use of.

Have a Safe Christmas and New Year

Christine Stone

Dear ESA Members,

RE: CENTRALISING OF FUNDS

1. The ESA currently has a membership around 580, and an annual budget close to \$250,000.
2. The 1998 Board Meeting passed the motion to centralise funds within the ESA. This was due to;
 - 2.1 Currently each of the 6 Branches, and CHISIG, have their own Bank accounts and books. Further, the Federal office also has it's own accounts and books. These each include both operating accounts as well as investment accounts. Fees are payable every time a transaction occurs on any account, and minimal interest is earned on the numerous accounts held around Australia. Centralizing the accounts will result in the ESA having only one operating account; one set of books to be audited (rather than 8); and sufficient investment funds to earn respectable returns on our money.
 - 2.2 Since the ESA became an incorporated body, the Directors, i.e. Board members are legally responsible for all ESA funds regardless which accounts are being held. Hence, the desire for greater knowledge of how the members funds are being spent.
 - 2.3 The ESA Board is very keen on pursuing equity for all members. It was found that the capitation system provided minimal funds to the smaller Branches, whilst the larger Branches not only received more funds but were better able to generate additional funds for ESA from seminars, etc. As a result, the members in the smaller Branches received a lower level of benefits for their fees. The move to invite each Branch, and SIG, to prepare an annual program, and budget, has seen a higher "per head" contribution to the smaller Branches, and an overall increase in funds returned to the Branches compared with the capitation allowances. This will place greater expectations on all Branches and SIGS, to conduct their programs prudently, and to pursue opportunities to use their funds to raise additional ESA income to enable this system to become self funding.

- 2.4 The ESA Board has taken numerous steps in 1998/99 to control the ESA finances. As a result the 1999 AGM reported the first surplus in the ESA accounts for some years. We will continue to diligently manage the ESA funds to ensure this continues.
- 2.5 The introduction of the GST in July 2000 will present a major headache for the ESA. The centralisation of account will ensure that we submit only one return from the Federal office rather than each Branch duplicating the administration. We are grateful to Christine Stone for learning all about the GST to guide us through the processes.
- 3 Guidelines are currently being developed in consultation with Treasurers of Branches and SIG's to develop the administration processes necessary for this to occur.
4. With the next financial year commencing on 1st July 2000, we hope to have approved Branch and SIG budgets beforehand. The Board would appreciate each Treasurer to start drafting their 2000/2001 budgets now, to ensure sufficient time for consultation and refinements to take GST into account.

RE: 1999/2000 STRATEGY PLAN

The Board have refined our Strategy Plan at the October meeting in Fremantle. Underpinning the strategy is an objective to improve the:-

- Professional standing of ergonomics and ergonomists
- Equity of benefits to all members

To meet the objectives, the major strategy areas are:-

1. PROFESSIONAL CERTIFICATION

We have developed a draft set of new Certification criteria, with the PAB, to replace those currently used for determining a Certified Professional Ergonomist (CPE). These criteria will be competency based and reflect both the ESA and the IEA (International Ergonomics Association) criteria. It is our intention to upgrade the standards expected in Australia for an applicant to be granted certified status. Having reached this criteria, the applicant would then be recognised as a professional with appropriate entitlements including use of post nominals .e.g. CPE. A range of other membership levels will also be retained but without post nominal or professional standing. The PAB, under mentorship from Margaret Bullock, are currently drafting materials for circulation to ESA members for consultation.

2. PROMOTION

A range of promotional initiatives are already underway. These include a focus on ergonomics in design. Co-operation with the Design Institute of Australia, and Universities teaching design is being sought.

Promotion of ergonomics research is also a major goal. This will be developed both directly with Universities but also Corporate and Government groups with a commitment to ergonomics. We are hopeful of developing a scholarship style patronage to encourage and support ergonomics research in Australia.

3. COMMUNICATION

Communication with ESA members directly from the Board is a key initiative. We are keen to use our Website "ergonomics.org.au" to foster direct interchange on a range of issues. Our new EA Editor, Dr Shann Gibbs, is

enthusiastically planning a fresh approach to our journal. The use of email will also be further explored to improve our communication systems.

4. PROFESSIONAL DEVELOPMENT

The scientific programs developed by the Branches and CHISIG during 1999/2000 will enable a range of ergonomics areas of study to be debated. The success of ESA 99 in Fremantle with interactive workshops will encourage Branches to utilise this, as well as formal presentations, to meet member's needs.

5. FINANCIAL

Our "return to the black" will be maintained through our ongoing management of expenses, particularly at the Federal level whilst increasing payments to all Branches this year. The introduction of Branch and SIG budgets has focussed greater accountability on the management of funds at this level. The energies of Branches and SIGs to raise additional revenue through their workshops, seminars, etc are an important supplement to our membership fees. Without these, we would not continue our financial health. Many thanks to those members who put their energies together for these programs.

I look forward to another great year at the helm of the ESA.

Regards,

David C Caple
President



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Annual Reports

PRESIDENT'S REPORT

It is with much pleasure that I present this report after completing my first year as President of the Ergonomics Society of Australia.

Early in 1999, our Society farewelled Ian Mitchell who has provided a pivotal role as the Executive Officer to the Society for 7 years. Late in 1998, a farewell was also given to Margot Lynch who was our back bone as the Administrative Officer for the last 10 years. With the departure of these two important sources of knowledge and support, the Executive of the Board has taken on many additional challenges. The appointment of Christine Stone to our Secretariat, commencing in 1999 has provided a person of unwavering commitment and valuable talent for the ESA. On behalf of all the members I would like to thank Christine for her tremendous input and support during her first year of employment. I would also like to particularly acknowledge my fellow Executive Members, Tony Payne, Honorary Federal Secretary, and Ros Kushinsky, Honorary Federal Treasurer, for their tireless work during this last year. I would also like to thank each and every member of the ESA Board. Their dedication to their task has been challenged with an endless stream of emails on a wide range of issues to be debated and resolved throughout the last twelve months. I am sure all members of the ESA would join me in thanking them for their contribution.

1999 has provided the ESA with a new range of challenges and achievements. Our strategic plan agreed at the start of our term of office highlighted four key areas.

1. MEMBERSHIP

During 1999, the membership of the ESA has continued to maintain around 580 members. With the amount of interest currently being demonstrated for application information, it is anticipated that membership numbers will continue to grow into the year 2000.

A major project has been undertaken during 1999 through the formation of the Education Review Committee (ERC). This sub committee represents ESA members from the major teaching universities across Australia together with practitioners and research representatives. The objectives of this committee have

been to review the membership structure of the ESA, with particular focus on the area of certification of ergonomists. The committee has developed a range of options for consideration by members with the opportunity to make significant structural changes during 2000. This project has endeavoured to adopt the results of the ESA competencies project, developed over the previous 4 years, as well as to benchmark our standards for certification against the International Ergonomics Association requirements.

As a professional association, it is our goal to set standards which not only encourage participation of those persons interested in learning about ergonomics, but also setting appropriate competencies to differentiate those individuals who are appropriately qualified to be called Certified Ergonomists within the general market place.

The Vic Branch have taken the initiative of surveying a sample of members on a range of service and marketing issues. This has been developed in consultation with RMIT students. We look forward to extending this survey across Australia during 2000.

I look forward to the final deliberations from this committee and hopefully to present a package of recommendations during 2000 to ESA members.

2. PROFESSIONAL DEVELOPMENT

The heart of activity within the ESA relates to the programs conducted at a Branch level. The 6 Branches of ESA have all been active in initiating, and conducting a wide range of professional development opportunities through their scientific programs during 1999. My congratulations are extended to the committees of each of the branches for their dedication to provide a high quality of scientific meetings as well as a range of social interaction between members of the ESA in their states.

A range of seminars and workshops on specific ergonomic areas of interest have been conducted for both ESA members, and also for non members in creating an opportunity to learn more about ergonomics. The tentative programs for 2000 indicate that a further high quality range of professional development opportunities will be available through the branches to our members.

During 1999, a range of initiatives have been implemented as joint programs with fellow professional associations. These have included physiotherapy, industrial engineering, occupational therapy, psychology and architecture. The opportunity to jointly work with our professional peers has shown the advantages for greater understanding of the competencies of each other's professions.

During 2000, the ESA will be investigating the opportunity to utilise a website initiative to bring together all of those professional associations which have synergies with ergonomics. This should enable a greater exchange of information and opportunities for professional development.

The opportunity to extend the development of ergonomics through the participation in Australian Standards committees, Government enquiries, and evaluation of legislation initiatives, have been taken up by ESA members with specialist expertise.

