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ESA Mission Statement
Promoting systems, spaces and designs for People
The science, philosophy and art of ... ergonomics practice? The IEA definition of ergonomics and its major departments has been released for publication by member societies and appears in this edition of Ergonomics Australia. While it does give members a unified message it is likely to generate continuing discussion — in particular about the defined categories — as was demonstrated at a recent ESA Conference 2001 committee meeting during discussion of the topic areas for conference paper grouping.

It would seem that in some quarters the practice of ergonomics has been evolving in isolation from its theoretical background. This is not an unusual situation in many occupations but it does inhibit the cohesion necessary for professional development and recognition. While attention is paid to the science and philosophy of ergonomics by academics, its practitioners often fail to appreciate the art of ergonomics as expressed or mangled by the use of language. This may, in part, be the result of decades of denigration of formal English grammar in favour of encouraging uninhibited creative expression ... often resulting in sending anything but the intended message to the recipient/s — to the surprise and puzzlement of the sender. As the word ergonomics becomes part of the popular lexicon, product sales promoters and a bewildered and uninformed public increasingly abuse it — along with practitioners who should know better. Ergonomics is a branch of ecology that addresses human factors resulting from the interactions between humans and their environment (coming from the Greek ergon = work + nomos = law). Ergonomics relates to the interaction of the animate and inanimate whole — not the individual parts. While the Oxford Dictionary allows ergonomic as an adjective if used correctly, Webster's Medical Dictionary does not. There happen to be good, bad and indifferent designs for tools and equipment. An item or product may offer ergonomic advantages by virtue of its design; it may offer a good ergonomic solution for a particular situation ... but a product, such as a chair, remains just that: an inanimate product. This particular form of concept abuse is now becoming a feature of workers' compensation litigation and unlettered professionals and marketeers merely muddy the waters. Perhaps ergonomics is at heart the quintessence of virtual reality rather than an object of the tangible world?

Academics and practitioners must facilitate a common meeting space as neither group nor the profession thrives if they remain in isolation. That is why Conference 2001, Better Integration: bringing research and practice together is such an important item in the Australian Ergonomics Calendar and is a significant means of promoting ergonomics in its widest application. The profile of our membership appears to be increasing in numbers of small business enterprises rather than in corporate and government employment although there is still a strong representation from those fields. The time when paid conference leave was an expected part of a professional package is almost a thing of the past. Each person must now justify participative value for a corporate or personal expenditure priority.

Conference fees represent perhaps the smallest aspect of conference participation in comparison with travel and accommodation and lost earnings during the time away from work. This places greater emphasis on quality outcomes. It is critical that the membership actively generates valuable presentations, promotes attendance and seeks sponsorship to underpin the conference agenda. What are you planning to contribute?

Shann Gibbs PhD
Editor
Letters

The Editor

The Journal of the Ergonomics Society of Australia, in the December edition of the journal there was an insert advertised “which was a mechanic’s back and neck saver” manufactured by Flexliner who promote themselves as “leaders in seating”. Presumably this came with the implicit if not explicit endorsement of the Ergonomics Society. Otherwise we would be seeing ads for free trips to Bali provided one purchases a building site on the Gold Coast in the next edition of the journal.

One of the photographs provided — illustrating the virtues of this device — should in fact be used in an example of what not to do. Without going into an exhaustive analysis, the photograph provided of their “mechanic” in a semi upright position demonstrates that there is significant static load on the shoulder girdle, thoracic spine, cervical spine and, probably, unnecessary load on the deltoid musculature. Now, while the idea of having an adjustable back rest for mechanics is good, the advertised position is contraindicated. Simply put, the chair does not function as a neck rest in the 70 degree position. In fact, there is a very good argument for kneeling when doing the sort of work illustrated in the brochure.

If the society is going to include advertising (which is by no means an unreasonable proposition) then there ought to be an extremely thorough review of any such advertising. I can see it now: Flexliner as advertised in the Ergonomics Journal of Australia!

Yours sincerely,
Dr. Ian R. Coyle

[Editor’s response: Thank you very much for taking the trouble to write — it is exactly what should happen with a professional journal! Advertisements are sought and negotiated by the secretariat and either forwarded directly to the publisher for inclusion in each edition or inserted at the printing / mailing house stage. There is a caveat printed in each issue:

“The appearance of an advertisement in the Journal does not imply endorsement by the Society of the product and or service advertised. The Society takes no responsibility for products or services advertised therein.”]

Your argument is valid but there are difficulties (time & volunteers) for a formal advertising review process. The best monitor is constant vigilance on the part of members to react to poor or incorrect advertising — exactly as you have done. Hopefully you will have started a valuable trend in this journal’s correspondence column. Even more importantly: have you conveyed your concerns directly to the advertiser? Both approaches are important.

Shann

It might be of interest to "real" ergonomists (hopefully most readers of EA) to know what is occurring in their name ... the following message was posted earlier today on the UK ergonomics list-server:

"Hello Friends,

Tomorrow, I will visit an electrical fabric [presumably he/she means factory - MH] and I must find ergonomic problems in the factory! What should I do? Are there any steps during searching the problems? Please advise me!"

It makes one shudder in disbelief! We can only hope that was a joke. Imagine contacting the medical community and saying: "Friends, tomorrow I must perform surgery. What should I do? Are there any steps I should take during the operation? Please advise me!"... or ..... "Dear aero engineering friends, I plan to build a plane. Are there any steps I should take? Anything to be careful about?" ... or ..... "Dear civil engineering friends ....." .... or .... "Dear psychologists, ....." ..... and so on and so on .......

Yours despairingly,
Max Hely
Ed: The following letters have been forwarded by DC Caple from his time as President and will be of interest to members regarding developing relations with Asian colleagues.

To: A/Prof Lim Kee Yong
From: David C Caple  22/8/00

I am the current President of the ESA (Ergonomics Society of Australia). Whilst in San Diego recently at the IEA 2000, I met Halimalitun, the SEAGS representative. She impressed me as a very capable delegate and encouraged greater co-operation between our Societies. I welcome this initiative.

The ESA has initiated two projects relating to the IEA’s project co-ordinated by Pat Scott (South Africa) under their IDC (Industry Developing Countries) project. Our first initiative is to draw together a database of ergonomics books and resources, mainly from retiring ergonomists, and donate them to IDC Universities. We already have such a database underway and seek your assistance in contacts with appropriate Universities / Colleges in our Asian region.

The second initiative relates to offering seminars / short courses in ergonomics by Certified Ergonomists from Australia. As many travel widely we propose they extend their Asian trips by extra days and offer their expertise in this way. We may seek IEA funding for local expenses. These could be quite targeted eg ergonomics in Call Centres; MSD in textile or agriculture; machine safety; etc.

Would there be relevant Universities / Colleges / Govt Agencies / Unions, we should initiate contact to seek the feasibility of this project?

To: David C Caple
From: A/Prof Lim Kee Yong  29/9/00

… Thanks for your generous offer to help raise awareness and knowledge of our discipline in the ASEAN region. My colleagues would be most grateful if indeed such a program becomes reality. I have in mind mainly Indonesia since they have suffered most from the economic downturn and recent political turmoil. Other countries in the region would also benefit from your proposed program but the need is less I guess than Indonesia, where much cottage industry and manual labour in poor working conditions persist. I would therefore like to recommend to you that Indonesia should be given TOP priority in your program of book donation and roving seminars.

There are two key people there that you might like to contact, namely:

Prof Manuaba in Bali
(adman@denpasar.wasantara.net.id) and
Dr. Sutalaksana from Bandung (aurik@ti.itb.ac.id).

I am sure they will be over the moon to hear of your program.

To: David C Caple
From: Prof Adnyana Manuaba  2/10/00

Thank you for your plan to help ergonomists from South East Asia in general, especially from Bali, Indonesia. Indeed we are very anxious to have cooperative joint work and help to enhance our contribution for Science and the people. But to be honest we are within limited resources especially funds, particularly due to our economic unended crisis. Actually we have a very close link with ergonomist from Australia since several years ago, Prof Bullock, and others … the old ergonomists from Australia. I myself, as the first President and Founder of SEAES, have had the opportunity to visit them and attend ergonomics conferences carried out by your society, especially when Australia and New Zealand had only one association. …In any occasion I always recalled about the need to have a close link between Australia and Indonesia, particularly Bali, as we do have similar problems in ergonomics like mine, agriculture and the last one, tourism/ hospitality industries in Bali. Of course in this aspect we could do a lot together. The plan to donate some ergonomics books to us is very highly welcome and needed as we are so isolated with the latest development on ergonomics. We do have a postgraduate program on Ergonomics in Bali (the only
one in Indonesia) and we have students from various disciplines. They need new references of course, and your help will be highly appreciated.

I would be very happy if during your term we could do something together and Bali has a very attractive image for everybody to visit … why not for ergonomists coming from Australia as a tourist as well as an ergonomist to exchange views and experiences with us? Perhaps do some lectures to widen our students’ horizon. And joint research projects on ergonomics in service industry will be challenging too. It would be good if we could do that as early as possible as globalisation could not wait for those who don’t use the open opportunity.

