



AEES Newsletter

No 2/92

The Society

David Rossiter

There are now 152 members of AEES, many have joined as a result of IEAust members choosing AEES as their preferred Society. Total subvention fees are still being worked out. As at 31 August 1992 the balances were as follows:

Savings Account* Balance \$6272.83
Cheque Account Balance \$ 459.51

* includes establishment grant from IEAust.

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Presidents column - Charles Bubb

World Seismic Safety Initiative A theme which we will introduce to our Sydney seminar on Friday 25 September is the World Seismic Safety Initiative, WSSI. This new initiative was agreed at the recent 10th World Conference on Earthquake Engineering (10WCEE) held at Madrid, Spain where we were represented by our Secretary Kevin McCue, who is currently the Australian National Delegate to the IAEE.

WSSI is seen as a long term activity and although fully consistent with the IDNDR will extend far beyond that decade - that is far beyond the year 2000. In addition it will be undertaken in conjunction with the international earthquake engineering community through the IAEE.

The IAEE is convinced that professional practice development and research requires international cooperation to be truly efficient and effective. For example it will enhance international cooperation to address gaps in knowledge and practice. The most significant gap in current knowledge in earthquake engineering, as far as Australia is concerned is the lack of any model for intra-plate earthquakes which constitute virtually all our seismic risk.

This stands in stark contrast to the well known plate tectonic model for inter-plate earthquakes of the major seismic zones.

We must look to the international earthquake engineering community to bridge this gap through fundamental research beyond AEES's resources, but we must collect and contribute all the useful data that we can.

The WSSI initiative is focussed on mitigation rather than prediction. The mitigation focuses on buildings because buildings that collapse cause almost all deaths in earthquakes. That is, WSSI is based on the principle that *better construction practices, whether for engineered or traditional non-engineered construction, save lives and protects property.*

The challenge of WSSI to Australia, as it is to every nation and community, is to find the right mix of actions that will manage our earthquake risk as an integrated strategy consistent with our responses and aspirations and with due regard to all other risks.

We may well find the right mix of actions for Australia by concentrating our efforts on three of the nine WSSI high-priority safety needs. The three I would select are:

- Develop reliable ways to characterise earthquake hazards and risks
- Develop a consensus on desired levels of performance in earthquakes for buildings and other structures
- Assess ways to achieve these desired performance levels.

The seminar will give us the opportunity to discuss the Initiative, and perhaps to use its nine listed seismic safety needs to reach a consensus on what our priorities should be.

See you there!

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CONFERENCE AGM & ELECTION

*****In case you missed it *****

The Australian Earthquake Engineering Society and Specialist Group on Solid Earth Geophysics are co-sponsoring a one-day meeting and AEES-AGM in Sydney on 25 September 1992:

A draft agenda for the AGM is outlined below.

Earthquake Resistant Design and Insurance in Australia

Institution of Engineers, Alfred St
Milsons Point, Sydney
Friday
25 September 1992
08:30 - 17:15

followed immediately by AGM

AEE'S ANNUAL GENERAL MEETING

25 September 1992

Institution of Engineers
Milsons Pt Sydney
17:30

DRAFT AGENDA

- President's Report
- Hon Secretary's Report
- Hon Treasurer's Report
- Election of new executive
- Election of committee
- Close

ELECTION

NOMINATIONS (to Hon Sec by 22 Sept)

CHAIRMAN
HON SECRETARY
HON TREASURER
EDITOR

(current executive has nominated)

10WCEE - Kevin McCue

Madrid Spain turned on summer in the week starting 19 July for the 10th World Conference on Earthquake Engineering, with daily temperatures reaching 40°C. No small affair either with 1500 delegates (half from Japan) in attendance, at their choice of 10 simultaneous sessions, special theme sessions, poster displays and book and information booths. I attended, as National Delegate, the day-long meeting of delegates on the Thursday; as IDNDR representative, the equally long special theme session on Tuesday on the IDNDR where the proposal to establish WSSI was debated (see Charles Bubb's column above); and by invitation as member of the panel at the strong-motion theme session on the Wednesday. Needless to say I didn't get to hear many of the formal papers presented.