Our main special interest group, CHISIG has become reactivated during 1999. We will miss Gitte Lindgaard and her years of tireless mentoring of this group as she heads for Canada.

3. FINANCIAL

During 1999, the consolidation of branch funds into one centralised investment account has been implemented. This has resulted in a substantial opportunity for interest bearing investments to be undertaken to the benefit of all members of the Society.

In addition, during 1999 the ESA have ceased the process of capitation whereby each branch had previously received an amount of funding based on their number of members. This was seen as discriminatory against the smaller branches to provide an equitable level of service compared to the more financially stable larger branches. In August 1999, all branches submitted their first budget for the forthcoming year to the Board. These are now under review and funding will be provided back to the branches upon approval of these budgets. This process enables greater accountability and flexibility at the branch level to meet the service needs of their members.

It is pleasing to note the economies that have occurred during the last year resulting in a turnaround from a negative financial return into a positive cash flow situation for the Society for the first time in many years. With continued diligence in controlling expenditure, and promoting fund raising opportunities, it is anticipated that further financial stability will be achieved during 2000.

4. PROMOTING ERGONOMICS

The promotion of ergonomics has been occurring both internally within ESA and externally. The quarterly publication "Ergonomics Australia" is the main contact point with all members of our society as well as external parties. We say thanks to Robin Burgess-Limerick who is retiring this year as our editor and sincerely acknowledge him for his years of contribution. We also thank the editors of our state newsletters who also spend considerable time in collating and disseminating information to our members promoting the activities of ESA, and ergonomics in general. We welcome Shann Gibbs as the new editor of EA.

Our gratitude is also extended towards Margaret Bullock for her ongoing participation in representing ESA at an international level. Margaret has continued to provide a professional representation of ergonomics to the IEA as well as being actively involved in their sub committees such as certification of ergonomists.

During 1999, the role of computer technology as a means of promoting ergonomics has been a major issue for our time and attention. The La Trobe University initiative (Owen Evans) through Ergonoz has provided an active interchange on a whole range of ergonomics issues amongst both members and non members of ESA. The evolving development of an ESA website has continued during 1999, initially through the web master work by Mark Dohrmann and subsequently in the establishment of an independent ESA site through our Federal Office.

The framework for this site has been developed through the WA Branch, and Swinburne University of Technology has been involved in the development of the web page. We look forward to the development of this technology

General Secretary's Report

both as a web site presence and also as an area for growth in the EA On-Line activities. We were again delighted to work with Dr Leon Straker (Curtin University) with his hosting of Cyberg 99. This innovative interactive conference provides a wonderful opportunity to promote ergonomics both within Australia, and internationally.

Ergonomics has received much promotion through our annual conferences.

My grateful thanks to members of the Victorian Branch committee for hosting the successful ESA 98 conference in Melbourne, and also to the WA Branch committee for the 35th Annual Conference for ESA 99 now under preparation for Fremantle.

The initiative of the Queensland Branch in organising "Ergo Week" as well as the promotion of ergonomics through specialist seminars conducted by NSW Branch are examples of the ongoing promotion of ergonomics into the community.

During 1999, various members of ESA have become active lobbyists within the media to promote areas of ergonomics research relevant to issues of public interest. It is my hope that during 2000, we can continue to promote the diversity and depth of professional research currently undertaken by ergonomists across Australia and to provide a broader appreciation of ergonomics beyond OH & S issues.

A range of promotional pamphlets and materials have been developed by the ACT and South Australian Branches.

Finally, I offer all members of the ESA my thanks for their support and encouragement in my first year as the Federal President. I acknowledge that this is a challenging but highly rewarding role and I look forward to completing my second year during 2000.

Yours sincerely,

David C Caple
ESA President

The President's report clearly outlines the major activities and direction taken by the ESA Board and Executive since the last AGM in October 1998.

To complement the President's report this report summarises the main activities undertaken within the role of General Secretary of the ESA.

Since the October 1998 three Board meetings have been held by teleconference in the months of February, May and August with the final meeting to be held as a face to face the weekend prior to the start of the annual conference in Fremantle. The decision to hold three teleconferences and one face to face instead of two of each was taken on a trial basis to reduce the cost of Board meetings to the Society. In addition the Executive have held four official meetings (November, April, July and September) and numerous informal meetings to discuss Society business.

The role of General Secretary has changed considerably since the departure of Ian Mitchell. Administration of the Board and Executive meetings now forms a substantial part of the General Secretary's role and I have found it challenging both in terms of time commitment and procedural correctness. It is hoped that additional information and direction will be available for the next incumbent to ensure a smoother and easier changeover. I must also congratulate and thank Christine Stone for her competence and cheerful assistance in resolving the many issues that arise in the day to day administration of this Society.

Another significant component of the General Secretary's role is to accept and sign off on new membership applications. With the assistance of Christine this process is gradually being improved and it is hoped that in my second term the procedures will be in place to streamline the processing of applications and to improve the communications with Branches about membership procedures. Since last October, 20 new member applications have been processed, 2 upgrades to member and 20 new affiliates have been approved.

Communications between Board members and sub-committees has made extensive use of e-mail, generally resulting in greater input, faster response but a corresponding increase in workload. It is hoped that

Treasurer's Report

further use in the coming year will be made of this method to improve the communication between the Board, Branches and individual members

One of the less pleasant activities undertaken this year has been to deal with several formal complaints presented by members about activities of other members. Whilst these complaints have been dealt with, it has highlighted a need for the Board and the Society as a whole to be more active and particular in specifying policy and procedures so as to minimise the likelihood of complaints arising.

Finally I would like to thank my fellow Executive members, Board members and Christine Stone for their support and tolerance in what I have found to be a very steep learning curve and challenging role. I look forward to smoother and more effective second term.

Tony Payne

THANK YOU

In presenting this report I would like to express gratitude for the patience and good will of my Executive Co-members, David Caple and Tony Payne, as well as the Board, as we have worked together over this year. I am also very grateful to Christine Stone who has worked tirelessly and creatively, to manage in a very efficient and proactive way the administration of the Society. We are indeed fortunate to have someone of Christine's calibre to work with. Her abilities and training in the financial accounting area are invaluable to the Society and a Treasurer. Arnold Harrington, our Auditor, has been most helpful with advice and answers.

Auditor's Note and Reading the Financial Statements

The Statements for the 1997/98 and 1998/99 years are not strictly comparable. This relates to accounting of the way the Society asks for payment of its subscriptions from members. We pay around June for the membership in the following financial year (when not in arrears). So money paid in June pertains to next year's operations of the Society.

The auditor's NOTE (1)(b) explains that for a number of previous years, subscriptions paid in advance before the end of the financial year have been counted in the year they were received, in a cash accrual approach. For a truer, more correct accounting they should be counted in the *year for which they were actually paid*. He has determined that such proper accounting should be introduced for this aspect this year.

The way he has done this is clearly visible in the Balance Sheet, under the Member's Funds category. There is a one off entry of *98/99 Subs received in advance* which represents the amount paid in for this year but which had been accounted for in last year, i.e., 97/98. This represents the truer opening balance from last year. NOTE that amount has been accounted for in the *Subscriptions* amount in the Income and Expenditure Statement.

But the figures for the 1997/98 year have not been recalculated. Because last year's Statements of account have been accepted already by the members, it was not possible to go back to last year's statement and change it

to ensure that it became comparable with this year's statement. However, next year, it will be possible to view and compare two years in which this more correct accounting is carried out.

THE FINANCIAL STATEMENTS AND AUDIT

The most important aspect of the Financial documents presented is that while last year the Society had a surplus of expenditure, this year we have a substantial surplus of income - \$18,000. This has come about largely due to an increase in income, from the workshop organised by NSW and the '98 Melbourne Conference. This has been complemented by some Branches reducing or reversing the trend for excessive expenditure over income.

Because of the comments on accounting methods above, it is not really clear whether, after a similar change in accounting methods for subscription for the figures in 1997/98, the loss recorded in 1997/98 would remain at the same level.

We do know that in previous years, a larger proportion of subs payments occurred after July 1 than in this year so a different way of accounting for early subscriptions may not have such a dramatic effect as it has for 1998/99. A significant proportion of 99/2000 subs were received in June 1999, after the first call, and this is due to Christine being extremely efficient and also organising a credit card payment facility. And of course a large proportion of members responded in kind, by paying quickly. So these funds will be accounted for in next year's balance sheet.

There has been an increase in the Society's Current and Total Assets. The Board has also contributed to this good result by decreasing the cost of their travel and meeting expenses and declining to continue with the position of consultant.

Many will be wondering what the category of Secretariat represents on the expenses side and why it is so high. I feel that explanation is necessary.

