AUSTRALIAN SOCIETY OF

EXPLORATION GEOPHYSICISTS

PREVIEW

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CONTENTS

INTRODUCTION

In this edition of Preview you will find, apart from the usual description of branch activities and membership news, an excellent comment on the proposed monograph series by Steve Mudge and an article on map projections by David Heath.

We hope that these encourage other members to contribute articles of interest and comments on the affairs affecting the Society.

Finally, congratulations to the hard working editor of this newsletter, Anita Heath, whose baby, Anne Elizabeth, was born on 17th June while she was collating this issue.

ASEG BRANCH NEWS

ACT

The ACT branch held their Annual General Meeting in April. The following people were nominated for the 1989 Executive and Committee:

President	Peter Napier
Vice-President	Vacant
Treasurer	Mike Sexton
Secretary	Kevin Wake-Dyster
Assist. Sec.	Tim Barton
Past President	Paul Williamson

Committee	Marita Bradshaw (GSA/PESA)
	Graham Heinson (Student Rep.)
	Vacant
	Vacant

After the meeting, the guest speaker was Dr. Phil O'Brien from the Bureau of Mineral Resources who gave a talk on " Clarence - Moreton Basin Structures, Tectonic and Petroleum Implications."

Kevin Wake-Dyster
Secretary

S.A.

The Annual General Meeting on 19th April was opened by the incoming 1989 President, John Hughes. In all the excitement Larry Enderbrock volunteered to join the committee and was accepted. Well done Larry!

The 1989 Committee is as follows;-

President	John Hughes (Santos)
Secretary	Mark Flynn (Santos)
Treasurer	Peter Dunne (S.A.D.M.E.)

Committee	Andy McGee (Santos)
	Jim Allendar
	Allan Appleton (S.A.D.M.E.)
	Neil Gibbins (Santos)
	Terry Crabb (S.A.D.M.E.)
	Alan Anderson (Santos)
	Stuart Greenhalgh (Flinders Univ.)
	Jim Frazer (Santos)
	Larry Enderbrock (Santos)

Members and guests were pleased to hear that the organisation of 1989 ASEG wine was underway. John Hughes reminded everyone that the branch had invested $1000 in the Cooper/Eromanga Conference which is being held on 25-27th June.

Official business was followed by a dinner and an extremely interesting address by Len Beadall who pioneered such outback roads as the Gunbarrel Highway and was responsible for the location of the early atom bomb test sites and the Woomera Rocket Range. Len enjoyed speaking so much that his 40 minute talk went 10 minutes short of 2 hours.

Mark Flynn
Secretary

VIC

The last meeting of the Victorian branch was in May with guest speaker Peter Arditto from BHP Petroleum giving an excellent talk on "A Seismic Stratigraphic Overview of the Sydney Basin".

At this month's meeting there will be a discussion on the future direction of the branch together with an organisational meeting for the conference.

Peter Grant
President

W.A.

On the Western Australian branch committee some members will be absent at times during the year due to work commitments and so they would like to have several more members. Volunteers should call the Secretary on 482 2444.

After the first branch committee meeting, the following loose social-event calendar was decided on;-

Wine tasting	July
Wine Cruise	Spring or late Summer
Golf day	October or November
Minerals vs Petroleum Cricket Match on the beach	(hopefully some lady members will be invited to play)
Students Night	October

A technical meeting was held on 7th June at the Raffles Hotel with 2 guest speakers. Mr Roger Clifton from Curtin University spoke on "Analytical Procedures in Radiometrics Data Processing" and Mr Mark Stanley of Horizon Seismic Australia Pty. Ltd. spoke on "Processing of Irregular Water Depth Data."

It has come to the attention of the branch committee that a number of W.A. members are presenting papers at the Melbourne conference in September. At the next technical meeting on the 2nd August at the Raffles Hotel, these authors are invited to present Abstracts of their papers accompanied by a few representative slides in a short practise run. So make sure you are there along with your slides as we know who you are!

Euan Clarke
President

PRESIDENT'S ADDRESS

by Greg Street, ASEG Federal President

The federal executive has been resident in Perth for nearly two years and we are now becoming fully conversant with all the facets of the organisation. Our first year under Eve Howell's presidency was mostly learning the ropes. In the next two years we hope to achieve a little more for the Society.

The fundamental role that the ASEG plays is in communication of new ideas. Inherent to this role are our publications and conferences.

