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AEES is a Technical Society of
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AEES Newsletter

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Presidents Column

In this, my first effort as President I would like to take the opportunity to thank the outgoing National Committee of Bill Boyce (President), Russell Cuthbertson (Hon Secretary), Col Lynam (Treasurer) for the outstanding efforts in guiding the Society through these past few years. Also, continued thanks must go to Vaughan Wesson for his stellar efforts in maintaining the AEES Webpage and of course Barbara Butler for keeping us all on track by managing the Secretariat.

At this point, I should introduce the incoming management committee of myself, Mike Griffith (President), David Love (Hon Secretary) and Peter McBean (Treasurer) and Jim Wilson (SA Rep) who will be joining our meetings. To give you a little more background on the committee, I am an Assoc. Professor at the University of Adelaide specializing in the seismic analysis and design of masonry and concrete structures. David is a seismologist at PIRSA (Primary Industry and Resources SA) who works tirelessly to maintain (and maybe even grow) our network of seismographs and strong ground motion recorders in SA. Peter is a partner in the consulting engineering firm Wallbridge and Gilbert and has been a driving force in much of the seismic upgrade work undertaken by the state in recent years. Like Peter, Jim has also been active in the seismic rehabilitation of much of the state built infrastructure through his role as principal of Jim Wilson Pty. Ltd.

As you can see, we are all closely associated with the topic of earthquake engineering in our day jobs so working for the Society will be a natural extension for us all. Speaking for the new management committee, I hope we can live up to the standard set by Bill's team.

I must say, the management committee has been busy planning for our annual conference and AGM that will be held in Adelaide this year. The date and venue has been set: October 17-18 on campus at the University of Adelaide. The conference will be a 2-day affair, running over Thursday and Friday with the AGM to be held on the Thursday at the end of the afternoon session and before the conference dinner on that evening. Based on the sentiments expressed at the 2001 conference in Canberra, the conference theme this year will be focused on "*Total Risk Management in the privatized (de-engineered public sector) era*", or something to that effect. We have held discussions with representatives of the State Emergency Service in SA to canvas issues that they see as critical in order to identify areas where we believe the Society could be of most help to them and their like organizations in other states. Work is progressing well on this matter and we hope to have a flyer with more details on the conference available shortly. In the meantime, I urge all members to pencil the 17-18 October into their diaries and commit themselves to supporting the Society's conference in 2002.

Mike Griffith

(Note from Editor: Your flyer comes with this Newsletter)

The New Society

President - Prof Mike Griffith (Adelaide Uni)
Secretary - David Love (PIRSA)
Treasurer - Peter McBean (Wallbridge and Gilbert)

The state representatives are:

NSW	Michael Neville
Qld	Russell Cuthbertson
Vic	John Wilson
Tas	Vagn Jensen
ACT	Gerhard Horoschun
SA	Jim Wilson
WA	Peter Gregson

IAEE National Delegate to 2004 is John Wilson (The University of Melbourne).

The AEES Webmaster, Vaughan Wesson (SRC) was re-elected.

Barbara Butler was thanked for her sterling efforts and continues to manage the Secretariat from The University of Melbourne.

The Society website/email list

Dear AEES Members,

The AEES web site is at www.aees.org.au. Any contribution from you on the following topics is most welcome

- details of interesting recent publications
- significant research projects in earthquake engineering (in Australia?)
- links to other relevant Web sites

Please send me your contributions/suggestions via email.

The AEES email list is operated by the Seismology Research Centre, Melbourne. If you would like to register please notify Vaughan Wesson vaughan@seis.com.au

Vaughan Wesson

AUSTRALIAN EARTHQUAKE ENGINEERING SOCIETY AGM – Canberra, 21st November 2001

The meeting was held at the Australian Defense Force Academy.

Present:

Michael Asten, Bill Boyce (President),
Amy Brown, Barb Butler, John Berthon,
Clive Collins, Russell Cuthbertson (Secretary),
John Dossetor, Alton England, Gary Gibson,
Norm Himsley, Vagn Jensen, Trevor Jones,
Nelson Lam, David Love, Col Lynam
(Treasurer), Peter McBean, Kevin McCue,
Michael Neville, Adam Pascale,
Cvetan Sinadinovski, Mike Turnbull,
George Walker, John Wilson.