This category includes the cost of running the federal office including: wages insurance, stationery, rent and utilities, phone/fax/email, postage, photocopying, and travel by the Executive officer to attend executive meetings. But it also includes advertising in the Yellow

Pages for all Branches, all printing of directory, stationery and certificates. As well, it includes the printing, posting of branch newsletters and EA, Branch administration such as phones, letterboxes, copying and faxes, as well as photocopying and postage done for PAB activities. This year it also includes the cost of production of the posters and the banner. Essentially, apart from the production of Ergonomics Australia, all communications within the Society are represented in this amount. The production of the competencies booklet has its own category.

Some of these costs will come down as use of email continues to grow, in communication and for dissemination of newsletters.

The decrease in travel costs for this year has come about because the Board had only one face-to-face meeting in the last year. Teleconferencing has been a good money saver.

For the Society to improve its position, two approaches are required. Income producing activities, particularly ones that tap into non-member audiences, are essential for greater asset accumulation. This must be matched by prudent expenditure, both by the Board as well as the Branches, with initiatives taken to use technology to. Careful budget preparation by the Branches coupled with restraint in their spending will help to achieve the latter.

CONSOLIDATION OF FUNDS

It has been a year now since the Board has decided that the funds of the society should be consolidated at the Federal Office and that the Branches should operate on a budget rather than a capitation system.

There are several benefits. Firstly, the Treasurer and the Board are able to take the responsibility for managing the Society's money, for which they have a legal duty. Secondly, the smaller Branches will receive adequate funds rather than just a small capitation, to cover their planned activities. This is important since the smaller branches are also in a more difficult position in holding conferences and activities which make a large profit. Thirdly, the society is able to get a better return for its cash investments if these are done as one lump sum rather than six smaller term deposits. Lastly, finances within the Society will be streamlined and this will

reduce the time taken for the audit and the cost of the latter. There will also be a benefit in consolidating the recording of GST issues related to the workings of the Society.

There will be an opportunity to increase interest income with the larger lump sums held centrally, since better rates are attracted by larger amounts and Bank bills can provide a higher income still. If the Society can keep a large amount in for several rollovers, then the taxes/fees per earnings ratio will fall and this will also assist with income.

This process has begun and will be finalised over the next few months. Such further consolidation will enable a large sum to be placed in a good, interest bearing entity for a length of time.

The Board and the Executive are confident that as the Branches see how this new arrangement is working, they will feel confident that Members' services they develop and provide will not suffer and will in fact be enhanced by this approach. At the same time they have already shown their commitment to responsible spending.

BRANCH BUDGETS

The Branches have prepared what appear to be responsible and well thought out Budgets.

The Board has approved the Branches' proposed 1999/2000 Budgets at the meeting held at the weekend.

The Board is centralising all funds into a central ESA account, and funds will be accessible by Branches up to the budgeted amounts.

Larger expenditures for Seminars will be subjected to Board approval and seed-funded as required, as the annual conference is at the moment, until income starts to come in for these events.

Each Branch will be expected to commence drafting the 2000/2001 budget by December 1999, based on the ESA strategy plan. The Board expects to review and finally approve these budgets at the AMAY Board meeting.

The Treasurers and I met yesterday to begin discussion on rapid access by Branches to budget funds, and this is to be finalised shortly. There are all sorts of technological advances in banking which will ensure

that Branches can fund their commitments in services and activities for members.

CHISIG

The assets of CHISIG are accounted for in the Financial Statements, and budgets are submitted by this SIG.

IMPLICATIONS OF THE GST

It is as yet too early to be able to get definitive answers about the full implications of the GST for incorporated societies and their members. However, we know that some of our services and charges to members will attract the tax and some of the services and goods we purchase will need to be charging the tax.

Christine Stone has been proactive and has attended Seminars including one run by the Tax Office, and has made a number of inquiries of the Tax Office.

In essence, we will be paying GST on many goods and services provided to the Society and we need to work out how we can or should charge or pass on the tax to those to whom we provide our services. We will also have to charge GST for some services.

There will need to be a lot of tracking and recording of business activities at both the Federal and Branch level, and reporting to the ATO will need to be remitted regularly by a deadline. This is likely, at least initially, to be a burden at every Branch as well as for the Federal Office and the Board.

The need to track the tax means we will need to upgrade the accounting software used within the Society and ensure that all involved have some training as the scope and details of what has to be done.

Ros Kushinsky
Treasurer

**THE ERGONOMICS SOCIETY OF AUSTRALIA
INCOME AND EXPENDITURE STATEMENT FOR THE YEAR ENDED 30 JUNE 1999**

| 1998 | INCOME | 1999 |
|--------------------------|--|-----------------------|
| 80,977 | Subscriptions (Note 1b) | 89,733 |
| 10,910 | 1998 Annual Conference | 11,107 |
| 3,607 | Joining fees and PAB Application Fees | 4,360 |
| 8,466 | Interest Received | 7,697 |
| 1,735 | Income from Seminars & Workshops etc | 29,325 |
| 9,167 | Sale of Publications Advertising etc. | 11,823 |
| 2,398 | Income Special Interest Groups | 6,467 |
| <u>1,129</u> | Royalties | <u>1,521</u> |
| <u>118,389</u> | Total Income | <u>162,033</u> |
| LESS EXPENSES | | |
| 62,914 | Secretariat | 61,527 |
| 3,425 | Audit Fees | 3,500 |
| 9,201 | Conference Proceedings | 10,275 |
| 1,002 | Depreciation | 1,111 |
| 600 | Grants | 0 |
| 2,025 | I.E.A. Dues | 3,100 |
| 2,055 | Prizes | 300 |
| 18,836 | Publications & Promotion Expense | 19,261 |
| 3,241 | Projects - Competencies | 2,836 |
| 3,913 | Expenses - Special Interest | 6,532 |
| 2,521 | Expenses - Seminars, Workshops etc | 17,897 |
| 6,423 | Members Meeting Expenses | 7,881 |
| 14,887 | Travel & Council Meeting Expenses | 8,605 |
| <u>2,373</u> | Prof Affairs Board Expenses | <u>676</u> |
| <u>133,416</u> | Total Expenses | <u>143,501</u> |
| 0 | Surplus of Income over Expenditure for year | \$18,532 |
| -\$15,027 | Surplus of Expenditure over Income for year | \$0 |

**THE ERGONOMICS SOCIETY OF AUSTRALIA
BALANCE SHEET - AS AT 30 JUNE 1999**

| 1998 | | 1999 |
|--|-----------------------------------|-----------------------|
| CURRENT ASSETS | | |
| Cash | | |
| 271 | Cash On hand | 270 |
| <u>112417</u> | Commonwealth Bank & Credit Unions | <u>198,473</u> |
| | | |
| Receivables | | |
| <u>257</u> | Receivables | <u>1,996</u> |
| | | |
| Investments | | |
| 110815 | Bank\Term Deposits | 67,775 |
| 21177 | 1999 Conference etc Advances | 8,000 |
| <u>20</u> | Shares in Credit Unions | <u>20</u> |
| <u>244957</u> | Total Current Assets | <u>276,534</u> |
| | | |
| Non-Current Assets | | |
| Property, Plant & Equipment | | |
| 8439 | Office Equipment (at cost) | 6,174 |
| <u>-7311</u> | Less Accum Depreciation | <u>-4,427</u> |
| <u>1128</u> | Total Non-Current Assets | <u>1,747</u> |
| 246085 | Total Assets | 278,281 |
| | | |
| Less Liabilities | | |
| Current Liabilities | | |
| Creditors & Borrowings | | |
| 10214 | Accounts Payables and Accruals | 9,526 |
| 0 | Subs received in advance | 43,000 |
| <u>10214</u> | Total Current Liabilities | <u>52,526</u> |
| 0 | Non-Current Liabilities | 0 |
| <u>10214</u> | Total Liabilities | <u>52,526</u> |
| \$235,871 | NET ASSETS | \$225,755 |

Members Funds

| | | |
|----------------|---|----------------|
| 250,898 | Opening Balance | 235,871 |
| 0 | 98/99 Subs received in advance | -28,648 |
| 250,898 | | 207,223 |
| 0 | Surplus of Income over Expenditure for year | 18,532 |
| -15027 | Surplus of Expenditure over Income for year | 0 |
| 235,871 | Closing Balance | 225,755 |

Secretariat Report

This has been an eventful year for the secretariat with a change of staff and structure. Margot Lynch retired in December 1998 and Ian Mitchell in February 1999. With my arrival in December there has been a change in structure.

In November 1998 a new computer was purchased to ensure Y2K compliance and to speed things up somewhat. We were also looking at changing to a new membership database this was also due to the Y2K problem.