To: David C Caple  
From: Prof Adnyana Manuaba  7/12/00

Next July 11-12, 2001, we shall organize National Seminar on Ergonomics and Sport/Exercise Physiology, in Denpasar, we shall be delighted if some colleagues from Australia could participate. As I told you … if some colleagues by chance pass Bali on their way to other places, may be they could drop in/ transit in Bali to participate. By doing so there will be not so many or special cost … Or if the Australian Ergonomics Society would like to sponsor somebody to be key-note speaker that will be fine and highly appreciated. I am looking forward for promising answer.

The first edition of EA for the new millennium. Thank you to Shann for steering Ergonomics Australia through the last 12 months on behalf of the Board. You can imagine the amount of work that goes on behind the scenes putting an edition together, organising articles and chasing contributors!

Since the last edition there hasn’t been a meeting of the Board, so there is little to report in that area. We will be meeting by teleconference in the second half of February so I look forward to reporting back to you next time (please ensure you are aware of who your Branch elected Board member is). The national executive meets every month here in Brisbane to assist with keeping relevant issues on the move. You will notice as you leaf through these pages a word from CHISIG and the definition of ergonomics compiled by the International Ergonomics Association.

Despite the silly season I am aware that Branch activities have not necessarily been put on hold. The NSW Branch is busy working on the 2001 conference. The Queensland Branch of the ESA is bringing together the Australian Council of Unions and the Queensland Division of Workplace Health and Safety (with support from the Safety Institute of Australia and St John’s Cathedral) to acknowledge the International Day of Mourning for those who have been killed at work (planned for the end of April).

In addition Christine Stone (and family) have moved the Society’s office into slightly larger premises. We reside in the same building, but in a space where our national office can begin to reflect some of the ergonomics principles we hold dear (and should be exhibiting to any member of the public and member of the Society that visits). The new office meets our current needs suitably and will serve us well into the future. So, stuff is happening.

Jim Carmichael  
President
ANNOUNCEMENT

The 2001 Liberty Mutual Prize of the International Ergonomics Association

Through this prestigious award, the IEA 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.

The award recipient will receive a prize of $5,000. In addition, the award recipient will be automatically competing for the 2003 Liberty Mutual Medal. The Medal, carrying an additional stipend of $15,000, will be awarded during the IEA Triennial Congress (Seoul, Korea) to the best of the 2001, 2002 and 2003 Prizewinners.

Applicants need not belong to the IEA or any of its constituent groups. Relevant disciplines include; ergonomics, epidemiology, biomechanics, cognitive and behavioural psychology, design, physiology, medical sciences, economics, engineering, etc.

Submission Requirements

To be considered for the Liberty Mutual Prize, the applicant must submit a letter of application and a research paper in the domain of accident prevention, injury reduction and/or early return to work, including rehabilitation. The paper must:

• be an original paper describing laboratory, field, or intervention research
• contain non-proprietary data
• be unpublished at the time of submission (but may have been submitted for publication)
• be thirty pages or fewer, single-spaced using point size 12 with 1 inch margins

The paper should address the following topics:

• contributions of the research to theory, i.e., how the work had advanced the understanding of the causes of accidents and/or ability to mitigate occupational injuries or disability
• aims of research
• originality and creativity
• study methodology
• implications for risk reduction

The cover letter should highlight:

• main innovative aspects of the study (eg, approach, methodology, analysis, etc.)
• anticipated contribution to occupational safety

An international review committee established by the IEA will select the winning contribution.

The authors of the winning paper are expected to submit the paper to Ergonomics for publication. The authors may make a case to have the paper submitted to an alternative journal for publication.

Persons wishing to be considered for the 2001 prize should submit an application, including separate cover letter and paper, both in electronic format, to the IEA Awards Committee Chair:

Y. Ian Noy, PhD, PEng, CPE
IEA Awards Chair
c/o Transport Canada
330 Sparks Street, Tower "C"
Ottawa, Ontario
Canada, K1A 0N5
Tel: +1 (613) 998-2268
Fax: +1 (613) 998-4831
E-mail: NOYI@tc.gc.ca

The deadline for 2001 applications is March 15, 2001. Applicants will be notified by mid-June. Announcement of the award winner will be made public in July 2001.

If you require additional information, please do not hesitate to contact the IEA Awards Committee Chair at the above-noted address.

Frequently Asked Questions

Q1. What is the purpose of the prize?

The purpose of the prize is to recognize individuals whose efforts have contributed the reduction or mitigation of work-related injuries. In particular, the prize is awarded to recognize original research leading to a better understanding of avoiding or mitigating.
occupational accidents or injuries, or to rehabilitation and return to work of an injured workers.

The main criteria, therefore, include significant advancement of theory and understanding, innovation and development of new directions or approaches.

Q2. Does the IEA endorse Liberty Mutual policy directions?

The establishment of the prize should not be construed as endorsement of Liberty Mutual. However, it is recognized that Liberty Mutual sponsors a variety of activities aimed at improving worker health and safety. The IEA shares the belief that the prize will stimulate efforts to combat the unacceptably high incidence of work-related injuries and raise awareness within the industrial, governmental and academic communities of the pervasive nature of the problem and its associated high social and economic consequences.

Q3. Is this prize limited to ergonomics?

No. Significant contributions can come from a variety of disciplines such as ergonomics, epidemiology, biomechanics, design, cognitive and behavioral psychology, physiology and anatomy, economics, etc.

Q4. Why is Liberty Mutual doing this through the International Ergonomics Association?

The IEA is a federation of ergonomics and human factors societies throughout the world. As such, it fosters an extensive network of experts in work sciences and related disciplines. This network will ensure that the selection of the winners reflects the best judgment of the international scientific community. Furthermore, the implementation procedures established by the IEA ensure that decisions are impartial.

Q5. Who will select the winners?

A committee of three world-renown experts (currently Prof. M.M. Ayoub, USA, Dr. K. Kogi, Japan, and Prof. N. Corlett, UK) will oversee the selection process. External reviewers may be enlisted, as required.

Q6. What does the prize comprise?

The annual Liberty Mutual Prize consists of a financial award of US$ 5,000. Every three years, the best of the three most-recent winners will receive the Liberty Mutual Prize Medal, which consists of a further award of US$15,000.

Q7. When will the awards be made?

The annual prize will be awarded during an IEA-sponsored conference or a conference in the country of the recipient. The triennial medal will be given during the IEA Congress.

Q8. Where will the prize be awarded?

For 2001, the award will be presented at a conference to be agreed to by the award recipient and the chair of the IEA Awards Committee.

Q9. Who will pay for the travel expenses?

The award recipient must pay for his/her travel to attend the awards ceremony.

Q10. Who is eligible to apply?

Applicants need not belong to the IEA or any of its constituent groups. Relevant disciplines include; ergonomics, epidemiology, biomechanics, cognitive and behavioural psychology, design, physiology, medical sciences, economics, engineering, etc.

The prize will be awarded to individuals, not organizations. If the winning submission names more than one individual, the named individuals shall share the award.

Q11. What is the difference between the Prize and the Medal?

The prize is awarded each year and has a monetary value of US$5,000. The medal is awarded during the IEA Triennial Congress to the best of three most-recent prize winners and carries an additional stipend of US$15,000.
Jim Carmichael advises: Margaret Bullock, one of the Society’s IEA delegates informed the ESA in January of the recently confirmed definitions of ergonomics that were agreed to at the IEA Council meeting last July. All federated Societies of the IEA were consulted during the developmental process of these definitions. Ergonomics and the domains of specialization of the discipline are defined. In the past, I have heard commented more than once that ergonomists suffer professionally due to the fact that there is no one agreed definition of ergonomics. Now there is an internationally accepted definition developed by the international professional community and we should take advantage. The Board will be discussing these new definitions at its next meeting, in February.

APPROVED IEA DEFINITIONS:
THE DISCIPLINE OF ERGONOMICS

Definition
Ergonomics (or human factors) is the scientific discipline concerned with the understanding of the interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well being and overall system performance.

Domains of Specialization
Derived from the Greek ergon (work) and nomos (laws) to denote the science of work, ergonomics is a systems-oriented discipline, which now applies to all aspects of human activity. Practicing ergonomists must have a broad understanding of the full scope of the discipline, taking into account the physical, cognitive, social, organizational, environmental and other relevant factors. Ergonomists often work in particular economic sectors or application domains. These application domains are not mutually exclusive and they evolve constantly. New ones are created; old ones take on new perspectives. Within the discipline, domains of specialization represent deeper competencies in specific human attributes or characteristics of human interaction:

Physical Ergonomics
Physical ergonomics is concerned with human anatomical, anthropometric, physiological and biomechanical characteristics as they relate to physical activity. The relevant topics include working postures, materials handling, repetitive movements, work-related musculoskeletal disorders, workplace layout, safety and health.

Cognitive Ergonomics
Cognitive ergonomics is concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system. The relevant topics include mental workload, decision-making, skilled performance, human-computer interaction, human reliability, work stress and training as these may relate to human-system design.