There were no pivotal issues at the 10WCEE as there were in Tokyo and Kyoto for the previous WCEE where much attention focussed on base isolation and active feedback control on building response during an earthquake. Trends in Building Code formulation were addressed, including a session on the in-preparation Eurocode (their meetings are apparently every bit as contentious as ours) and other subjects included recent damaging earthquakes, seismic risk and hazard, soil-structure interaction, structural analysis, retrofit of structures, microzonation, expert systems.

The meeting of National delegates discussed the issue of representation of member states of the former USSR and Yugoslavia and agreed to admit those which had made formal application for membership. The recommendations of Tuesday's meeting on the WSSI proposal were relayed to the IAEE executive with a recommendation for their adoption, and Chile chosen as the site for the 11WCEE despite strong support for alternative venues in England and China. The outgoing IAEE executive were warmly congratulated for the successful organisation of the 10WCEE and a new executive was elected with New Zealand's Tom Pauley as Chair.

With so many members present, the occasion for a get-together of Australian and New Zealand representatives on code harmonisation was not missed. David Dowrick stressed the need for a comparison of the seismic hazard facing New Zealand cities with hazard in Australia; particularly Auckland where the risk is relatively low for New Zealand. Gary Gibson and myself elected to do the Australian half of the study.

At the Conference dinner, Bruce Bolt (Berkeley Campus, University of California) spent an hour in discussion with myself and Gary Gibson. One of his students is working on using the Newcastle aftershock accelerogram as a Green's function to model the ground motion at Newcastle in the mainshock. We briefed him on our submission to create an Australian Cooperative Research Centre in Engineering Seismology (at Melbourne), and the application by BMR for funds to monitor Australian cities and improve the National Seismographic Network.

The main benefit of such conferences is to provide a venue for people with similar problems to get together, though this reason is probably never used as the justification for such trips.

On another evening I joined a tour to the Geographical Institute which is the Spanish sister organisation to the Australian Seismological Centre at BMR (AGSO), charged with monitoring earthquakes and nuclear explosions, and producing earthquake hazard maps of Spain. It was interesting to see how

closely matched were the programs of the two organisations.

In Tokyo I was the only resident Australian attending the 9WCEE but other Australians at Madrid included Gary Gibson (SRC-RMIT), Graham Hutchinson (Melbourne Uni) and Trevor Jones (BMR temporarily at Dept of Resources & Energy, Fiji).

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NEWS ITEMS

• *The final* draft Australian Standard DR 91094 S: part 4 of Design Loads, has been circulated again for committee comment.

• **BMR no longer** The Bureau of Mineral Resources (BMR) has become the Australian Geological Survey Organisation (AGSO)- at least for a year when a review of its management structure is due to be completed. The only change has been the removal of the Resource Assessment group to the parent Department (Department of Primary Industries and Energy).

• **Earthquake monitoring in Queensland to cease?** In response to cuts in Government funding, the Queensland Department of Resource Industries decided that earthquake monitoring was not a core function and would be discontinued from July 1st 1992. A temporary reprieve has been granted to determine whether a new home can be found for the group.

• **Pacific Conference on Earthquake Engineering PCEE '91** - Proceedings are now available. The 1120 page 3-set volume contains the 87 programmed papers, 3 on the 1989 Newcastle earthquake, and addresses of the keynote speakers on theme issues; Microzoning, Non-structural elements, Areas of low seismicity and Reinforced concrete design. Price NZ150.00 incl post. from: NSNEE, PO Box 17-268, Karori, Wellington, NZ.

• A video of the effects of the October 1989 Loma Prieta earthquake is available on loan to members at IEAust, Canberra.

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Recent Australian earthquakes

The following table summarising recent Australian earthquakes was supplied by

the Australian Seismological Centre, BMR. The Centre publishes a more detailed monthly list for subscribers and contributors.