1999 started out very quite enabling me to find my feet and learn about the society. Things soon built up. The Membership directory posed a challenge but I have now learnt a few things that will make the next one easier to do. Whilst getting this organised we had a computer help firm here in the ACT looking at transferring the database from Rapid file to Microsoft Access. This was delayed when they became swamped with other work eventually in May they decided not to proceed with our job.

It took a little while but we now have a basic database up and running on Access and whilst there have been some problems we are gradually sorting these out. So all will hopefully run smoother now, whilst also allowing me to improve some of the procedures that we do. The Membership Directory and the Renewal forms are the next challenge using this program.

I have also spent time getting access to a web site of our own this is finally happening after many hours our Temporary page should be on-line now. We will shortly be having a much more professional page designed by people who know a little more than I do about this sort of thing. Again this has been another learning curve for me. With the new technology we are getting more and more E-mails as part of our correspondence we are now averaging between 5 and 20 per day during busy periods.

I have tried to find out how the GST will affect the Society and also our members this is proving difficult at this stage as even the Tax office is not sure of some of the answers. I plan to keep the members updated through Ergonomics Australia and now through our Web page.

The renewals this year have come in quite quickly with about 30% of members taking up the option to use their Credit Card offered for the first time this year. This is a service that costs the society to provide for its members however, it has been noticed that in many cases the fees have been received earlier than in the past thereby enabling us to have more funds in our Cash Management account gathering larger amounts of interest. We have at present 53 members who have not paid their fees for this year; this appears to be a better result than last year at the same time. It is to be hoped that these members will all have paid their fees shortly.

We have had over 100 enquires about membership through this office however, 90 of these have not taken the decision any further, for one reason or another. Many of these requests have been via E-mails but the majority has been through phone calls to the office.

I take this opportunity to thank all members for their patience during the past 10 months, and to say that I think that now I have covered all important events in the ESA's calendar I have the experience to cope and hopefully improve service to the members in the next twelve months.

Ergonomics Australia Editor's Report

It is my pleasure to report on the progress of *Ergonomics Australia*. This will be my last report as Editor because, as foreshadowed in my report at this time last year, the December 1999 issue of *Ergonomics Australia* will be my last as editor. I would like to take this opportunity to thank all contributors to the journal over the last three years, and especially those branch correspondents who have kept the whole society abreast of happenings around the country. I also thank all board members who have served during this period for their cooperation with my various requests.

The production of *Ergonomics Australia* is a substantial financial commitment made by the society. The details for 97/98 and 98/99 are presented below.

FINANCIAL SUMMARY

| 97/98 | Expenditure | 98/99 |
|---------------|----------------|---------------|
| 600 | Editors Costs | 600 |
| 6,196 | Graphic Design | 6,084 |
| 6,277 | Printing | 5,212 |
| 4,285 | Postage | 3,832 |
| 17,358 | Total | 15,718 |

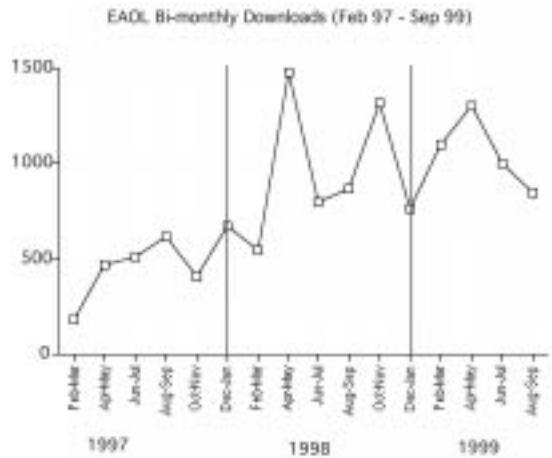
Notes: 97/98 costs include \$1370 printing and postage for 96/97

| 97/98 | Income | 98/99 |
|--------------|---------------|--------------|
| 2,091 | Advertising | 2,610 |
| 150 | Subscriptions | 220 |
| 2,241 | Total | 2,810 |

Expenditure was within that budgeted (\$16,080) and income exceeded that budgeted (\$2,700). The net cost of the journal for 1998/99 was \$12,908, or \$2,151 per issue.

I look back over the last three years with a mixture of satisfaction and regret. I have pleased with the gradual increase in the number of persons downloading *Ergonomics Australia On-Line*. As the figure below demonstrates, monthly downloads of the index page are

steadily increasing. More than half of these downloads are from overseas, a small proportion are ESA members, and the remainder are Australian non-members. This medium represents one of the most the most cost-effective means by which the society can meet its aim, that is *"to advance the science of ergonomics in Australia by promoting research and education in ergonomics and the application of its principles"* and I urge the current and future boards to continue to provide free access to all.



I have been pleased with the quality of submissions to the journal, but I can't help feeling that there are many more members out there who have interesting stories to tell. The heart and soul of ergonomics is in its practice. Can I please encourage everyone to support the incoming editor by taking the time to put fingers to keyboard and prepare a case-study on a recent project.

Robin Burgess-Limerick PhD

CHISIG Treasurer's Report

1999 has seen a move to centralising the CHISIG committee in the state of Victoria, which has resulted in a more cohesive and efficient committee effort. It has also enabled a "cleanup" and consolidation of the CHISIG funds, which had been dispersed through several states. These funds, left over from previous OzCHI Conferences, were, until this year, either being used to resource CHISIG activities outside Victoria, or were lying dormant.

CHISIG's financial resources were gathered together in order to fund a major strategic plan and marketing campaign to resurrect CHISIG's flagging momentum. The Plan and the campaign were set into motion with the formation of sub-committees dedicated to developing CHISIG marketing materials, a CHISIG website, a new look-and-feel CHISIG newsletter, a membership drive, a sponsorship drive, an Human-Computer Interaction student prize, and a series of Industry Breakfasts.

These activities have been resourced, and continue to be resourced by funds mentioned earlier. Other expenditures over the 1998-99 financial year have included grants to the libraries at the University of New South Wales and the University of Technology, Sydney; seed funding for the OzCHI'99 and 2000 Conferences; a student prize for the best website to represent CHISIG; regular and ongoing marketing consultation; and CHISIG meeting costs.

Activities planned for next year which require funding have been outlined in a draft budget for 1999-2000. Apart from the usual annual grants and CHISIG meeting and conference expenditures, these activities will essentially be maintenance activities for promotional channels and events established this year, for example, the new CHISIG website. Income for the next financial year will mainly be generated by new and renewed memberships and sponsorships.

Whilst CHISIG's financial status is healthy at this time. It is anticipated that a substantial portion of our funds will have been depleted by the end of the year. The CHISIG committee are relying heavily on membership and sponsorship drives currently underway to generate income for the next financial year, and to put CHISIG in a strategic financial position to promote itself and further grow.

At the time of writing, CHISIG's financial statements are still being audited for the financial year to June 1999 under the audit of the Ergonomic Society of Australia Incorporated, as required by the Associations Incorporated Act.

Mimi Iakovidis

IEA Councillors Report

The following items, discussed at the recent IEA Council meeting may be of interest to the ESA.

IEA STRATEGIC PLAN

The IEA has completed its Strategic Plan for the next two year period. The major goals are to develop more effective communication and collaboration with Federated Societies; to advance the science and practice of ergonomics at an international level; and to enhance the contribution of the ergonomics discipline to global society.

The priority issues identified for urgent implementation include the promotion of collaboration in ergonomics projects among governmental and international bodies; to provide support for regional groups in ergonomics where this does not conflict with the operations of Federated Societies; to facilitate the exchange of views and experiences among the leaders of Federated Societies and to facilitate joint events between Federated Societies where this does not conflict with their own operations.

The ESA is invited to discuss these plans and to consider how the Society might contribute to such IEA activities or how its operations might be enhanced by them.

IEA HISTORY

The IEA has appointed Ilka Kuorinka as IEA historian and during the next few months, it is planned that a descriptive history of the IEA will be prepared by pioneers of the IEA and the collation of significant IEA documents. It is planned that this IEA publication be completed by IEA 2000 and that it would be distributed free of charge to the Federated Societies.

IEA CONGRESS 2000

Preparations for the IEA Congress 2000 to be held between July 29 and August 4th, in San Diego, USA are well in hand. The multi-session symposia and twelve plenary sessions will account for approximately 40% of the technical program. Other sessions are being arranged by 28 specific technical committees. It is anticipated that the topics and principal speakers will be advertised shortly. It is hoped that Senator John Glenn (former astronaut) will be the opening key note speaker.