Apologies: Mike Griffith, Vaughan Wesson,
Gerhard Horoschun, Graham Hutchinson, Gary
Huftile.

Previous Minutes The minutes of the 2000
AGM in Hobart, which had been published
previously in the AEES Newsletter, were
distributed at the meeting and accepted as an
accurate record (moved by Kevin McCue and
seconded by Mike Neville).

Reports

President: A report of the Executive's
activities for the year was presented by Bill
Boyce (see attached). Bill thanked Kevin
McCue and the other members of the
Conference organising committee on a
successful conference, as well as other members
of the outgoing Executive for their assistance.

Treasurer: A report on the Society's finances
was presented (see attached). There are 240
financial members. The Society now has an
ABN and we are still seeking a ruling from the
Australian Tax Office on our status as a
charitable organization.

Editor: Kevin McCue reported that he had prepared two
editions of the Newsletter with a third edition
hopefully being distributed before the end of the
year. Kevin thanked Barb Butler for her help
with the collating, printing and distributing.
Geoscience Australia has assisted with the
Newsletter via the provision of earthquake data.
It is hoped that this assistance will continue.

Web editor: Gary Gibson reported that there
were still only a limited number of members on
the Society's email list but that the web site had
had a large number of hits.

Queensland chapter: Col Lynam reported on the
activities of the Queensland Chapter.

Future conferences

The 2003 PCEE conference is being held in New
Zealand in February 2003. Members decided to still
have an AEES conference next year (2002) and in
2003. The final decision regarding the 2003 conference
should be made at the next AGM.

The offer from South Australian members to host the
2002 AEES Conference in Adelaide was accepted.
Melbourne has indicated its interest in hosting the 2003
conference.

Election of National Committee

As this was the third year in office the current
Executive stood down. Nominations were received and
after voting the following were elected.

Executive:

President	Mike Griffith
Secretary	David Love
Treasurer	Peter McBean

State reps were:

Qld	Russell Cuthbertson
NSW	Mike Neville
ACT	Gerhard Horoschun
Vic	John Wilson
Tas	Vagn Jensen
SA	Jim Wilson
WA	Peter Gregson

General Business:

Register of engineers for post-earthquake response assistance: A letter to EMA elicited no support for our proposal and Bill Boyce suggested that we let the matter rest unless the new Executive decided to pursue the matter further. Some members expressed the view that it should be kept on the agenda and should be looked into by the new Executive.

Student Research Scholarships: Kevin McCue expressed disappointment that there was no scholarship awarded this year and said it was a matter that the Society needs to support. Bill Boyce replied that the scholarship should only be awarded to candidates that the judges deemed were worthy.

Conference proceedings: The limitation on the length of extended abstracts in the Conference Proceedings (5 pages) was discussed. Some members expressed the view that longer papers should be allowed. The possibility of the Proceedings being published via CD or via the Internet was discussed. The possibility of publishing a Society journal was also discussed.

Kevin McCue moved a vote of thanks to the outgoing Executive for its active involvement over the past three years and for the instigation of several new initiatives.

Earthquakes in Australia ML! 2.5 or felt

December 2001 – April 2002 **

The following extract from the Australian earthquake database was supplied by Geoscience Australia. It includes data from the Seismology Research Centre Victoria, Primary Industries and Resources SA, and Universities of Tasmania and Queensland.

The largest event is the M7.1 mid-ocean ridge earthquake south of the Nullarbor that was reported felt in SW WA. The most interesting events listed are the swarm of earthquakes at Burakin WA with three M5+ events. These were widely felt but caused no damage. Swarms normally fade out over months but this is an unusual one for the size and total number of events, three M5+ events and more than 10,000 recorded to April. Some seismologists believe that a larger event is imminent (see article P4).

Many of the listed earthquakes were felt, in WA, SA, Tasmania, Victoria and NSW. The largest magnitude of 5.2 is about the once-per-year event magnitude for Australia.