Organizational Ergonomics
Organizational ergonomics is concerned with the optimization of sociotechnical systems, including their organizational structures, policies, and processes. The relevant topics include communication, crew resource management, work design, design of working times, teamwork, participatory design, community ergonomics, cooperative work, new work paradigms, organizational culture, virtual organizations, telework, and quality management.

NOMINATION(S) FOR THE IEA FELLOW AWARD

[National IEA Delegates have been invited to forward a response to the following]

I am inviting your society’s nomination(s) for the IEA Fellow Award for 2001. A description of the award is found below. There is no limit to the number awards to be granted - it is based entirely on individual merit – but there is a desire to keep the number low in order to maintain its special status. Please send me your nominations no later than March 31, 2001.

Ian Noy, Chair
Awards Committee
IEA Fellowship is to recognize extraordinary or sustained, superior accomplishments of an individual. To be considered for a fellowship two eligibility criteria must be satisfied. In addition, the candidate's distinction as an ergonomics professional must be demonstrated.

2.9.1. Eligibility Criteria

There are two eligibility criteria: International Service and Membership in Society.

1. International Service

This includes such activities as service to IEA, an extensive publication record in international journals, international consulting, service to the United Nations, and similar.

2. Membership in Society

The candidate must have been a Full Member in good standing of a Federated or Affiliated Ergonomics Society for at least the preceding 5 years. Student membership and Associated Membership do not confer eligibility.

2.9.2. Distinction Criteria

The candidate should have made outstanding contributions to ergonomics/human factors. There are many ways in which this can be demonstrated:

- the candidate could have had the primary responsibility for the technical direction;
- supervision or management of a significant effort during a sustained period of time;
- the Candidate could be a well renowned researcher, designer or consultant of great distinction; and
- Clear evidence of distinction should be supported by detailed descriptions and attachments to the nomination form that is submitted by the person nominating the candidate.

For example:

- for a researcher, the most significant publications authored or co-authored by the candidate should be attached to the application;
- for a consultant, the most important consulting contracts should be outlined, together with the outcome of the contracts; and

Any other information to support or attest to the achievements of the candidate should be furnished to the IEA Awards Committee, in order to support their deliberation of the candidates merits.

2.9.3. Submission

The application should be submitted to the Chair of the Awards Committee no later than March 31, 2001.

2.9.4. Fellows Election Committee

The Fellows Election Committee consists of a minimum of five members, all fellows of IEA. One of the members is Chair of the Committee.

2.9.5. Elections

The nominee's candidacy must be approved by two-thirds vote of the members of the Fellows Selections Committee. Those candidates so approved must be elected by a majority of the IEA Executive Committee.

2.9.6. Renomination

An individual may be nominated for Fellow several times.
NEW MEMBERS ADMITTED RECENTLY

NSW
Mr Peter Cooper
Konstrukt Design
National Innovation Centre
Australian Technology Park
EVELEIGH NSW 1430
Member
Ms Karen Davies
7 Nurragi Close
AVOCA BEACH NSW 2251
Upgrade to Member

VIC
Mr Graham Burchell
8 Carinya Road
VERMONT VIC 3153
Affiliate
Ms Browyn Farquhar
13 Glendearg Ave
MALVERN VIC 3144
Member
Christine Jones
24 Mallison Crt
AIRPORT WEST VIC 3042
Affiliate

SA
Ms Gilian Evans
23 Columbia Crescent
MODBURY NORTH SA 5092
Affiliate

Please correct previous entry for:
Mr Stan Livissianos
29 Fife Street
Vale Park Adelaide SA 5081

QLD
Ms Elizabeth Kenny
29 Manitilla Street
CAMP HILL QLD 4152
Member

ACT
Ms Joanne Denham
PO Box 1880
CANBERRA ACT 2601
Member
Ms Manuela Kalz
PO Box 495
CURTIN ACT 2605
Member

TAS
Ms Elizabeth Freeman
6 Brushey Creek Road
LENAH VALLEY TAS 7008
Member
Ms Marjorie Sheedy
44 Tilbani Street
HOWRAH TAS 7018
Affiliate
Mr Andrew Coleman
PO Box 965
HOBART TAS 7000
Member

WA
Ms Nicole McLeod
12 Dover Street
WEMBLY DOWNS WA 6019
Member
The Conference for CHISIG (Human-Computer Interaction Special Interest Group) was held during a glorious Sydney summer week (4-8th December 2000) at the University of Technology. There were more than 200 participants with 30% from overseas.

The first two days were dedicated to tutorials, workshops and a doctoral consortium. The tutorials were detailed sessions for furthering skills in particular areas. The workshops were mini conferences on a very specific area so those with a common interest could discuss the area with other interested people. All the participants had to present a position paper. The doctoral consortium was for PhD students to discuss their research with other students and some mentors.

I attended “The Use of Colour in Interface Design” tutorial. Now, I understand better the reason for lack of consistency of colour between screen, printer and scanners – they use slightly different colour spaces. One way to overcome this is to transform each device’s colour profile into a standard colour space. Did you know that not all colours can be displayed on a screen? To describe colour you need to define its hue, saturation and brightness. Some hints provided for designing pleasing interfaces:

• use only one or two key hues;
• vary brightness and saturation to add interest;
• use contrast to reflect importance making colour a secondary cue;
• empty space is not wasted space; and
• do not use saturated complementary colours together — using de-saturated complementary colours is often pleasing.

The last three days provided the conference proper with lots of papers and 4 keynote speakers. A few lines on several of the papers follow.

Wikberg described a mobile phone to allow diabetics to better monitor their blood sugars — the user trials found that diabetes was, thereby, better managed from both the patient’s and doctor’s point of view. The system had 4 iterations with user trialing occurring after the 2nd and 4th iterations. This seemed to be a successful application of a mobile service. He followed this paper with an amusing paper on developing a mobile phone with only one button— it is possible but a bit contrived!

Penny Sanderson gave an interesting insight into how electricity deregulation has significantly increased the complexity of the tasks of a Snowy Mountains Scheme control room operator. The current demands for electricity change much more quickly than in the old market — with final notification of requirements being sent 30 minutes before expected delivery.

In ‘Biasing Web Site user Evaluations: A Study’ a student project was presented and demonstrated that just by saying that an interface had already been subjected to useability testing resulted in any negative comments about an interface being reduced. This result confirms how careful we need to be when presenting products for testing to potential users. The practical impact of this is that a website may pass through useability testing without issues being discovered, be released and then not be used effectively owing to those same unreported useability issues.

A user trial of OOS prevention software at Massey University involved 12 pairs of people — each pair having one person who had reported OOS symptoms and a control person from the same area — and allowed them to use three different packages, each for a week. The subjects were asked to fill in daily diaries and complete a questionnaire based on the SUMI (Software Useability Measurement Inventory) after using each program. The results indicate that users want options that allow them to choose to have varied exercises and reminders for micropauses. The conclusions were “Overall, … subjects were prepared to have OOS prevention software running on their machines provided … they could use their preferred package. … An organisation may, therefore, have to move from prescribing one particular product to promoting a range.”
There were two papers on interruptions. It seems that we spend up to 90 minutes a day dealing with interruptions and it takes us at least 15 minutes to get back up to speed. Both the recipient and the initiator often see interruptions as beneficial. Karen Renaud discussed her PhD work: a software system — “HERCULE” — that stored your computer actions in the background throughout the day. Then when interrupted you could playback your last actions to quickly assess what you had done and what stage you had reached when interrupted. It was felt that the visualisation of previous actions would generate context rebuilding was a most beneficial aspect of the software. Eric Horvitz discussed research on the impact of instant messaging on performance in searching tasks. The research suggests that notifications sent during the fragile evaluation stage of a list search task are harmful to performance. It was suggested that smart messaging systems that hold messages and then interrupt a user only when they are between tasks would be much less disruptive.

Brian Gaines gave an account of Internet history. Did you know that the first major paper on HCI on human factors on the web was given at the USA CHI conference in 1996? The development of the Internet has been a very serendipitous process. Some HCI elements have transferred with borrowed elements from other areas but conversion of some borrowed items to new uses has created HCI issues. He concludes that the challenge is now to broaden the context of HCI from the individual to include the socio-cultural issues.

We socialised as well as having academic discussions about HCI. On the Tuesday night we all went up Centrepoint Tower, drank cocktails, had canapes and watched a Sydney evening wash across the harbour. Sydney can be a very beautiful city. Here I talked to some English PhD students and discovered that I was unusual because I use filters on my email as it comes in. Most people get all the email in one block and then try and read it all. Using filters allows me to put all the aus-ergo email into a folder — thus I see progress in messages and read the mail when I’m ready. It also allows me to filter out messages that have ‘rich’ and ‘$’ in the subject and automatically put them in the rubbish!

The Gala dinner was on the Thursday night at the Harbour Watch — on the southside of the harbour just up from the Harbour Bridge. It has a wonderful view of the harbour to Luna Park. Lots of food and lots of dancing. There was even a sparkler cake for a birthday. There was an interesting reaction to the custom of serving two different options. We seem to serve them alternately automatically. All the overseas visitors found this unusual bordering on vulgar and rude. Even with a fixed menu the people on my table expected they would be asked which of the two options they would like.