In addition to technical sessions, it is planned that a series of interesting technical tours will be arranged to take place during the conference, while various full-day and half day professional development workshops will be scheduled for before and during the congress. A broad spectrum of pre- and post congress tours will be available. Early registration is available for \$US325, with the banquet (\$US75), welcome reception (\$US30) and hard copy of the proceedings (\$US85) being optional extras.

IEA CONGRESS 2003

This Congress will be held in the ASEM Convention Centre, Seoul Korea, between August 24 and 29, 2003. Delegates to IEA 2000 will be invited to suggest areas of particular interest that they would like to have included within that Congress program.

IEA CONGRESS 2006

IEA Congress 2006 will be arranged by the Ergonomics Association of The Netherlands with the co-operation of some other European Societies and will be located in Maastricht, The Netherlands.

OTHER CONFERENCES

Another conference to be supported by the IEA is the Ninth International Conference on Human-Computer Interaction, on August 5 -10, 2001, in New Orleans, Louisiana, USA.

JOURNALS

The Journals currently endorsed by the IEA include the official IEA Journal: Ergonomics, International Journal of Occupational Safety and Ergonomics; International

Journal of Industrial Ergonomics; Human Factors and ergonomics in manufacturing and the International Journal of Cognitive Ergonomics. These endorsements imply that members of the IEA Federated Societies (such as the ESA) receive a discount on a subscription to the Journal.

CHECK POINTS 2: AGRICULTURE

A new Checkpoints booklet relating to ergonomics in agriculture is planned as a joint IEA and ILO venture. It is anticipated that this Booklet will provide a valuable resource for application in industrially developing countries.

DIRECTORY OF ERGONOMICS EDUCATION PROGRAMS

Under the chairmanship of Dr Leon Straker, an IEA Committee is currently developing a new edition of the Directory of Ergonomics Educational programs. This comprehensive document will be effectively categorised and organised for ease of reference and will be available on the internet. The Directory will be finalised for presentation at IEA 2000.

PROFESSIONAL PRACTICE AND STANDARDS

The IEA documents relating to IEA Core competencies, Minimum criteria for Certification and Criteria for endorsement of a Certifying body will be collated into one booklet for distribution to Federated societies. No major changes have been made to any of the documents which were previously circulated in 1997, but the IEA seeks comments on any of the guidelines through the relevant councillor, in preparation for its review of standards at IEA 2000.

ACCREDITATION OF ERGONOMICS EDUCATIONAL PROGRAMS

The IEA Accreditation Committee, chaired by Prof Margaret Bullock, has drafted guidelines for the accreditation of ergonomics educational program and will edit this draft progressively before presenting the guidelines to IEA Congress 2000. It should be noted that the IEA will offer these guidelines to Societies for their reference or use, as they see fit. The IEA has no plan to carry out accreditation procedures on any individual program.

AWARDS

Nominations for IEA awards are being sought by the IEA and should be sent to the Secretary General, Dr Waldemar Karwowski (karwowski@louisville.edu) before the end of this year.

Details of these awards have been circulated separately.

IEA LIBERTY MUTUAL PRIZE IN ERGONOMICS AND OCCUPATIONAL SAFETY

This award of \$US 5,000 recognises outstanding original research leading to reduction or mitigation of work-related injuries and/or advancement of theory, understanding and development of occupational safety research.

The winner for 1999 is Dr Shirleyann M Gibbs, of Sydney, who submitted a paper entitled 'Safety in health Services with particular reference to the handling of cytotoxic drugs'. The research investigated safety among health industry workers who handle cytotoxic drugs and their related waste products. The multinational study revealed a serious issue relative to regulations and indicated an even greater concern with attitudes and training. It is understood that the award will be made during the annual conference of the New Zealand Ergonomics Society, this year.

DISTRIBUTION OF PUBLICATIONS AND BOOKS TO IDCS

Donations of books, Journals, and Conference Proceedings may be made to a number of industrially developing countries. Contact addresses have been established in Brazil, Ukraine, Indonesia, Cuba, China, Lithuania, Thailand.

Specific addresses may be obtained from Margaret Bullock (m.bullock@mailbox.uq.edu.au)

IEA HOMEPAGE

The IEA homepage is currently operational at the address:

<http://ergonomics-iea.org> (IP:130.230.37.10)

Web based copies of Ergonomics International are on the site.

Any person who has news they would like to be added to the web site should submit to the IEA news editor through the Production Manager, Prof Markku Mattila (mattila@cc.tut.fi) using RTF.

IEA JOURNAL ON THE INTERNET

The web site for the IEA Journal of ergonomics is:

<http://ergonomics-iea.org/iea/journal/>

It is anticipated that the first issue of the Journal will be published shortly.

Submissions of articles for publication are invited and should be sent to Prof Martin Helander: mahel@ikp.liu.se

NEW PROCESSES FOR ELECTION OF IEA OFFICERS

A more effective process for nomination and election of IEA officers has been developed. Nominations for the next election will be sought in early 2000.

ERGONOMICS DEFINITION

The IEA is endeavouring to prepare a definition of ergonomics which reflects current thought about the aims and practice of the discipline. The current draft reads as follows:

Ergonomics is the scientific discipline concerned with the fundamental understanding of interactions among humans and other elements of a system. Ergonomics contributes to the design of jobs, tasks, products and environments in order to make them compatible with the needs, abilities and limitations of people.

Societies are invited to comment on this draft and to suggest modifications as deemed appropriate, through Margaret Bullock.

ADDRESSING THE STAGNANCY IN MEMBERSHIP OF ERGONOMICS SOCIETIES

The membership in Ergonomics Societies around the world appears to have stopped increasing. The IEA has discussed this issue and is exploring possibilities for encouraging future growth. Societies are invited to share any ideas they might have to promote interest in the discipline.

Margaret I Bullock, ESA Councillor to IEA

Branch News



WA

1999 conference

The 35th National Ergonomics Conference has been and gone. We would like to take this opportunity to thank every one involved who helped to make the conference a success - and a lot of fun. I think you'll agree that the Keynote speakers were fantastic and that they were all so approachable and willing to share their thoughts and ideas - and so very enthusiastic.

Thankyou to Dr Arne Aaras, Dr Kee Yong Lim and Verna Blewett.

The workshop presenters were called on to do a mammoth job - not for them the 20 minute presentation, followed by accolades and relaxation. For these workshop presenters, their job entailed one and a half hours of presenting, and for some, three hours of presenting. Thank you so much for your knowledge, time, skills and enthusiasm.



Rod Powell, Verna Blewett and David Caple preparing for the great debate

The Great Debate was a highlight - for those who had to leave to catch planes - you missed a fun afternoon. The debate was entitled Ergonomics is Irrelevant to Risk Management and was hotly debated on the affirmative by Verna Blewett, David Caple and Rod Powell and the negative by Alan Wilson, Cassie Patterson and Alan Lees. The debate was chaired by Richard Robinson.

Ian Gibson showed his ergonomics talent with a noise meter to measure clapping. We in WA, have always known about Rod Powell's sense of humour, and were

delighted to find out that Verna and David have equally devious minds. Thanks to you all for giving us a laugh and for changing the title (part way through the debate) to Ergonomics is Irreverent to Risk Management.

I hope you all caught the sun setting over the ocean at the Conference dinner. Shann Gibbs entertained us so wonderfully with her after dinner talk and we thank her for taking this on at reasonably short notice.

Freo may never be the same after the 'Ergos do Freo' afternoon. It was an afternoon of doggy doo bags and tacky souvenirs. (I'm still not sure that I know what a dodecahedral structure is.)

Thankyou to all who attended the conference - we hope we met our objective to send people home with new skills. For us it was a great time to renew old friendships and to make new ones. We are looking forward to the 2000 Conference in Adelaide and wish the Organising Committee all the best for their preparations.

See you in Adelaide in the new Millennium.

Kerry Jones and Angela Summers
Ex Conference Convenors



SA

Fremantle is a hard act to follow - but in SA we'll be doing our best! Watch out for information about the ESA Conference in 2000. ESA2000 will be held in the heart of Adelaide at the Hilton Hotel from 9-11 October 2000. This is just after the Olympics - so if you're overseas, start planning to visit South Australia - home of some of the world's best wines! - for what promises to be a great conference.

There will be room for academic papers, practitioner workshops, site visits, a trade display and we hope to attract the public to some of the conference. In addition we plan to hold some post-conference, technical workshops. For example, we expect there to be a workshop on lighting for screen-based workplaces.

SAPRO

Tel: (08) 8227 0252 Fax: (08) 8227 0251
email: sapro@camtech.net.au

See you there!