Date	Time	Lat	Long	ML	Place
2001					
Dec					
01	220905.	12.97	122.59	3.4	Timor Sea
06	173106.9	31.9	138.42	3.1	Hawker SA*
06	201011.	28.71	148.82	2.9	Thallon Qld
07	002223	37.55	119.76	2.6	Southern Ocean
07	213848.	35.24	123.69	2.9	Southern Ocean

12	140235	42.85	124.65	7.1	S of Australia
12	004326	28.63	139.12	3.1	Etadunna Area SA
14	212612.	36.8	150.97	2.8	Tasman Sea
16	203857.	37.12	147.15	3.4	Mt St Bernard Vic*
18	44751.6	31.38	117.68	2.6	Kellerberrin WA*
21	30743.4	33.89	148.33	3.6	Grenfell NSW
21	115946.	30.53	117.04	2.7	Burakin WA
25	50349.7	30.54	117.06	2.6	W Burakin WA
25	005649	30.53	117.08	4.0	Burakin WA*
25	050628	30.55	117.03	3.5	W Burakin WA*
25	051054	30.53	117.05	3.6	Burakin WA *
25	93123.3	30.56	117.03	2.6	Burakin WA
26	185444.	31.38	117.69	3.1	Kellerberrin WA
26	185838.	30.52	117.04	3.5	Burakin WA
28	163136.	30.56	117.06	4.5	Burakin WA*
28	220303.	30.54	117.04	3.4	Burakin WA
29	162150.	30.55	117.05	2.7	Burakin WA
30	80201.7	19.64	133.84	2.9	Tennant Ck NT
30	81252.3	19.66	133.83	2.7	Tennant Ck NT
31	74812.5	37.38	144.98	2.7	Wallan VIC
2002					
Jan					
03	11315.9	30.55	117.07	2.6	Burakin WA
05	145142.	38.32	140.75	3.6	Mt Gambier SA*.
08	234958.	30.54	117.03	2.7	Burakin WA
10	151950.	30.54	117.06	3.3	Burakin WA
10	191707.	30.55	117.07	3	Burakin WA *
21	193427.	30.56	117.07	3	Burakin WA.
22	91802.8	36.35	144.78	3.3	Rochester Vic
22	081451.	30.54	117.05	2.7	Burakin WA
31	013605	30.55	117.08	2.7	Burakin WA
Feb					
02	003440	29.32	119.23	2.6	Lake Barlee WA
02	034447	30.57	117.01	2.6	Burakin WA
05	175148	17.46	122.32	3.5	Broome WA.
06	044823	22.79	120.41	3.7	Pilbara WA.
07	124857	40.36	143.89	4.5	Near King Is. Felt at Currie, Burnie, The Nut, Smithton, Hellyer Beach, Montagu, Strahan
07	233610	40.89	143.55	3.5	Near King Is
09	83458.5	34.04	148.11	2.7	Grenfell NSW
11	213314.	29.18	136.47	3.3	W Lake Eyre, SA
14	132720.	34.44	150.65	3.9	Avon Dam NSW Felt by many in Sydney and Wollongong
13	003230	30.55	117.02	3.0	Burakin WA
13	003315	30.57	117.00	3.1	Burakin WA
13	164310	30.53	117.05	2.6	Burakin WA
24	182901	31.4	138.59	3.1	Parachilna SA
24	202818.	30.53	117.05	2.9	Burakin, WA
25	063908	30.52	117.06	2.7	Burakin WA
25	173717	30.53	117.06	3.5	Burakin WA
27	073524	30.51	117.08	2.6	Burakin WA
27	114715	34.42	148.64	3.0	Boorowa NSW
28	033915	30.51	117.06	2.6	Burakin WA.
March					
01	184745	30.49	117.06	3.1	Burakin WA.
01	153828.	31.75	138.49	2.6	Hawker SA
03	094429	30.50	117.06	2.9	Burakin WA
04	075021	33.82	147.30	2.7	West Wyalong NSW
05	014739	30.49	117.10	5.1	Burakin WA. Widely felt in