Conference plans are now well advanced for Melbourne and you should have all received a publicity brochure in the past few weeks. This could well be the last conference to be held in a hotel venue. I believe the membership in the past has favoured hotel venues but it appears we may be outgrowing the space available if we want a conference and exhibition together. The cost of moving to convention centres is not small and thus future conferences are receiving a lot of our attention at present.

Don Emerson continues as our Honorary Editor for yet another year and Terry Crabb remains as chairman of publications. Terry is hoping to improve the schedule of publications with the co-operation of the printers. Issue 19/4 should be out in the next few weeks and we hope closely followed by 20/1. Issue 20/2-3 will be the conference issue and this is already with the printers.

The final issue for 1989 will be the engineering geophysics volume which has proved quite a headache for the editor.

Preview is run separately and edited by Anita Heath. We all urge you to make use of it to air your views on issues that concern Exploration Geophysics. We need pictures, cartoons and short letters of technical interest. Please also assist in keeping track of missing members which will be published from time to time in Preview.

At the last federal executive meeting Mike Middleton and Eve Howell were appointed as guest editors for our first monograph "Australian Oil and Gas Case Histories". We hope to publish this volume sometime in late 1990.

Today I finally received formal notification from the Department of Business and Consumer Affairs in NSW that they have accepted the alterations which we proposed to our articles of association.

This has now cleared the way for the establishment of the ASEG Research Foundation. Bob Smith of CRA will be the first chairman and a separate committee will run the foundation. The first awards to students will hopefully be made in 1990.

ABSTRACT FROM STUDENTS' NIGHT

The Victorian branch held their Annual Students' Night on 14th March. Scholarships of $250 were awarded to Peter Strikland from Melbourne University and Greg Beardsmore from Monash University for outstanding work during their honours year. The Student prize of $300 was awarded to Paul McDonald for his dissertation submitted at La Trobe University in partial fulfilment of the requirements for a B.Sc.(Hons.) Degree 1988.

ABSTRACT: THE GEOLOGY AND GEOPHYSICS OF THE MURMUNGEE BASIN GRANODIORITE AND SURROUNDING GRANITES BEECHWORTH, N.E. VICTORIA.

by P.A. McDonald.

A detailed geophysical and geochemical study has been carried out on the Murmungee Basin Granodiorite (8km SW of Beechworth) and surrounding granites to investigate the cause of the magnetic anomalies.

The Murmungee Basin Granodiorite is thought to contain four variants, namely: a. felsic, b. homogenous, c. hydrothermally altered and d. a variant that contains mafic inclusions. The Murmungee Basin Granodiorite has low silica content (about 66 weight percent) and high ferromagnesian minerals (about 6 weight percent) namely: hornblende, biotite and magnetite, and a high level of strontium (about 457 ppm.).

From geochemical and isotopic evidence, it is proposed that the Murmungee Basin Granodiorite may have been the mafic parent granodiorite to other 'granites' in the area. The age of the Murmungee Basin Granodiorite (376 +/- 4 Ma) and a strontium 87 to strontium 86 initial ratio of 0.70415 +/- 0.00007 is similar to the surrounding granitoids. The Everton Granitoids Big Valley Granodiorite, Golden Ball Adamellite and Beechworth Suite may therefore represent more fractionated versions of the Murmungee Basin Granodiorite.

Natural Remnant Magnetism (N.R.M.) studies on the Murmungee Basin Granodiorite revealed that this body was emplaced during a period of normal magnetisation. The palaeo latitude of Victoria in the lower part of the Upper Devonian was calculated to be -57 degrees 45 minutes (s = 10 degrees) and a corresponding palaeopole latitude of 79 degrees 45 minutes north.

Iso - Thermal Remnant Magnetism (I.R.M.) experiments conducted on the Murmungee Basin Granodiorite and surrounding granitoids revealed that the Murmungee Basin Granodiorite's main magnetic mineral, responsible for the anomaly, is titanomagnetite, whereas, the surrounding granitoids contained little to no magnetic minerals.

Smaller but distinct magnetic anomalies outside the main granodiorite intrusion were also investigated. Magnetic and Gravity studies on these showed that two were probably caused by 'pipe - like' intrusions.

INVITATION TO MELBOURNE'89

You are cordially invited to Melbourne for the 7th ASEG Conference and Exhibition, 24-29 September. Considerable sponsorship for the occasion has come from the local geophysical industry and we are hoping for an excellent conference.