Verna Blewett (Convenor)

Liberty Mutual Prizes

2000 LIBERTY MUTUAL PRIZE IN ERGONOMICS AND OCCUPATIONAL SAFETY AND

2000 LIBERTY MUTUAL MEDAL IN ERGONOMICS AND OCCUPATIONAL SAFETY

THE 2000 LIBERTY MUTUAL PRIZE

The award of US \$ 5,000 seeks to recognize outstanding original research leading to the reduction or mitigation of work-related injuries and/or to the advancement of theory, understanding and development of occupational safety research.

To be considered for the Liberty Mutual Prize, the applicant must submit a letter of application and a research paper. The paper must be:

- An original report of laboratory, field, or intervention research
- Relevant to the field of occupational safety and ergonomics
- Non-proprietary
- Unpublished at the time of submission
- Thirty pages or fewer, single spaced.

Relevant disciplines include: ergonomics, epidemiology, biomechanics, cognitive and behavioral psychology, design, physiology, economics and optimization, and so forth.

THE 2000 LIBERTY MUTUAL MEDAL

In addition, the Liberty Mutual Medal in Ergonomics and Occupational Safety will be bestowed in year 2000. This is given to the best of the three awardees during the last three years: 1998, 1999, and 2000. This award consists of a medal and US\$ 15,000.

An international review committee will select the winning contribution. The Prize as well as the Medal are then handed out by the International Ergonomics Association at The IEA/HFES 2000 Congress, which will be held in San Diego, California July 30 to August 4, 1999.

Persons wishing to be considered for the 1999 prize should submit an application to the IEA Awards Committee Chair: Prof. Martin Helander, School of Mechanical and Production Engineering, Nanyang Technological University, Singapore 639798.

If you have any questions please write an e-mail to: mahel@ntu.edu.sg.

A letter of application should be accompanied by 5 copies of the 30-page report. The deadline for submission is March 1, 2000. Applicants will be notified by May 1, 2000.

IEA 2000

The 14th IEA Congress, 30 July to 4 August 2000, will be held in San Diego, CA, USA in conjunction with the 44th Annual Meeting of the HFES. Note that the key dates have changed slightly and are now:

- 19 Nov 1999 Acceptances and registration materials mailed
- 28 Jan 2000 Camera-ready papers due
- 18 Feb 2000 Preliminary program published on the web site
- 28 Jul 2000 Early registration deadline
- 30 Jul 2000 Congress begins

Represented this time will be 37 IEA federated and affiliated societies representing more than 50 countries. In combination with the HFES, we anticipate that more than 2,500 people will attend, which will make IEA 2000/HFES 2000 the largest human factors/ergonomics professional meeting ever held anywhere in the world!

Each of the 21 HFES Technical Groups will hold a meeting on either Tuesday or Wednesday of the conference; international colleagues with similar interests are invited. Following most of these meetings, there will be a social hour with refreshments.

The Pan Pacific Council on Occupational Ergonomics (PPCOE)

Plan to bring your family and enjoy Disneyland, Sea World, Hollywood and the other California attractions. The Conference hotel, the Marriott, is on the beach. Mexico is just 30 minutes away. There will be an extensive technical visit program. The IEA 2000 web site is iea2000.hfes.org.

The HFES will help subsidise the travel expenses and registration fees for a limited number of qualified attendees from industrially developing countries. If you would like to apply for such assistance, please contact Lynn Strother.

The IEA Secretariat is headed by Lynn Strother, HFES, PO Box 1369, Santa Monica, CA 90406-1369, USA; fax: +1 310 394 2410; Email: Lynn_Strother@compuserve.com; Web: hfes.org

IEA JOURNAL OF ERGONOMICS RESEARCH

The IEA's electronic journal now has its first paper. David Meister examines "Ergonomics on the Brink of the 21st Century". Look at the IEA web pages to find this stimulating 21 page article. Please note that the editor has moved from Sweden to Singapore. His contact details are now:

Professor Martin Helander
School of Mechanical and Production Engineering
Nanyang Technological University
Singapore 639798
email: MAHel@ntu.edu.sg

The PPCOE was formed in February 1997 by a group of ergonomists in Asia keen to promote the research into and the application of ergonomics in occupational health in the Asia-Pacific region. Its formation followed a series of successful biennial conferences held in different parts of East Asia.

The formation of the PPCOE was recognition that a range of countries from the poorest to the richest in the world could learn from each other and could promote occupational ergonomics in a mutually positive way. As in other regions of the world there is a wide difference between different countries in the level of funding and support for occupational health generally and occupational ergonomics in particular. However, it has been demonstrated at PPCOE conferences that minimal funding is not a barrier to the effective application of ergonomics.

The PPCOE has links with the IEA Technical Group for Safety and Health through members in common, and the Japanese Society for Occupational Safety, Health and Ergonomics. The current Membership of the Council is as follows:

President

Masaharu Kumashiro
Professor, Department of Ergonomics
University of Occupational and Environmental Health
Kitakyushu, Japan

Secretary-General

Mao-Juin J Wang
Professor, Department of Industrial Engineering
National Tsing Hua University
Taiwan

Treasurer

Alan Chan
Department of Manufacturing Engineering and
Engineering Management
City University of Hong Kong

Asian Journal of Ergonomics Editor-in-Chief

Min K Chung
Professor, Department of Industrial Engineering
POSTECH, Pohang
Korea

Executive Members

Munehira Akita (Japan)
Kwan S Lee (Korea)
Nahm-Sik Lee (Korea)
Tianlin Li (PR China)
Barbara McPhee (Australia)
Nanthavanji Suebsak (Thailand)
Eric Min-yang Wang (Taiwan)
Fan dong Ye (PR China)
Zan Zhang (PR China)

THE PPCOE CONFERENCES

PPCOE conferences have been held biennially until this year. The first was held in Kitakyushu, Japan in 1990; then Wuhan, China in 1992; Seoul, Korea in 1994; Taipei, Taiwan in 1996; and again in Kitakyushu in 1998.

However, due to the work involved in running the conference and the fact that every few years it clashed with either the International Conference on Occupational Health or the International Ergonomics Association Conference both of which are held triennially, it was decided to run PPCOE triennially. Therefore the next Conference will be held in Beijing, China in 2001. It is proposed that the 2004 Conference will be in Australia.

Each of the previous conferences has attracted between 100 and 200 participants.

AIM AND OBJECTIVES OF THE PPCOE CONFERENCE

The primary aim of the conference is to promote research into and the application of ergonomics within an occupational health framework. As such it is the biggest of its kind in the world. Its principal focus is on issues that are important to the countries in the Pacific basin, both developing and developed and to encourage cross cultural links and networks amongst individuals and groups.

The objectives of the conference are to add to the knowledge of occupational ergonomics through:

1. encouraging the presentation of new work or the validation of previous work for local conditions
2. promoting adequate and appropriate (scientific) methods and standards of enquiry and presentation of findings

3. communicating information on Asian/regional issues
4. encouraging interest in the study and application of occupational ergonomics in the region
5. promoting communication and networking amongst participants
6. promoting active involvement of people from all countries in the region especially those who cannot regularly attend other international conferences or symposia due to financial restrictions
7. encouraging an appropriate link between the theory and practice i.e. possible application of theory proposed or background theory used for practice/application explained

Many cost savings are achieved through 'no-frills' conferences. For instance, for the last conference in Kitakyushu in Japan there was a low key opening ceremony with speakers from industry providing a snap shot of where ergonomics and technology are heading in Japan and a few words of welcome from the Chairman. On the first day there were plenary sessions and factory visits. Then four concurrent sessions were held over two days in teaching auditoria at the University of Occupational and Environmental Health. An army of staff and student volunteers helped with support services during the conference.

The organisers had paid a lot of attention to providing excellent social events with good food and lots of fortification. These gave participants a great opportunity to meet and definitely helped to break down barriers. A list of local restaurants and a map were provided to encourage groups to eat out on the evening when a more formal event was not organised.

THE ASIAN JOURNAL OF ERGONOMICS

As part of its activities the PPCOE has decided to produce a high quality journal to encourage and promote the theory and practice of occupational ergonomics in Asia. Professor Min Chung is Editor-in-Chief. The Editorial Board is comprised of different Members of the PPCOE who provide a link with their regional Ergonomics Societies and a local contact for the Journal.