It was an interesting and fun conference. The conference proceedings are:


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**CHISIG AND THE ESA**

Jim Carmichael:

The last issue of CHISIG’s newsletter, Simplicity, had an article that I thought would interest many members of the ESA. The outgoing Chair, Greg Ralph, penned some thoughts in his report that reflected on the history of CHISIG and its relationship with the ESA. I was extremely heartened to read the well balanced and positive spin that was put on our relationship and would urge all members to take heed of this and look for opportunities to do likewise. The Board has been working with the Executive of CHISIG for a number of years behind the scenes to enhance our interactions and to ensure that the ESA broadens its professional representation to include a greater extent those with high level usability expertise. For those members interested in this discipline, please consider joining CHISIG — you can find details on CHISIG’s website at www.chisig.org/join/index.html. Also note that early negotiations have commenced about the possibility of having a joint ESA/OZCHI conference in Melbourne in 2002!

The following is an excerpt of Greg’s column in “Simplicity”.

---
From the (Ejector) Chair
Greg Ralph, CHISIG Chairperson

If you read our last edition, you will know that I am stepping down as CHISIG Chair to ‘eject’ myself into the new lifestyle of Parenthood early in the New Year – hence the title of this column. A new Chair will be elected at our December AGM in Sydney.

The Ergonomics Society of Australia (ESA) also has a new National President. Jim Carmichael (in Queensland) has taken over from Melbourne-based David Caple, and we would like to thank David for his past contributions and interest – we’d also like to wish Jim and the new ESA Board every success for the future.

Huh? What’s this got to do with CHISIG?? Many of our members and other Newsletter readers may not realise that CHISIG is an associated group of the ESA; others may not understand where this relationship came from – so let me briefly recap our history…

In 1984, CHISIG was established as a Special Interest Group of the ESA, on an initiative by its then President, Dr. Michael Patkin (who attended our August “Pictionary” tournament here in Melbourne). That year, Michael had attended the third “Human Factors in Computing Systems” Conference in the U.S. (now the annual CHI Conference) and was keen for Australia to form a similar network.

In 1986, Gitte Lindgaard and the Human Factors group at Telstra Research Labs took on the challenge of developing a local HCI network. As the CHISIG mailing list grew, a small newsletter (which evolved into the current “Simplicity”) was established to keep people informed of upcoming events.

In 1987, the first “all day CHISIG Seminar/Workshop” was held at Monash University – which evolved into our current OZCHI Conference.

Since those days, CHISIG and “Useability” have taken on a life of their own, and our links with the ESA (and the field of Ergonomics) have drifted into the background.

I was cleaning up my desk today (finally!) and discovered a past presentation which reminded me that Ergonomics addresses the ‘general problem’ of “the design of humans and machines interacting to perform work effectively”. Replace the word “machines” with “computers”, and you have a definition of HCI and Useability.

For mostly historical reasons, “Ergonomic” practice in Australia has focused predominantly on the physiological aspects of such interactions – in particular, addressing such OH&S concerns as occupational overuse injuries (once called “RSI”) and safe manual handling practices to avoid injuries to (eg.) workers’ backs. This is, in fact, the field in which I worked in the late 1980’s and early 1990’s. However, when I pursued my higher studies in Ergonomics, I was keen to broaden my focus to look at the cognitive aspects of these interactions – it was by following this path that I ended up in the field of HCI and Useability.

On 8th October last, I attended an ESA Board meeting as the CHISIG National Chair to report on our general progress. During the discussions, it was identified that there is a growing interest within the ESA membership to have a similar broader exposure to interactions between people and technology. The time now seems right to develop greater ties between Australians who are working to improve technology by adopting a human-centred approach to design, to bring together people from a variety of areas to learn from (and mix with!) each other.

To this end, a suggestion has been made to host a combined ESA–CHISIG Conference in Melbourne in 2002. The form of such a conference is only an idea at present, and needs to be explored – eg. whether both conferences would be together, with shared sessions and parallel streams, or only share a day together. Melbourne-based representatives of both CHISIG and the ESA need to be persuaded to take on its organisation. However, I’m hopeful that we can get this to happen, and re-develop the synergy between like-minded people…
SAFE DESIGN PROJECT DISCUSSION PAPER

[Editor: Rebecca Mitchell (at the time Senior Officer, Epidemiology Unit NOHSC) forwarded the following material to NSW Committee. It was received too late for inclusion in December issue of EA — in fact it would have needed to be included in October issue to allow time for feedback as requested by December 15. However because it is such an important issue it should be brought to members’ attention … some may wish to follow the matter further.]

Dave Mannes wrote:

I am writing to a number of people with whom we have had some contact recently in regard to the National Occupational Health and Safety Commission’s (NOHSC) safe design project. My main reason for writing is to provide an update on the project and to seek your input to its future direction. I would also like to alert you to a second national stakeholder forum planned for the project in around May 2001.

Safe Design Project Update

The safe design project aims to develop a greater recognition of the role of safe design in improving occupational health and safety performance in the workplace. The project has two main streams of activity:

• Safe design of plant and machinery.
• Design of buildings and structures to be safely constructed, maintained and used as workplaces.

In April this year, we held a national stakeholder forum: Designing for Health and Safety, in Adelaide. At the forum, we reported on the outcomes of a range of information gathering activities which comprised the first phase of the project. Workshops sessions then built on these reports and enabled interactive discussion on future directions for the project.

Since the April forum, our priority focus has been to work with the key design professional groups, especially engineers and architects, to further progress the safe design project. The NOHSC Chair, Professor Dennis Else and other senior NOHSC staff have had the opportunity to talk about the project at meetings of key committees of the design professional organisations and with individual representatives. We have been encouraged by the positive response received to the invitation that they take a leadership role in the development and implementation of initiatives aimed at promoting safe design issues and assisting their application.

We have also been looking at ways of assisting consumers to influence safe design “from below” and at the feasibility of providing a central point for easy access to information on a wide range of safe design issues on the internet.

Input to Future Direction of the Project

David Caple and Associates were contracted to undertake an independent analysis of the reports from various information gathering activities which comprised the first phase of the safe design project. The analysis, which is provided in the enclosed Discussion Paper, draws out the key themes and issues from these reports and suggests strategies to address them.

We are using this discussion paper to help us consult as widely as possible on the key issues and challenges we are all facing in increasing the level of thinking and acting on the occupational health and safety aspects of design in relation to plant and machinery and buildings and structures. Your comments and feedback on the Discussion Paper will be very much appreciated and will help us develop a major strategy paper to be considered by NOHSC early in 2001.

Details on how and when you can provide feedback are provided in Attachment 1 to this letter.

Second “Designing for Health and Safety Forum”

We are also hoping to hold a second “Designing for Health and Safety” forum possibly around May 2001, however dates are not yet firm ed up. The forum will most likely be held in Sydney and will aim to:

• report on progress with safe design initiatives and activities being undertaken by the project’s key groups; and
• to develop and agree on a longer term action plan for adoption by all key stakeholder groups.

We will keep you informed as planning progresses.
I do hope you are able to provide some feedback on the Discussion Paper. If you have any queries at all on the matters discussed in this letter please do not hesitate to call the Safe Design Project Manager, Judith Allen, on 02 9577 9453 or the Safe Design Project Officer, Alexandra Pitsis, on 02 9577 9487.

Yours sincerely,

Dave Mannes
Manager, National Solutions Projects

Attachment 1

HOW TO PROVIDE COMMENT/FEEDBACK ON DISCUSSION PAPER:

“How Assessment Of Policy Implications Arising from Research Undertaken for the Safe Design Project”

Comment on the Discussion Paper may be provided in one of the following three ways:

Emailing comments to the Safe Designer Project Manager, Judith Allen at: allenj@nohsc.gov.au or Telephoning EITHER Judith Allen (02 9577 9453) OR Alexandra Pitsis (02 9577 9487).

TIMEFRAME FOR COMMENT

It would be appreciated if you could provide your comments by Friday 15 December 2000.

SUGGESTED AREAS FOR COMMENT

You may wish to consider the following when providing feedback on the discussion paper:

Priority themes and/or strategies for allocation of resources.

Issues or concerns you may have with any of the themes and/or strategies included in the Discussion Paper.

Areas which have not been included in the Discussion Paper which clearly ought to be part of a comprehensive approach on safe design from an OHS perspective.

Any information you may have, or be aware of, which may assist in the progression of the safe design project. For example, information on good or bad designs which could be used as case studies.

COMMENT ON SAFE DESIGN DISCUSSION PAPER

FOR ATTENTION: JUDITH ALLEN, PROJECT MANAGER

FAX: 02 9577 9204

FROM:

Name........................................................................................................
Organisation............................................................................................
Phone........................................................................................................