					southwest WA, and in tall buildings in Perth. Minor damage near Burakin
05	032957	30.50	117.08	4.6	Burakin WA * I
05	20803.1	30.50	117.06	2.8	Burakin WA
05	124126.	30.51	117.06	2.9	Burakin WA
17	10959.8	27.54	125.39	3.3	Great Victoria Desert, WA
17	75027.6	33.87	148.74	2.9	Cowra NSW*
19	30717.6	37.08	137.81	3.2	S Macdonnell Peninsula SA.
20	114704.	30.51	117.06	3.2	Burakin WA
20	221740.	30.50	117.06	2.6	Burakin WA
20	223250.	30.51	117.04	2.6	Burakin WA
21	51028.8	30.48	117.08	2.8	Burakin WA
21	213945.	30.50	117.07	2.9	Burakin WA
22	32545.9	30.51	117.06	3.1	Burakin WA
22	32459.7	30.50	117.08	3.3	Burakin WA *
23	131622.	30.52	117.09	5.1	Burakin, WA
23	142047.	30.51	117.06	3.5	Burakin WA
24	115649.	26.72	131.75	3.5	Musgrave R SA
24	191333.	26.80	131.71	3.1	Musgrave R SA
24	192706.	30.52	117.07	3.0	Burakin WA
25	75213.6	22.97	131.04	2.6	Newhaven NT
25	54442.4	30.52	117.07	3.7	Burakin WA
27	150128.	30.54	117.08	3.1	Burakin WA
30	31003.6	19.86	134.07	3.0	Tennant Ck NT
30	55820.5	30.53	117.1	2.8	Burakin WA
30	223942.	30.53	117.06	3.3	Burakin WA
30	211546.	30.53	117.11	5.2	Burakin, WA*
April					
03	120648.	30.52	117.07	3.5	Burakin WA
05	191031.	25.12	112.15	4.1	Shark Bay WA
06	113558.	26.35	114.45	2.8	SE Carnarvon WA*
07	64103.8	32.96	138.27	2.8	Wilmington SA
07	44830.7	30.53	117.06	2.8	Burakin WA
08	214023	35.44	148.52	2.8	Talbingo NSW
09	221900.	16.06	120.12	3.6	Rowley Shoals WA
15	70405.9	30.56	117.07	2.6	Burakin, WA
13	3717	26.48	137.71	3.0	Poeppl Corner SA
11	214911	19.75	133.91	3.1	Tennant Ck NT
16	160126	23.02	129.96	3.4	Mount Redvers NT
18	180207	30.53	117.06	3.8	Burakin WA
15	224454.	23.15	130.04	3.4	Mt Redvers NT

* felt ** apologies for the lack of date order

The AEES subscription year is the fiscal year. It is expensive to send each member an individual reminder that fees are due so please help us by sending your subscription for 2001/2002 to AEES if you haven't already done so (attn: Barbara Butler, Civil and Environmental Engineering Dept, Melbourne University Parkville Vic 3052) or renew through IEAust's annual subscription system by marking AEES your preferred Society. If you change address or if you know a member who is not receiving the newsletter please advise the Secretary or Barbara.

News

Moderate earthquakes strike WA and Eastern US

WA Seismologists and State Emergency Services staff are excited but puzzled by a swarm of earthquakes occurring near Burakin WA, a small wheat-belt town about 200 km NE of Perth. The largest of the series to date was a magnitude 5.2 earthquake on 30 March, slightly larger than those on 5 and 23 March (see list).

Analysts at GA have counted more than 10,000 events in the swarm to April, and seismograms of many of them have a characteristic depth phase S_G indicative of a depth in the upper 3 to 4 km of the crust ie very shallow.

Burakin is just 20km north of Cadoux, struck by a magnitude Ms 6.2 earthquake on 2 June 1979, and 120 km north of Meckering, scene of the Ms6.8 earthquake on 14 October 1968.

Swarms are enigmatic; they start without warning, have no recognisable structure of energy release, unlike the well known foreshock, mainshock, aftershock sequence, and the energy level cannot be forecast at the beginning of the swarm.

EUS (reported by the USGS) The Eastern US was struck by a moderate magnitude ML 5.1 earthquake on 20 April 2002 at 10:50 UTC. The 5 km deep earthquake was about 205 km N of Albany New York. Some roads, bridges, chimneys and water mains damaged in Clinton and Essex Counties. Many buildings in the area had cracked walls and foundations, broken windows and small items knocked from shelves. Maximum intensity VII at Au Sable Forks. Felt from New Brunswick and Maine to Ohio and Michigan and from Ontario and Quebec to Maryland A bridge was damaged at Jay, there was road damage at Keeseville and a chimney was damaged at Lake Placid. This earthquake was about the same size as the Blue Mountain Lake earthquake on October 7, 1983.