Commercial Furniture Standards and Exhibition

The Journal is now actively seeking papers for its first volumes (there will be two a year). Potential contributors in Australia and New Zealand are asked to contact either Barbara McPhee at the address below or:

Dr. Min K. Chung
Editor-in Chief, Asian Journal of Ergonomics
Department of Industrial Engineering
San 31 Hyoja dong
Pohang, South Korea 790-784
Phone: +82-562-279-2192
Fax: +82-562-279-2870
mkc@postech.ac.kr

Barbara McPhee FESA, CPE
6 Aitchandar Road
Ryde NSW 2112 Australia
Tel: +61-(0)2-9808 2556
Fax: +61-(0)2-9809 4194
Email: bmcphoe@ozemail.com.au

November 1998

FIXED HEIGHT CHAIR STANDARD

The meeting in July of Standards Australia Committee CS/88, on which I represent the Ergonomics Society of Australia, demonstrated once again the conflict between desirable ergonomic factors and perceived commercial problems. This meeting was addressing a draft of the standard for fixed height chairs. An acceptable seat height range of 410 to 430 mm had been proposed on the basis of ergonomics and overseas standards. However, some manufacturing representatives on the committee stated that they could not sell such low chairs.

This argument has come up often before, in relation both to chairs and to desks. I believe that some people write specifications for fit-out based on design manuals which are out of date. John Weickhardt, once an active member of our Society and the former principle of Omni Furniture, used to wage a campaign on architects to get them to stop ordering desks 720 mm high. John produced data to show that 700 mm was an adequate height. Of course, if an office has desks or conference tables 720 mm or more high, then chair heights of 410 mm will seem too low. Footrests are unlikely to be available, so the consequence of higher seats will be excessive pressure under the thighs for many users.

The Committee reached a compromise on seat height by allowing a range from 410 to 450 mm, but adding a note that the height chosen for a particular application should take account of the height of any table to be used with the chair. If the chair was to stand alone, e.g. a visitor's chair, then 430 mm should be the maximum.

A similar debate ensued over seat depth. Manufacturers wanted the originally recommended range of 380 mm to 440 mm to be increased to a maximum of 480 mm, probably because of some of the lounge-type chairs to be found in some waiting rooms. Again a compromise was reached; the range was increased, but a note added to recommend a maximum of 440 mm.

The problems of representing ergonomic principles in this committee are probably not well understood. We can put forward all the relevant information and often succeed in getting the points accepted, but pressures from commerce can be very strong. A case in point was the vertical adjustability of the lumbar support point in

the adjustable height chair standard. The ergonomists argued that adjustability be compulsory. A special research project was carried out at Worksafe Australia by Nick Coleman and Glenna Ellitt which showed that users did like to have adjustability of this height. However, some importers of office chairs claimed that the European trend was to fix the backrest height. Again a compromise was adopted, allowing non-adjustable backrest heights for general purpose office chairs, and thus watering down the power of the standard. As discussed below, it turns out that backrest height adjustability is back in with leading chair makers.

On the fixed height chair standard again, another matter debated was the clear width between armrests. One manufacturer's representative had written to suggest that since there was no upper limit on the seat width, there should also be no upper limit on the width between the armrests. Of course, he was overlooking the fact that the user not only has to fit between the armrests but also has to be able to reach them with the forearms when sitting without having to lean to one side. While there should be an upper limit, it is difficult to work out what this should be. A value of 540 mm is being considered; please send any other ideas with justification to the writer. The final draft is now being considered by Committee members.

Committee CS/88 has also been considering a Standard on School and Educational Furniture and proposes to adopt the European Standard on functional dimensions for such furniture. Public comment has now closed on this proposal (only one month was allowed), but there will no doubt be much more debate before the European standard is adopted. Several members of CS/88 have pointed out that there is not the appropriate expertise among CS/88 members to make decisions on this issue; either a special committee or at least a sub-committee should be set up. ESA member Airdrie Long has a special interest in this area and has submitted substantial comment on the European standard. Hopefully a special committee will be set up on which Airdrie could represent the Society.

COMMERCIAL FURNITURE EXHIBITION, SYDNEY SEPTEMBER 1999

I was appointed to be one of the judges of a range of categories at this exhibition, again as a representative of the Ergonomics Society. Unfortunately, I was also required to present a seminar during the judging period so my participation was limited. In any event the judging was rather hurried and I don't believe that much notice should be taken of the decisions for the purpose of choosing particular products. So, instead of listing recipients of the awards, I give below a few of my impressions of the exhibition.

Backrest height adjustment is back, even for executive chairs. The ease with which this height adjustment can be done makes one wonder what all the fuss was about. The trend is to avoid the need for a control; the backrest can be simply gripped and raised from its low point to the desired height where it is held by a ratchet mechanism. The award winning chair incorporated such a system and also included an adjustment of seat depth independent of the backrest angle. This is done by allowing fore and aft adjustment of the seat pan. This is a real advance in ergonomics.

It is interesting that some design features are adopted almost simultaneously by many manufacturers. One is the "sharknose" edging on desks. A nicely rounded desk edge ("bullnose") is very desirable but not commonly available. The sharknose has reasonable rounding on the top edge, but is also cut away on the bottom edge to make the working surface appear thinner. It is more for appearance than ergonomics. Another design which is common among several manufacturers is the star-shaped cluster of workstations which are supposed to be for call centres, i.e. where the task is primarily dealing with phone inquiries. These clusters are elegant, but again are more for appearance than for ergonomics. They don't allow any flexibility for positioning of the monitor to avoid reflected glare.

A heartening feature of the exhibition was the generally high quality of the products and of the stands. Manufacturers come and go rapidly in this industry, but those with good design and good quality prevail.

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Performance Measurement in Operational and Complex Simulation Environments

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ABSTRACT

Recent times have seen increasing importance placed on the human factors engineering (HFE) evaluation of new military systems. HF specialists generally agree that these systems should be tested and evaluated in their intended operational settings with the measure of greatest interest being complex, meaningful task performance. However, HF practitioners have encountered considerable difficulties controlling and collecting data in operational environments. It was anticipated that complex full-mission simulation would offer a solution to these problems with control being exerted through appropriate scenario generation and simulator architectures allowing hundreds of environmental, system or task performance variables to be electronically logged. Unfortunately, the (gigabytes of) data logged in simulation studies has proven to be too low-level to be useful in evaluating task performance. A software tool implemented in PROLOG has demonstrated the viability of automatically recoding low-level data into an empirical record of meaningful task performance. This tool has been used extensively in applied work for a specific system. A generic tool of this nature would be a benefit for human factors analysts using man-in-the-loop architectures to design, test and evaluate new systems.

TEST AND EVALUATION IN THE OPERATIONAL ENVIRONMENT

All equipment designed and developed for military aircraft undergoes a testing and evaluation process in order to determine its effectiveness before final procurement. Recent times have seen increasing importance placed on the human factors engineering (HFE) evaluation of equipment during the design, test and evaluation process. Systems which meet all 'equipment' specifications (e.g., processing speed, memory requirements, signal detection rates etc.) will not be procured if human performance is degraded due to poor HFE design (Booher, 1988).

Testing new systems creates a methodological dilemma for human factors practitioners. On one hand, the classic laboratory-based experimental testing paradigm allows hypotheses about causal relationships between independent and dependent variable(s) to be tested, and accepted or rejected with an associated level of probability (of being correct). The down side of this approach is that while hypothesized relationships between (some) system variables and (some) human performance measures can be tested, all other variables are usually rigorously controlled in order to reduce variability and increase the likelihood of a statistically significant result. Inevitably these studies are of limited value because:

- a. the performance measures may not meaningful (i.e., does a statistically significant 50 msec improvement in reaction time to a threat justify fitting a new radar warning receiver to a fleet of aircraft at \$150,000 per unit?), and
- b. the results are not necessarily predictive of performance in operational circumstances because the evaluation process does not include the rich interactions, interdependencies and contextual influences found in the real world.

Human factors specialists working with new systems agree that these systems should be tested and evaluated in their intended operational settings with the measure of greatest interest being 'complex, meaningful task performance' (Hennessy, 1990, pp. 441). However, while the real world is authentic, it is not easily controlled or measured. The real world violates the assumptions of the classic experimental paradigm with the result that practitioners must examine observational data for correlational rather than causal relationships. While this is not a problem per se (for most), the inability to exert experimental control in the operational environment means that performance data often exhibits high levels of variability making statistical analysis and interpretation difficult. The inability to manipulate independent variables in the real world often means that new systems are not tested and evaluated under a full range of operational scenarios — simply because some scenarios did not occur during the period of the test and evaluation process.

The problem of collecting observational data in the real world is also significant, particularly in the military aviation environment. Ideally, the observational data record should preserve a record of the operator's task performance and any environmental or system events which effect that performance. Any data collection apparatus proposed for use in a military aircraft is itself subjected to an exhaustive design, test and approval process. The apparatus cannot jeopardize the safe operation of the aircraft, must be g-tolerant, crashworthy, not emit any electromagnetic interference and is also subject to weight, space and volume limitations. Often the time required to design and test data collection apparatus exceeds the time frame allowed for the test and evaluation of the new system.