[Editor: David Caple & Associates Report was sent as an attachment to Rebecca’s e-mail and makes very interesting reading. I will keep it available for anyone who wishes to receive it but suggest it may be available on-line directly from NOHSC or David himself. There is simply insufficient space to publish the full document but a brief outline with relevant excerpts follows:]

Assessment of Policy Implications Arising From Research Undertaken for the Safe Design Project

November 2000

Conducted By:

David Caple & Associates Pty Ltd

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Attachment 1 — Summary Table ......................... 37
The main activities for Phase One were:


3. Qualitative and quantitative survey work of the target groups to determine levels of awareness and understanding of the target groups and barriers and motivations to their take-up of safe design — undertaken by McGregor Tan Research, August 2000. This report is currently being finalised and is referred to in the Discussion Paper as: The McGregor Tan study (draft report).


Objectives of this Review

Analysis of the outcomes of research activities and the national stakeholder forum is needed to help draw together the various strands of the first phase of the project. This will help to identify key policy issues for further consideration and strategies and initiatives to address these issues which will comprise the second phase of the safe design project.

Particular areas of interest to be considered in the analysis are:

- What are the major themes that can be drawn from all the activities undertaken during this first phase?

- What are the main regulatory issues which need to be addressed, especially by the State/Territory OHS authorities?

- Which target groups should be given priority in terms of provision of assistance on safe design matters?

- Within these priority groups, are there particular industry sectors which should be targeted?

- What sort of guidance is needed and how can this best be developed and disseminated?

- Which current or proposed initiatives (jurisdictional, national and/or international) can be used or built on to provide the assistance required?

Executive Summary

The National Occupational Health and Safety Commission (NOHSC) has conducted a series of research studies as part of the first phase of the safe design project. These studies have included a review of legislation across Australian jurisdictions; surveys with stakeholders including designers, employers, governments, unions and consumers; a literature review; analysis of Coroner reports relating to workplace fatalities; and outcomes of a stakeholder forum conducted in April 2000.

A number of key themes have emerged from these studies which have been grouped in the following six broad areas:

1. Regulatory Environment
2. Education
3. Information Provision
4. Consumer Influences
5. Management Processes
6. Encouraging Compliance

Each of the key themes and the suggested strategies to address them are discussed in the following Section headed: “Discussion” (page 11). Most of the suggested strategies are targeted, either directly or indirectly, towards the key group of design professionals, in particular, engineers and architects.
The direct strategies involve active engagement and involvement of the designers in activities and initiatives aimed at assisting them give more consideration to OHS issues at the design concept stage. The indirect strategies mainly involve “downstream” parties such as consumers, standards setting bodies, government authorities and industry associations undertaking actions which will influence the take-up of safe design.

A brief summary of the main themes and strategies is provided below. A summary table is also provided at Attachment 1 (page 37).

**Regulatory Environment**

The Gunningham report raised most of the issues relating to this area. The review of current legal requirements of the project’s “upstream” target groups found that there was a failure to address OHS across the entire life cycle of an item of plant/machinery, a substance or building/ construction activity. Examples of these gaps were franchisers, contractors, retailers and repairers. Problems arising from inconsistencies with the adoption of the National Standard for Plant and the absence of a national approach to construction work were also identified. There was also discussion on problems with existing legislation, such as particular terminologies used, which limit the ability of the OHS authorities to bring successful prosecution actions.

The VIOSH report and the draft McGregor Tan report found that generally there was a low level of awareness among the target groups of their obligations in relation to safe design.

The discussion paper suggests a number of strategies to address these issues. However, as an initial step, it is recommended that a workshop attended by representatives of the NOHSC member agencies and key target groups be convened to discuss the range of issues and agree on an approach for the way forward.

**Education**

The key theme which emerged in relation to education was the need for relevant undergraduate and professional development courses to include training on safe design from an OHS perspective. The design professional groups are suggested as having a key role to play in this regard as they are directly involved in the accreditation of courses. Incorporation of safe design issues in professional competency standards will help to have the issue seen as an integral component of a ‘whole’ system of work rather than an additional, separate task.

**Information Provision**

There is a need for more information on how to meet obligations in relation to safe design which is easy to understand, provides practical guidance and is easily accessed. Apart from data available from coroners’ investigations (eg. the NOHSC fatalities study database), there is a paucity of useful statistical information available on the contribution of poor design to workplace traumatic injuries and deaths.

A range of strategies are suggested to address this issue including partnerships between relevant government authorities and professional/industry groups and sharing and promotion of good initiatives and strategies. Strategies to influence the content of industry codes and standards which are frequently used by designers are included. A national access point to link users to useful information available on the internet is also recommended.

**Consumer Influences**

Two of the studies highlighted the important role which consumers can play in influencing designers and other upstream groups to take greater consideration of OHS safe design issues at the design concept stage. A key strategy suggested was assisting consumers to include safe design requirements in specifications for contracts and purchasing documents when acquiring new plant and machinery or contracting for construction work.

A need for more consultation and feedback processes on safety issues between designers/ manufacturers and clients was also identified.

**Management Processes**

The main theme here was the need to integrate processes to consider safe design from an OHS perspective in to existing organisational management systems and systems-based approaches which encourage continuous...
improvement and cultural change. OHS authorities are encouraged to develop programs which would facilitate this process. Review of existing OHS management systems such as SABS and SafetyMap to ensure inclusion of safe design requirements is also recommended.

Encouraging Compliance
While a number of initiatives in the State/Territory OHS authorities were identified which encouraged and/or assisted compliance with safe design requirements, a more strategic, national approach is needed. More use of rewards and recognition schemes and promotion of current initiatives which provide practical guidance on complying with requirements is recommended. Consultations between OHS authorities and accreditation agencies to integrate safe design in existing auditing and accreditation processes is also suggested.

Attachment 1

Summary Table Of Themes And Strategies

<table>
<thead>
<tr>
<th>THEME</th>
<th>STRATEGY</th>
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<tbody>
<tr>
<td><strong>1. Regulatory Environment</strong></td>
<td></td>
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<tr>
<td>Upstream Obligation Bearers</td>
<td>Expand the obligation bearers to cover the “life cycle” of design to include upstream groups.</td>
</tr>
<tr>
<td>Risk based activity approach</td>
<td>Legislation should cover the activities within the “life cycle” of design due to obligation bearers often wearing various stakeholder hats.</td>
</tr>
<tr>
<td>Plain English explanations</td>
<td>Useability studies should be conducted to ensure the legislation can be understood by the obligation bearers.</td>
</tr>
<tr>
<td>Uniformity of Standards</td>
<td>OHS Authorities should consider evaluating their legislation to provide a more consistent approach to the adoption of the national standard for plant and to provide a nationally consistent approach to construction work.</td>
</tr>
<tr>
<td>Performance/process based approach</td>
<td>Consideration should be given to adopting regulation which integrates process-based standards into organisational and systems-based approaches and which also includes some specification where this is identified as necessary.</td>
</tr>
<tr>
<td>Knowledge of Safety Legislation</td>
<td>Obligation bearers require specific details of legislation covering them to ensure they are aware of their own obligations rather than the designer’s current focus on the operator to “use the plant, equipment, building or structure safely”.</td>
</tr>
<tr>
<td>Enforcement of Legislation</td>
<td>Selected prosecution of upstream groups is necessary to help raise awareness of their legal responsibilities.</td>
</tr>
<tr>
<td>Limitation of time clauses</td>
<td>Legislation should allow coverage of upstream groups, dating back from the time when problems are detected, without the limitation of time restricting the chance of prosecution.</td>
</tr>
<tr>
<td>Inspection competencies</td>
<td>OHS Authorities should develop competencies within their Inspectorate to ensure design issues are included in the inspection programs.</td>
</tr>
<tr>
<td>THEME</td>
<td>STRATEGY</td>
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<tr>
<td>2. Education</td>
<td>OHS Authorities should assist in the development of “tools” for the training of Upstream groups to cover the area of safe design.</td>
</tr>
<tr>
<td>Undergraduate training</td>
<td>Accreditation agencies responsible for courses involving upstream groups should be contacted to ensure safe design is included in the course curriculum and within the competencies of the course presenters.</td>
</tr>
<tr>
<td>Upstream Course competencies</td>
<td>Professional Associations representing the Upstream groups should be involved in the inclusion of safe design initiatives for their members utilizing materials and presenters from the OHS Authorities and the competent stakeholder groups.</td>
</tr>
<tr>
<td>Professional development of Upstream groups</td>
<td>Professional groups with expertise and involvement in safe design should develop partnerships as multidisciplinary teams to ensure safe design of work systems.</td>
</tr>
<tr>
<td>Partnerships between stakeholders</td>
<td>Specific safe design training modules should be provided to tradespersons to ensure that risk management competencies are acquired.</td>
</tr>
<tr>
<td>Tradespersons training</td>
<td>Develop material for the NOHSC website which will provide a central access point to existing safe design information and databases.</td>
</tr>
<tr>
<td>3. Information Provision</td>
<td>Case studies of examples of good and bad design should be developed as a resource for access on the internet.</td>
</tr>
<tr>
<td>Identify a single “portal” to simplify access to the safe design databases.</td>
<td>Stakeholders such as OHS authorities, unions and employer groups should develop partnerships within targeted industry sectors to develop programs such as “memoranda of understanding” relating to the provision of a safe work environment.</td>
</tr>
<tr>
<td>Case studies available on safe design</td>
<td>The OHS Authorities should review the tools provided in the regulations and codes of practice and develop “user friendly” tools targeted to the upstream obligation bearers.</td>
</tr>
<tr>
<td>OHS Authorities/industry partnering</td>
<td>The OHS Authorities should use the Coroners’ database to target priority design issues. This should integrate with the Prosecution strategy.</td>
</tr>
<tr>
<td>User friendly tools</td>
<td>Stakeholders should be encouraged to integrate safe design into their organization’s safety management systems.</td>
</tr>
<tr>
<td>Use of Coroners’ database</td>
<td>Stakeholders with representation on Standards setting bodies should promote the inclusion of safe design in to the criteria used to assess compliance with these Standards.</td>
</tr>
<tr>
<td>Integration with organizational strategies</td>
<td>Standards bodies should be encouraged by OHS Authorities to incorporate the process based models of risk assessment together with the relevant technical criteria in the assessment of compliance.</td>
</tr>
<tr>
<td>Integration with the Building Code of Australia and Standards Australia</td>
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<tr>
<td>THEME</td>
<td>STRATEGY</td>
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<tr>
<td>Introduce “buildability” into the evaluation process</td>
<td>The assessment of safe design should include the concept of “buildability” to ensure that the life cycle issues are included in the risk assessment processes.</td>
</tr>
<tr>
<td>Liaison with accreditation agencies</td>
<td>OHS Authorities should develop linkages with Accreditation agencies such as Local Government Health and Building Advisers; and Health Industry Hospital accreditation agencies to ensure that safe design is integrated into their assessment criteria.</td>
</tr>
<tr>
<td>Develop the SHARE style of databases to embrace a wider range of safe design applications</td>
<td>OHS Authorities should link with teaching courses and Professional Associations to obtain a wider variety of shared interventions. They should widely distributed a preformed sheet to facilitate the documentation of the outcomes. The monitoring of international databases for identifying safe design ideas should be undertaken.</td>
</tr>
<tr>
<td>Evaluate the consultation products used by multidisciplinary teams to assess safe design</td>
<td>Identify products such as CHAIR; ROAD; HAZOP where safe design could be incorporated into the consultative evaluation processes.</td>
</tr>
<tr>
<td>Further research into safe design guidelines targeted to specific stakeholders</td>
<td>OHS Authorities should liaise with the key project groups to develop a range of guidelines to provide practical advice on safe design for particular hazards which are often involved in traumatic workplace accidents.</td>
</tr>
</tbody>
</table>