Melbourne in September? Normally you might think we are kidding; however we are confident that we can provide the incentive with a technical programme to arouse your interest including;

- Key note & Joint Session Papers
- 3D Seismic Methods
- Unconventional Methods for Hydrocarbon Exploration
- Seismic Processing
- Seismic Interpretation
- Seismic - Oil Field Studies
- Electromagnetic Methods
- Mining & Engineering Studies
- Geophysics in Geological Mapping
- Regional & Crustal Geophysics

A social calendar to warm your souls includes city sightseeing, a trip to Phillip Island, dinner at the Colonial Tram Car restaurant, a visit to the Royal Melbourne Agricultural Show, a train ride through the Blue Dandenongs, a golf Day, a trip to Sovereign Hill and a chance to buy tickets for the Victorian Football Grand Final.

These programmes plus the usual ASEG Conference highlights like the Exhibition, the most comprehensive display of new ideas and technology in Australasian geophysical exploration; the Icebreaker Cocktail Party, where you will hear gossip worth the price of the aeroplane ticket; and the Conference Dinner which will be at the National Gallery, assure all delegates of an extremely rewarding time.

The whole city of Melbourne will be bubbling with excitement during this week, in anticipation of the VFL Grand Final the following Saturday.

Come along and see Melbourne at its best, and absorb some the most advanced technical information that geophysicists have to offer anywhere. See you there.

CONVENORS
Tom Eadie, Aberfoyle Resources Limited
Hugh Rutter, Geophysical Exploration Cons.
Peter Grant, BHP Petroleum

SECRETARIAT
Bloomsbury Conference Services Pty.Ltd.
232 Bridge Road
Richmond VIC 3121
Phone: (03) 429 4322
Fax: (03) 427 0715

Note to Delegates from W.A.

Ansett flights to Melbourne may be already fully booked for the conference week. If you have any problems getting on a flight, please contact the Secretariat, Bloomsbury Conference Services Pty. Ltd. on (03) 429 4322.

1989 ASEG WINE OFFER

The organisation of this year's ASEG Wine Offer is well under way. The South Australian Branch will soon be distributing order forms and information on the wines selected, through State newsletters and the next edition of "PREVIEW".

Regards
Nick Dunstan

I trust that the reason for the wine offer not yet being out means that the South Australian branch are holding numerous tastings to decide upon the best vintage to carry the prestigious ASEG label. Last years' wines were very good value for money and were enjoyed by many members including the Federal Executive who drank me out of my stocks.

A Bon Vivant.

ASEG MONOGRAPH SERIES

Letter from Stephen Mudge concerning the proposed monograph series.

I was delighted to read in the April issue of Preview that the Federal Executive are considering publication of a series of geophysical monographs. I would like to make the following suggestions regarding suitable topics. "The History of Geophysics in Australia" might best be tackled as either a Phd. or M.A. study in Australian history. I think a study of the science and its influence on the nation's development would be appropriate, hence my feelings that this topic is worthy of serious academic study. Might I further suggest that the research at an Australian History school in one of the universities.

As a point of information, the Hobart museum has an 1840 painting depicting Australia's first Geophysical Observatory (the Ross-Bank Geophysical Observatory - Hobart). Observations were published regularly in the Royal Society Proceedings etc. Just last week I found an 1869 magnetic map (F,Z,D and I) of Victoria in the BMR library. The information seems to be available and it suggests a need for high calibre study.

With regard to the more technical monograph series, I feel that the sorts of topics identified are fine in principle. However, I think a more suitable airborne geophysical topic would be "Acquisition and Processing of Airborne Geophysical Data." I personally believe that the geological interpretation of most airborne data, particularly magnetics, often amounts to nothing more than adventurous arm waving on the behalf of the interpreter - simply because geological control is often either non existent or poorly defined. Descriptions of geological interpretations are therefore probably best left to forum situations. On the other hand, a monograph on the MATHEMATICAL techniques of enhancement and analysis of airborne data would be quite appropriate.

A monograph on Bore-hole Geophysics is probably worth considering. As a final idea, what about petro-physics?

I hope that these ideas provoke further thought. I must admit that I have not really thought them all through at this stage.

STUDENT/ACADEMIC LIAISON COMMITTEE ARTICLE

by Brian Evans, Curtin University,
Tel: (09) 351 7092

COMMITTEE FORMATION

This Committee was formed on and had its first and only meeting during the Adelaide Conference. It comprised of representatives of Geophysics at Universities in Melbourne, Adelaide, Perth and Brisbane. Do you note a few missing capital cities there? The mandate was not established as to what exactly the Committee was set up for, but apparently it was supposed to mirror equivalent SEG Committees just like the Conference was intended to mirror the high expectations of SEG Conferences. I'll leave that point there. Suffice it to say, no mandate was set so nothing (to my knowledge) was done during its tenure. Lets start afresh with determination this time.