SUBJECTIVE MEASURES

The difficulties associated with control and measurement in the real world has led to the extensive use of subjective measures for evaluating new systems. Indeed, some subjective rating scales such as the Cooper Harper (for rating aircraft handling qualities; Cooper and Harper, 1969) and the Modified Cooper-Harper (Wierwille and Casali, 1983) have been developed and used over a number of years. The subjective approach allows users or an observing subject matter expert (SME) to evaluate (rate) complex task performance in the operational environment. Data can be provided quickly in environments where it is extremely difficult to fit data collection apparatus because of the reasons outlined above. The major disadvantages of the of the subjective approach are that: (a) there is no formal record of the observed data, (b) there can be some uncertainty as to exactly what performance is being measured, and (c) there is no formal record (or often awareness) of the system or environmental events that influenced task performance. It is also very difficult to assess the reliability of subjective rating data gathered under these circumstances. Reliability scores are based on correlations of successive sets of performance scores from different judges rating the same behaviour (Cronbach, 1970). While different SMEs can be used to rate task performance in different missions, it is extremely difficult to get all of them to rate the same

behaviour in an operational setting (i.e., have a number of SMEs aboard an operational aircraft) in order to evaluate reliability.

During the 1980s advances in video technology alleviated some of the problems associated with collecting data in operational environments. The miniaturization of video cameras and the development of compact multiplexors, video recorders and time code generators made it easier to fit data collection apparatus to aircraft. It became possible to gather permanent time-coded observational records of operator task performance in operational environments and integrate information from different crew members and/or different sources (e.g., direct recording of displays to capture system or environmental events). The existence of a permanent data record allowed subjective methodology to be improved because a number of subject matter experts can view the data record and rate task performance. Ratings from a number of expert judges can then be assessed for reliability, a much more satisfactory situation than when one is relying on ratings from the user, or one subject matter expert.

OBJECTIVE MEASURES

The existence of a permanent video data record also led to the development of methods to objectively measure and analyze task performance. Empirically validated task analysis (EVTA: Shaffer, 1989; Shaffer, Hendy and White, 1988) generates an empirical time-stamped record of task performance from a detailed 'video analysis' of the operator's observable activities and communications. Observational data which has been 'coded' or transformed into an empirical record can then be examined using traditional (correlational) statistical methods (King, Kieboom and Manton, 1993) or sequence dependent analytic methods which have been collectively described as 'exploratory sequential data analyses' (EDSA: see Fisher and Sanderson, 1993; Sanderson, 1991; Sanderson and Fisher, 1994). Information regarding task performance may emerge directly from the empirical data record, or by contrasting data collected under different conditions.

The development of objective analysis methods was seen as a significant step forward by human factors

practitioners, but the EVTA methodology has one major disadvantage — video analysis is extremely labour and time intensive. The ratio of analysis time to observational session time (AT:ST ratio) has been quoted as varying between 10:1 and 100:1 (or greater). In our experience, where one is not only coding task behaviour, but trying to extract system or environmental information from the video record the ratio is closer to the higher end of the scale — that is, 100 hours spent encoding data for every 1 hour of video. Efforts to reduce the AT:ST ratio have seen the development of interactive software packages such as MacShapa (Sanderson, James and Siedler, 1989; Sanderson, Watanabe and James, 1991) and CABER (Patrick and McKenna, 1986) which help build, manage and analyze the task performance data base. However, the improvement in the AT:ST ratio has been incremental rather than exponential and the time required to code 'sufficient' data for meaningful analysis will still often exceed the time frame allowed for the test and evaluation of the new system.

COMPLEX SIMULATION

In the late 1980s and early 1990s complex simulation was seen as the panacea for all the HF practitioners' design, test and evaluation problems. Advances in processing power, graphics systems, software and database design (see Baskett and Hennessy, 1993; Ferguson, 1990; Strachan, 1995) meant that aircraft and the operational environment could be realistically represented in hi-fidelity 'full-mission' simulators. The advantages of the simulation environment over the real world for testing new systems were immediately apparent: (a) while the testing environment is operational, control could be exerted through appropriate scenario generation, and (b) all the problems associated with trying to fit data collection apparatus to real aircraft would be overcome — indeed, simulator architectures would make it possible to electronically log hundreds of environmental, system or task performance variables at sampling rates up to 60 Hz, producing gigabytes of observational data per hour.

The inherent promise of simulation saw the U.S. Army Crew Station Research and Development Branch at the

NASA-Ames Research Center design and build a hi-fidelity helicopter simulator with full-mission capability (the Crew Station Research and Development Facility: Voorhees, Bucher, Gossett and Haworth, 1989; Henderson, 1989) specifically to support HF practitioners involved in the design, test and evaluation of new systems. The Air Operations Division of the Aeronautical and Maritime Research Laboratory (AMRL) has built a hi-fidelity full-mission simulator (fixed and rotary wing) for the same purpose (Feik and Mason, 1993a; Feik and Mason, 1993b).

However, while the simulation environment offered more control than the real world, and did alleviate the problems associated with fitting data collection apparatus to operational aircraft, the type of observational data that could be captured via electronic logging proved to be too 'low-level' (at the level of a button press or switch closure) to be useful in evaluating meaningful task performance. For example, the status of any of the keys around a Multi-Function Display (MFD) in the cockpit can be logged and whether the key was pressed or not pressed determined — but the keypress itself can fulfill different functions depending on what was actually displayed on the MFD at the time of the press. Thus the knowledge of the keypress is only meaningful in the context of another piece of information i.e., what was displayed on the MFD at the time. As Hennessy (1990) pointed out after preliminary studies in the Crew Station Research and Development Facility 'a large amount of low-level data from numerous sources is difficult to analyze and interpret if.....there is no pre-established structure for aggregating the data to yield some higher level meaning' (pp 445).

Given the problems associated with electronically logged data, subjective measures are still used extensively today in order to evaluate complex task performance in the simulation environment. Subjective measures continue to be refined — Hennessy (1990), for example, has proposed a more empirical subjective methodology based on the construction and subjective weighting of a task performance hierarchy (using policy capture techniques: Hoffman, 1960) in order to produce a single aggregated figure of merit reflecting overall task performance. The problems associated with low-level data have also

resulted in video recording still being used to obtain a meaningful time-coded observational data record. Any detailed or objective analysis of task performance still involves video analysis, with its attendant shortcomings.

THE FUTURE

Clearly, the next logical step in the development of test and evaluation tools in the simulation environment is the further development of tools to assist in the objective measurement of meaningful task performance. While statistical methods to deal with observational data exist, real problems exist with the time it takes to transform observational data into an empirical record using current methods (i.e., coding observational data via video analysis). At this time it seems that the greatest gain to be made in the objective measurement of meaningful task performance will be through the automation of this coding process. It is our belief that this gain will be made through the development of a software tool which will take this low-level data and automatically recode it into an empirical record of meaningful task performance.

The viability of the automated recoding of electronically logged low-level data has already been demonstrated (King and Goss, 1995). This method involved electronically logging time-coded low-level information directly from the 1553 databus in a Sikorsky S-70B-2 helicopter during operational test and evaluation of systems in the aircraft. A rule based program was implemented in PROLOG to parse these data and produce a time-coded record of meaningful task performance. Observational data were also gathered and encoded using the 'traditional' EVTA technique during this test and evaluation program. While it took two experienced analysts some three months of full-time work to analyze and code 13 critical mission segments (a total of 78 mins of video record) for each of the three crew members in the aircraft, an equivalent coding was obtained in two minutes using the automatic process and a low-end PC. It did take a number of weeks to write and debug the rule set, but this was a one-off cost that still took less time than the manual video analysis and encoding of the data described above.

The software tool described which was developed for a specific system, has been used extensively in applied work for that system, and can be regarded as a proven concept demonstrator. The concept of recoding electronically logged low-level data into an empirical record of meaningful task performance is extendible to other man-in-the-loop systems where computer architectures allow this type of data to be electronically logged. A generic software tool able to recode data of this nature would be a benefit for human factors practitioners using such systems to design, test and evaluate new equipment.

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2000

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April 4-6. Ergonomics Society Annual Conference, grantham. Email ergsoc@ergonomics.org.uk.

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Oct 9 - 11, ESA 2000 Conference, Adelaide

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Contributions to Ergonomics Australia are always welcomed and encouraged.

The activities, achievements, experiences, views and opinions of Members are always of interest.

These can take the form of letters, notices, notes, commentaries and articles.

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