4. Consumer Influences

Consumer awareness of safe design issues

Media program

Inclusion of safe design criteria in Purchasing and Tender documents.

Industry support networks

5. Management Processes

Integrate safe design into the OHS management systems

6. Encouraging Compliance

Compliance with the existing legislation relating to safe design requires clarification

OHS Authorities require programs to ensure that safe design initiatives already in the public domain are being complied with.
<table>
<thead>
<tr>
<th>THEMES</th>
<th>STRATEGY</th>
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<tbody>
<tr>
<td>Programs of recognition and rewards</td>
<td>OHS Authorities and stakeholders should be encouraged to promote safe design through their awards and recognition programs.</td>
</tr>
<tr>
<td>Integrate safe design into Patent review process</td>
<td>NOHSC should consult with Patent review agencies to determine how safe design can be incorporated into the evaluation processes.</td>
</tr>
<tr>
<td>Promotion of current initiatives</td>
<td>Current initiatives which provide guidance on incorporation of safe design principles should be promoted to encourage their take-up at a national level.</td>
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</table>

The title of the paper, authors and abstract may be found at: http://www.niih.go.jp/indu_hel/2000/2000_55.htm.

"Mostly harmless" as the hitchhiker's guide would put it — the result of deliberations by the 15 member IEA "Technical Committee on Human-Computer Interaction" (sadly no Australians involved). As it is unlikely to come across many desks, I thought I would very selectively pull out some interesting bits for discussion:

"Display users often tend to view their work from a short viewing distance and with poor posture. That is, they stress their musculoskeletal systems. Moreover, the related increase in accommodation and convergence is intense and sometimes causes an overloading of these visual functions. ... it is important to note that when there is a conflict between vision and posture comfort, normally the subject (particularly if involved in occupational activities) privilege (sic) the first, being visual needs (sic) considered essential for a VDT performance. Consequently it is not so unusual that neck, shoulder and arms muscular disturbances are linked, at least partially, to visual problems. These symptoms may be exacerbated for users of, for example, large CRT displays on small desks, and notebook PCs with non-detachable keyboards. "Each condition tends to constrain the posture to one fixed position." (p. 422, emphasis added).

The authors appear to recommend the use of a resting rather than floating keying technique, saying "Make sure there is space in front of the keyboard for you to comfortably rest your wrists" (p. 425); and provide recommendations for palm rest depth as a function of length of users hand.

The authors note that LCD are "superior to CRT displays in that the display is flat and has no curvature distortions" (p. 427).

Other recommendations include:
- using an external mouse whenever possible;
- avoiding wrist extension and ulnar deviation;
- and of course
- "avoid staying in postures where you are bent too far forward or backward, or twisted, for an extended duration" (p. 428) while avoiding the question of how far forward is too far forward!

The text accurately (and uselessly) points out that "Since a notebook PC’s display is generally positioned lower than eye level, you will use it in a posture whereby you are looking down at the display. Be sure not to bend the neck too much (lean the head too far forward)." (p. 428-429).

Interestingly, an appendix listing the ergonomic pros and cons of notebook PCs list the low position as a plus because "the eyes do not dry out very much" (p. 433).

The following brings to your attention an excellent conference focusing on issues of movement control and coordination that may be of interest to some. Don't expect practical applications (unlike the ESA conference 2 weeks before!) but do expect very high quality science.

Robin Burgess-Limerick

PRELIMINARY ANNOUNCEMENT

The 6th Biennial Motor Control And Human Skill Research Workshop
Esplanade Hotel
Fremantle
Western Australia
6th to 9th December, 2001
This is a biennial meeting, founded in 1991 by the late Professor Denis Glencross. His vision was for new and
established researchers in the area of motor control to gather and discuss their common research interests. From this beginning, the workshop has evolved into one that attracts Australian and international researchers involved in the study of motor control and human skill, from a diverse range of disciplines such as psychology, electrical and mechanical engineering, human movement studies, occupational and physical therapy, neurology, kinesiology and many others.

In past years the workshop has invited many renowned international researchers as keynote speakers. For the 2001 meeting there are similar plans afoot to invite keynote speakers. Professor Beverly Ulrich from the University of Michigan has agreed to attend as one of the keynote speakers for the 2001 workshop. Others will be announced once they have been confirmed.

As in previous years, it is envisaged that accepted papers will be published in a special issue of a human movement journal (e.g. Human Movement Science), and the abstracts in the Australian Journal of Psychology.

The conference is also proud to continue to offer the Denis Glencross Student Prize for the best student poster.

The conference will be held at the Esplanade Hotel in the historic port city of Fremantle where there will be accommodation available at the hotel or at other venues within walking distance from the Esplanade. Please see the hotel website at www.esplanade-freo.net.au for further information on the hotel and for links to other interesting Western Australian websites. Fremantle holds many attractions for the visitor including an exciting (scary) night-time tour of the now abandoned Fremantle Prison, weekend markets, café dining, and many other sites of historical significance.

For further information please contact:

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Secretary
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Or visit our website in the new year:
http://psych.curtin.edu.au/conference/motorcontrol/
We will keep this updated with all relevant information.

Mark Dohrmann has forwarded the following Canadian item about a topic that is increasingly on the international agenda:

DEMYSTIFYING ERGONOMICS — ERGO-ED: 2001 CONFERENCE.

Originally our ergonomics conference was intended for all school districts in BC, Alberta and Saskatchewan (Saskatchewan and BC being the only two provinces that currently have Ergonomic regulations) where ergonomic issues were a concern. However, the sessions presented at this conference are relevant for any industry where musculoskeletal injuries are a concern. Our target audience was expanded to include school districts in Alaska and Washington as well. With the new OSHA ergonomics standards we believe that more and more of the US school districts and other industries will be scrambling to comply.

Briefly, our school district is hosting a conference this spring in Vancouver (March 29 and 30, 2001). Designed to demystify ergonomics and help employers and unions work cooperatively through the challenges of implementing effective Ergonomics Programs, Return to Work Programs and Workplace Accommodation Initiates; Ergo-Ed:2001 promises to provide hands on training and practical solutions to complex human resources and ergonomics issues.
We are pleased to inform you that our plenary speaker will be Steve Donahue (http://www.canspeak.com/speakers/donahues.htm). Steve is an internationally renowned speaker; he is a certified Six Thinking Hats consultant and national media spokesperson for Cadbury’s Timeout Bar. He has appeared on CBC’s Nature of Things, CTV’s Canada AM and Global News. He’s been featured in numerous publications, including The Financial Post, The Toronto Star and The Ottawa Citizen. He was named the 1994 Consummate Speaker of the Year by Sharing Ideas Magazine.