April - July 1992 Earthquakes

1992	ML	Place
July		
01	4.7	NNW Exmouth WA
02	3.0	Dalton NSW
07	3.2	112km E Marble Bar WA
12	3.0	232km SSE Broome WA
12	3.4	190km WSW Perth WA
14	3.7	Tobin Lake WA
14	3.5	NT/WA Border
15	4.8	E Canning Basin WA
15	4.4	39km E Tobin Lake WA
15	3.5	Tennant Creek NT
27	3.0	68km NNE Docker R WA
27	4.0	40km NNW Broome WA
28	3.8	40km N Wilpena Pound SA
29	3.1	50km NNW Broome WA
June		
02	3.2	96 km NW L Mackay WA
05	3.0	Thompson Dam Vic.
11	3.1	Caltowie SA
13	4.5	N of Lake Neal NT
14	3.1	146 km NE L. Mackay WA
25	3.2	157 km NW Carnarvon WA
May		
01	2.9	Bradford Hills Vic
10	2.9	Young NSW
14	2.9	42 km E Norseman WA
23	3.1	Tennant Creek NT
27	3.2	Caltowie SA
29	3.1	Tennant Creek NT
April		
16	3.2	Landor WA
17	4.2	Tennant Ck NT
18	3.6	Derby WA
26	3.0	Petermann Ra NT
28	3.1	Bradford Hills Vic
28	3.0	Morawa WA

COURSES & CONFERENCES

- International workshop on the Erzincan earthquake. Erzincan, Turkey, 23-25 October 1992.
- 3rd International Conference on Case Histories in Geotechnical Engineering, 1-5 June 1993, St Louis, MO, USA.
- 10th International Caly Conference, University of Adelaide, SA, 18-26 July 1993
- The 10th European Earthquake Engineering Conference: 28 August to 2 Sept 1994, Vienna, Austria
- (flyers available from Hon Secretary)

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The following article was extracted from the 'IEAust up DATE' column

Earthquake data risk

Meeting 25 September

Earthquake data not collected immediately is irretrievable. Yet this data is not seen as very important amidst increasing competition for funds and grants, according to the president of IEAust's Australian Earthquake Engineering Society (AEES), Charles Bubb.

'Without data we cannot do our work,' said Bubb.

'If we do not have it, we must invent it. In other words, guess. The penalties for guessing wrong are being treated more harshly by the community,' he said.

Bubb expects funding shortfalls to be among the issues discussed by AEES members during a one-day meeting in Sydney on 25 September.

The meeting will bring together engineers interested in earthquakes and their effects on people and geophysicists concerned with what earthquakes can tell our society about the earth.

Further information from David Rossiter (06) 281 5666.

EARTHQUAKE PUBLICATIONS

EARTHQUAKE TREMORS FELT IN THE HUNTER VALLEY SINCE WHITE SETTLEMENT can be purchased for \$18.50 (\$1.50 postage) from Hunter House Publications, PO Box 536, Raymond Terrace 2324.

• The IEAust Newcastle Earthquake Study is still available at EA Books, PO Box 588, Crows Nest NSW 2065 at the reduced price of \$30.

• There are a number of BMR Bulletins and reports describing earthquake activity in Australia which can be purchased from BMR. The *Isoseismal Atlas*, parts 1 & 2, (Bulletins 214 & 222) contain maps and descriptions of 149 felt and damaging earthquakes. A third edition with another 80 odd maps is being prepared. The Australian Seismological Centre also publishes an annual report featuring the year's seismicity with summary, glossary and descriptions of the larger earthquakes. Reprints of papers on the Newcastle and other important earthquakes may still be available from the authors. A monthly summary of Australian and world-wide activity is distributed at cost to subscribers.

The **epicentre map** was created from the AGSO earthquake database. It depicts all known Australian earthquakes of magnitude ML 4 and above between 1900 and 1991.