This earthquake occurred in the northeastern part of New York State, an area that experiences moderate-sized but infrequent seismic activity. Although earthquakes occur on geologic faults, in the northeastern U.S. it is difficult to assign an earthquake to a particular fault because they rarely cause surface rupture.

The most recent nearby earthquake of note occurred 80 km to the southwest, a magnitude 5.1 event in 1983. The largest historic earthquake in the northeastern region of the U.S. and nearby parts of Canada had an estimated magnitude of 7. It occurred near Charlevoix, Quebec in 1663, 425 km to the northeast of this latest event.

Comment The similarity in the historical seismicity of SW WA and NE New York is striking although the written history of New York is longer than that of WA.

Comparison of the published computed hazard in each locality then is interesting. In the SW Seismic Zone, the computed 2500 yr pga varies from about 0.2 to 0.4

g within 100 km of Meckering. (The AS1170.4 475 yr $pga \times 1.9$)

In the EUS the computed pga varies from 0.2 to 0.4 g within 100 km of their historical largest event.

(http://neic.usgs.gov/neis/bulletin/neic_deam_z.html)

As expected from the thumbnail sketch of historical seismicity above, the computed hazard in these two intraplate regions is near enough identical which is some comfort to the hazard analysts.

Recent fault investigation in Vic/NSW

In April this year SRC's Amy Brown and Gary Gibson led a multi disciplinary team to investigate a Recent fault scarp cutting across the riverland in the Echuca/Deniliquin region of northern Victoria and southern NSW.

Geoscience Australia contributed the services of Dan Clark and Mark Leonard and invited Russ Van Dissen over from GNS New Zealand. The ASC's Kevin McCue was there and Mike Sandiford and Brad Smith from Monash University spent a day on site to collect soil samples for dating.

The idea was to investigate the nature of faulting and try to narrow down estimates of the time of occurrence, considered to be between 7000 and 13000 yrs ago.

Norm Brown proved a very skilled operator of his 12 ton excavator, digging a 30 m long battered 4m deep trench and two 6 m deep pits 20 m off either end. It was a surprisingly huge hole when finished. The property and owners would have been pleased with the pit closure, so neat and tidy.

Gary Gibson and Graham Granger from RMIT University had run several electromagnetic traverses across the fault a week or so previously in an attempt to locate the subsurface fault relative to the obvious surface scarp. Erosion was expected to have cut back the scarp an unknown distance.

Results will be published in a later Newsletter.

FORTHCOMING CONFERENCES

1 - 5 July 2002 16th Australian Geological Convention Expanding Horizons. Adelaide Convention Centre www.16thagc.gsa.org.au

9 - 12 July 2002 Western Pacific Geophysics Meeting, Wellington, New Zealand www.agu.org/meetings

•21 - 25 July 2002 7th US National Conference on Earthquake Engineering, Boston USA.

• 9 - 13 September 2002 The 12th European Conference on Earthquake Engineering, Barbican Centre London.

• 3 - 6 Oct 2002 HAZARDS 2002 SYMPOSIUM 9th INTERNATIONAL SYMPOSIUM ON NATURAL AND HUMAN-MADE HAZARDS Disaster Mitigation in The Perspective of the New Millennium, Antalya, Turkey

We would like to inform you that HAZARDS 2002 is about geological, meteorological, hydrological, marine, and human-made hazards. Contacts at:

<http://www.hazards2002.metu.edu.tr>

•16 - 19 September 2002 3rd International Conference on Continental Earthquakes. www.icce.ac.cn

13 - 15 February 2003 Pacific Conference on Earthquake Engineering. Christchurch New Zealand. (closing dates for abstracts - April 2002).

www.nzsee.co.nz/pcee

NEW BOOKS (& OLD) / REPORTS

Australian Seismological Report - 1998 Record 2002/1
AGSO Sales Centre ph: 02 6249 9519, fax: 02 6249 9982



Big hole, uh! *(Refer article on Page 5)*