Not only have we Steve Donahue as our plenary speaker, we also have Roberta Ellis, the VP of Prevention of the Workers’ Compensation Board of BC as a featured speaker at one of our luncheons.

This is the first conference of its kind being offered in BC and is being supported by the BC Workers’ Compensation Board, BC’s Ministry of Education, the BC School Trustees’ Association, the BC Teachers’ Federation, the Canadian Union of Public Employees and the BC Public School Employers’ Association.

Anyone who is responsible for the development and implementation of employee health and safety, or injury prevention programs, return to work or workplace accommodations, or responsible for financial allocation and operating budgets should not miss this conference.

If you would like a conference package, please contact me. For further information regarding the conference, please check out our website or contact me directly.

Margit Wagner, Claims Management Coordinator
Employee Health & Safety - School District #42
(in British Columbia)
phone: (604) 466 6220; fax: 463 4181
e-mail: mwagner@pop.schdist42.bc.ca
Ergo-Ed:2001 Conference Web Site:
http://info.schdist42.bc.ca/KeyInfo/General/MYWEB5/Ergo-Ed/ergo-home.htm
See you at the "Coast" March 29-30, 2001

THE NEW ZEALAND ERGONOMICS SOCIETY 10TH CONFERENCE
Thursday 26th July and Friday 27th July 2001.
Millennium Hotel, Rotorua, New Zealand

Announcement
The conference organising committee extends you a warm invitation to attend the 2001 Ergonomics Conference. The conference will be held over two days, the 26th and 27th July 2001, At the Millennium Hotel in Rotorua. Rotorua is a geothermal landlocked province near the centre of New Zealand’s North Island. Violent volcanic eruptions in the past have created many new and unique changes to Rotorua’s landscape, including craters, soothing mineral hot pools, streams, boiling mud pools and geysers. Sixteen crystal clear lakes surround Rotorua and are teeming with trophy-sized rainbow and brown trout. The Millennium Hotel is situated in the heart of Rotorua, within easy walking distance of the thermal spa pools, the beautiful Government Gardens, downtown shopping and many restaurants and cafes. Within a ten-minute drive you can visit Whakarewarewa Thermal Park, the famous Redwood Forest and many other tourist attractions.

FURNTECH
The latest information I have from the main organiser at Furntech is that it is planned to hold these forums on the following dates:
Melbourne: Wednesday 4 April
Brisbane: Monday 9 April
Sydney: Wednesday 11 April.

I will give further details when they come to hand.

In the meantime, Anne Hawes, the Standards Australia Project Manager for Commercial Furniture Committees, has kindly offered to send a copy of the European Draft Standard, prEN 1729-1, Chairs and tables for educational institutions - Functional dimensions, to any ergonomist who has a particular interest in the area and who is likely to attend one of the Forums. She may be
contacted at (02) 8206 6818 or by e-mail at anne.hawes@standards.com.au

Mike Stevenson

MINING DOCUMENTS
The following Mining documents are now available in PDF from the NIOSH site (see http://www.cdc.gov/niosh/whatsnew.html):

A Compendium of NIOSH Mining Research 2001 (Pub. No. 2001-114);
Mining Publication List (Pub. No.2001-106); and
Test Results of Collision Warning Systems for Surface Mining Dump Trucks (Pub. No. 2000-120): 1/8/01

Robin Burgess-Limerick

HEALTH RESEARCH PARTNERSHIPS DELIVERS $25.5 M FOR INJURY RESEARCH
Dr Michael Wooldridge announced the recipients of the new NHMRC Partnership grants (up to 0.5M$ per consortium for 5 years).
Research-based Solution to the Public Health Problem of Injury (Associate Professor Rod McClure), aims to develop a set of linked injury databases to demonstrate the effectiveness of population level interventions in five injury groups.

This research will also establish a mechanism for translating injury intervention research programs into national public health practice.

A/Prof Rod McClure said:

_The partnership aims to develop, through systematic reviews and basic research activity, the evidence-base to inform community injury intervention program. ... It will develop a set of linked injury databases to enable monitoring of prevention programs and their evaluation in terms of population health outcomes. ... It will also identify cost-effective population-level intervention programs in the five priority injury areas:_

1. childhood falls, poisonings and drownings;
2. young adults' risk-taking behaviour;
3. workplace injury;
4. falls in older persons; and
5. injury among indigenous people.

_This research provides the means for advancing the research evidence for injury control into a blueprint for action. For the first time in Australia, a plan for orchestrating a national response to the problem of injury will be developed based on coordination of effort and an enhanced research capacity._

The NHMRC will commit $2.5 million to the research, while another $1 million is being allocated to Prevention of Injuries in Older People by the Population Health Division of the Department of Health and Aged Care, under its Enhanced Primary Care Package._

Rebecca Mitchell

ALAN WELFORD PRIZE
A reminder that applications for this award are being sought prior to 30th June 2001 and any member is encouraged to apply if s/he has a published paper available from a referred journal. This prize has not been awarded for many years but the ESA Awards Committee is intent on the encouragement and recognition of the importance of publishing scientific contributions through refereed journals.
Associate Professor Straker

Congratulations are in order for Leon Straker. Leon has been successful in a recent application for promotion to Associate Professor within the School of Physiotherapy, Curtin University of Technology. This is a considerable achievement, in particular because Curtin operates on a competitive quota system of promotions within each faculty.

Rebecca Mitchell

Not wishing to move to Canberra, Rebecca has resigned from her position with NOSHC and has joined NSW Health Department as a Senior Policy Analyst, Injury Prevention Policy Unit.

Dr Verna Blewett

Verna graduated Doctor of Philosophy in December 2000 at the University of Adelaide. Congratulations! Oh what a wonderful feeling!!!

Greg Clynick

[Greg Clynick was a NSW Branch ESA Ergonomics prizewinner last year and presented the following material based on his Master’s Project for his MApSc (Ergo) UNSW, at a subsequent Branch Meeting. He also holds a BSc and a BTeach and is employed as Director of Flight Operations for the Department of Aviation UNSW. His interest in ergonomics goes back to his days as an RAAF pilot and is sustained today by its pertinence to flight safety.]

Background

In a recent event, a light aircraft in Western Europe impacted the ground while flying in cloud below safety height. A critical aspect of this incident was that the pilot ignored several advisory calls from controllers warning that he was approaching high ground. Irrationally, the pilot continued to insist that he knew where he was — based on his on board GPS (Global Positioning System). Unfortunately, he either was using his equipment incorrectly or misinterpreting its information. Both of these possibilities point to an ergonomic deficiency in that the interface between the pilot and his technology was sufficiently flawed to result in critical failure.

GLOBAL POSITIONING SYSTEMS (GPS) IN GENERAL AVIATION

“High Tech equipment in a Low tech world”

Fig 1: A similar aircraft to the one that crashed in Western Europe
As an industry, which has for many years been at the frontier of ergonomics research and application, interface problems associated with new technology are by no means new to Aviation. However, largely as a result of the high level of funding and training associated with airline operations, such occurrences are rare. In the general aviation sector however, this level of training is not typical, but up until recently, the relatively low level of complexity of available equipment generally offset this shortcoming.

With the advent of GPS (Global Position System), an advanced, powerful and inexpensive item of navigational equipment, many ‘non airline’ pilots are now faced with interface complexities well beyond any they have yet experienced. Further, the cramped nature of small aircraft instrument panels have compelled interface designers to minimise the size and number of controls and displays, thus compounding the demands on users. As a result of these constraints, the lack of established practice and perhaps the haste to get products on the market, a number of very distinct design philosophies have arisen. In turn, this design diversity has led to a range of interface processes, which are, at best, disparate and cryptic.

The study

The fundamental aim of the investigation was the conduct of usability trials on a representative selection of available GPS units. Due in part to availability, the units trialed were the King KLN 89B, the Garmin GPS 155 and the Trimble 2000 Approach. These trials were supplemented by ‘expert interviews’ and user preference questionnaires. For the evaluation, ‘GPS naïve’ candidates were given a common briefing on theory and use of their nominated units along with a condensed version of the manufacturer’s handbook. Following a simple dexterity test, candidates were assigned a series of five tasks spanning a cross section of the unit’s capacities and complexities. Error counts, error types and time to mastery were assessed and tabulated.

Results

In general, the results all confirmed deficiencies in interface design. Specifically, non-standardisation of the panel was cited as a key source of error. There were a number of ‘basic’ design shortfalls such as:
• inconsistency of control function;
• lack of system state feedback;
• lack of clear mode indication;
• high memory dependency;
• poor sequence logic and indication; and
• poor error management and recovery options.

The last of these in particular, appears to have created a trend towards user ‘habits’ that were not intended. These habits, referred to as ‘fudges’ in this investigation were in effect, inefficient though workable solutions found to overcome interface deficiencies.

**Major conclusions**

Keeping in mind the aviation context, the main conclusion focuses on standardisation of user interface designs and procedures. Fundamentally a regulatory and training function, user procedures require a more common physical and logical structure if they are to be adopted universally. Of the unit designs generally, the author saw much support for a more ‘Personal Computer’ style of interfaces, indeed, this was found to be so from a number of viewpoints such as:

• direct cursor control; and
• Clear / Backspace keys and Enter keys that function like those of a PC.

Similarly, better use of the screen to indicate mode and status — similar to the ‘heart beat’ cursors of a PC — were also regarded very favourably. The mechanics of the small key pad and sensitive controls in a turbulent airborne environment were also determined to be a source of error, but by far, the most problems were found to be in the interface ‘logic’. An issue, one would hope, that is at the heart of developments of future models.

**Some detail on the performances as determined by the user trials**

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<td><strong>Display</strong></td>
<td>All were very constrained by size and used discrete line LED displays. Though very readable under all conditions, the limited information added to user problems</td>
<td>Perhaps the best with a four line LED display presented on two pages, giving very good indication of mode and execution status</td>
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<td><strong>Controls</strong></td>
<td>Again very constrained by size and given the potential for airborne turbulence small controls could contribute to error. All units used push button and concentric knobs with sensitivity to activation speed</td>
<td>With a third knob function (inner knob had IN and OUT settings) the King provided more flexibility with input options</td>
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<tr>
<td>Useability and task complexity</td>
<td>All units required ‘recency’ for users to display and acceptable level of confidence</td>
<td>Maximum user confidence with advanced use</td>
<td>Maximum user confidence with initial use</td>
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For reasons that were not clear, the Trimble produced fewer errors than the other units at the complex end of the trials. This apparent anomaly could be the result of ‘deep end’ challenges faced by users during the basic task trials.

Table 1: Performance noted from user trials

**Postscript —The next generation.**

The GNS 530. An advanced full size display featuring coloured moving map display, more controls and clear status indication and incorporating several older technologies such as VHF radio and VOR (VHF navigation) units. A clever advantage of this multi function concept is that it frees panel space to allow for the full size GPS panel thus solving the bulk of the issued identified in the earlier types.

*Fig 5: The next generation GPS*
ELECTRONIC RESOURCES

OSHA’s Final Ergonomics Program Standard is available at:

Robin Burgess-Limerick

CONFERENCE CALENDAR

2001

29 – 30 March 2001
Ergo-Ed:2001 Conference, Vancouver, Canada
http://info.schdist42.bc.ca/KeyInfo/General/MYWEB5/Ergo-Ed/ergo-home.htm

1-3 May 2001
Safety in Action 2001 trade show and conference
Venue: Melbourne Exhibition Centre, Melbourne
Details: Bev Robinson
Email: safety@aec.net.au
Tel: + 61 (0)3-9654 7773
Web: www.aec.net.au

27 – 28 June 2001
2nd International Conference on Pleasure-Based Human Factors Design Singapore.
E-mail: MingPo.Tham@motorola.com

8 - 13 July, 2001
XVIIIth Congress of the International Society of Biomechanics Zurich, Switzerland
E-mail: isb2001@biomech.mat.ethz.ch
Web: www.isb2001.ethz.ch

11 – 12 July 2001
National Seminar on Ergonomics & Sport Exercise Physiology Denpasar, Indonesia
Contact: Professor Adnya Manuaba
adnan@denpasar.wasantara.net.id

18 – 21 July 2001
Second National Conference of Vocational Rehabilitation Providers Wrest Point Convention Centre, Hobart Tasmania

Contact: Mures Convention Management, Victoria
Dock, Hobart 7000
Tel: (05) 6234 1424, Fax: (03) 6234 4464
E-mail: cinventions@mures.com.au

5 - 10 August
New Orleans HCI International 2001 9th International Conference of Human-Computer Interaction.
Web: http://hcii2001.engr.wisc.edu

29 July – 1 August 2001
International Conference on Computer-Aided Design
Outrigger Wailea Resort, Maui Hawaii USA
Offers of technical presentations and/or full technical sessions are welcome.
Full details can be found on the web site under: http://www.ergonet.net/caes2001.html

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Canada B3J 1B6
Int. phone: +1 902 494-3296
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E-mail: Biman.Das@dal.ca

21 – 24 August 2001
The 6th Pan-Pacific Conference on Occupational Ergonomics Beijing, China — hosted by the Chinese Ergonomics Society
Contact: Wang Sheng, MD/Professor
Secretary General, 6th PPCOE
Department of occupational Health
Beijing Medical University, Beijing, 100083, P R China
Tel: 86-10-6209-1533, Fax: 86-10-6201-5585
E-mail: wsheng@public.bta.net.cn

30 September – 4 October 2001
De Meervaart, Amsterdam, The Netherlands
Contact: Nicolaes Tulp Institute, Mariska Beunk-Timmers
PO Box 23213, 1100 DS Amsterdam, The Netherlands
Tel: +31 20 5668585, Fax: +31 20 6963228
E-mail: m.p.beunk-timmers@amc.uva.nl
Theme: “Musculoskeletal research at work:
From problem analysis to effective interventions.”
Intending presenters should submit abstracts before 1
Further details available on website:
http://www.eur.nl/fgg/mgz/premus/frmain.html

28 – 30 November 2001
37th ESA Conference, Sydney New South Wales
“Better Integration: Bringing Research &
Practice Together”
Contact: Conference Organiser International Conferences
and Events (ICE) Aust P/L
Tel: +61 2 9544 9134
Fax: +61 2 9522 4447
E-mail: natalie@iceaustralia.com

6 – 9 December 2001
6th Biennial Motor Control & Human Skill Research
Workshop Esplanade Hotel, Fremantle, WA
http://psych.curtin.edu.au/conference/motorcontrol

2002
August 3 - 8, 4th World Congress on Biomechanics,
University of Calgary, Canada.
**Information for Contributors**

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E-mail: shanng@optushome.com.au

The deadline for each issue is 15th of the previous month etc … the deadline for April issue is March 15.

**Contributions**

Contributions to Ergonomics Australia are always welcomed and encouraged.

The activities, achievements, experiences, views and opinions of Members are always of interest. These can be in the form of letters, notices, notes, commentaries and articles.

Graphics (photos, illustrations, drawings, computer graphics etc) are particularly welcome and should be camera ready. Photos need not be black and white and negatives are not required.

The preferred form of submissions is via e-mail, either in the body of a message (short notices), or as an attachment (articles / letters). Files may also be mailed on floppy disc (or Zip disc if very large). Microsoft Word or Corel WordPerfect are the preferred formats (the new editor cannot transcribe MacIntosh files that are not in IBM type format.) Handwritten or hard copy submissions will only be accepted in exceptional circumstances as the Editor is not a trained typist, does not employ a secretary and her time is valuable!

Any inquiries about contributions should be directed in the first instance to the Editor.

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**Information for Advertisers**

**Inquiries**

All advertising inquiries should be directed to the Federal Office of the Society.

Contact:
Ms Christine Stone
Tel: 02 6242 1951 Fax: 02 6241 2554
E-mail: esa@interact.net.au

9 am æ 1 pm Monday to Thursday and 9am-12 noon on Friday

**Size**

The finished page size of the Newsletter is B5 (270mm x 176mm)

Printed column sizes are 210mm x 152mm (double) or 21mm x 72mm (single)

**Advertising Copy**

Must be camera ready and must arrive at the ESA Federal Office by the Copy Deadline Submission Date for the Edition in question.

A professional advertising service is available for producing camera ready copy if required. For further inquiries regarding this service contact:

Mr Goro Jankulovski, Acute Image
Tel: 03 9381 9696 Mobile: 0414 605 414
E-mail: goro@acuteimage.com.au

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**Enclosures**

Pre-printed enclosures (leaflets, brochures) etc are welcome for inclusion with the Journal.

Enclosures should be pre-folded to fit inside the finished Journal.
Rates for enclosures:
Enclosure not requiring folding  $ 412.50
Enclosure requiring folding $ 462

These rates may increase if the enclosure weighs more than the equivalent of 2 standard weight A4 pages. These rates are inclusive of GST.

640 copies should be sent to arrive at the ESA Federal Office by the Copy Deadline Submission Date for the Edition in question.

Address for mailing copy and/or enclosures
ESA Federal Office
Canberra Business Centre
Bradfield Street
DOWNER ACT 2602

Advertising copy and enclosure submission deadlines for 2001

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Circulation

The Journal is published six times a year and is received by approximately 620 professionals Australia wide working in the areas of ergonomics, occupational health and safety, and design.

Ergonomics Australia On-Line (EAOL)

Advertising and sponsorship opportunities also exist in the electronic version of this journal (EAOL) which is managed by Dr Robin Burgess-Limerick at Department of Human Movement at Queensland University. It is downloaded by more than 100 Australian and International readers each week.

http://ergonomics.uq.edu.au

Caveats

The views expressed in the Journal are those of the individual authors and contributors and are not necessarily those of the Society.

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The Society takes no responsibility for products or services advertised therein.

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