MANDATE

The Committee's mandate is to promote the science of geophysics to students through greater communication and to serve as a clearing house for an exchange of information between academia, industry and the ASEG. This will narrow the gap between industry and academia, and stimulate ideas and solutions to promote the geophysical profession.

REPRESENTATION

Having accepted the position of Committee Chairman, I have decided to attempt to obtain representation from each State Capital city that teaches Geophysics. That includes Hobart and Sydney. Does this seem too hard to do? Well, no, not when you have the success of the profession at heart. So let's start with the concept that all Institutions that teach and research Geophysics are in unison and want to produce the country's best graduates for the profession. Allow me to float a few ideas for your perusal. They will be separated into the easy and the hard baskets as follows:

EASY

1) All representatives of the Committee should be fully aware of established and new geophysical teaching developments in their State. One academic representative is required from each state plus an industry representative (A Committee of 12 with only 5 active members is preferred to a Committee of 4 with no active members.)

2) All representatives should be fully aware of undergraduate and postgraduate populations within their State.

3) All representatives should be fully conversant with what the industry wants of their graduates.

4) Committee members should ensure maximum exposure to the industry for all third year students. That is by encouraging local branches to run Students nights and then encourage students to join the ASEG, attend technical meetings and meet with the industry. The Committee should try to bring industry representatives into the classroom whenever feasible. Student projects should be industry based.

5) Each Committee member should make a conscious decision to ensure all final year students make it to every ASEG Conference. This may be financially supported by either donations from the industry (100% tax deductable) or paid from the fruits of research projects.

6) The Committee should lobby the Executive Committee where necessary, to support financially or otherwise, the undergraduate and postgraduate growth in student population.

HARD

1) Committee members should represent all Institutions within their state and put forward a balanced view representing their state.

2) While it is difficult to meet together other than at Conferences, all Committee members should communicate their problems, and share their thoughts for the future with all other members. We are all only a telephone call away.

3) The Committee should determine the fundamental standard required of a graduate.

4) The Committee may support or reject rationalization of the teaching programs offered by different institutions within the same city, and act as a united voice where government doctrine changes are perceived as harmful to the profession's future.

STARTING POINTS

Some of these ideas have a reason for their existence. For example, I have found that the standard of geophysical teaching varies widely within this state alone, and that bodies (such as Agriculture Departments etc.) are lecturing geophysical exploration of one form or another to their employees, without the knowledge and assistance from the 'professionals' who do it on a daily basis. Whether this is an indictment of our own teaching or maybe the blind leading the blind, I don't know. However, if we knew precisely where geophysics was being lectured and by whom, it is a starting point to finding out directions into which quality geophysical teaching may expand. With the present reducing numbers in undergraduate population, it is important to locate sources of future growth.

The undergraduate supply ebbs and flows with booms and busts just like the industry. The problem today is that the Dawkins criteria only allows boom times, and his criteria appears to search incessantly to cut out courses that have low undergraduate intake. If it is true that Dawkins will in future shut-down any courses with less than 20 in the first year intake, how will advanced geophysics teaching survive during times of low exploration level and hence student intake?

Another point worthy of raising here is a question of whether geologists are given an adequate amount of geophysical course work during their undergraduate years. Limit the amount or scope of geophysics provided to them during their undergraduate training and next years geological exploration manager will not be looking to geophysics to resolve his exploration problems.

Is it time the geophysics lecturer got out of the Department of Geology and formed a one man Department of Geophysics just to stress his separate identify? Isn't it time Geophysics lecturing staff combined their efforts in teaching and research? What is the future for Geophysics in Sydney? Is it really true that the various University staff in Melbourne will actually share lecturing duties? How does the Dawkins criteria affect our professions future? Shouldn't we push for more geophysics exposure in the high school classroom? Should the ASEG be promoting the professional to High School leavers and at careers evenings? Should some Universities be recognised more for their mathematical emphasis in geophysics while others be accepted for their geological emphasis?

THE WAY AHEAD

Clearly the ASEG Student/Academic Liaison Committee can either address the issues of the future of education in Australia or sit back and ignore it all. I prefer the former option since some have suggested we should not be backward in coming forward. Lets have your comments. Write or call me with your opinion, your perception of the future of geophysical teaching in Australia. Without your interest, we may as well terminate the Committee's existence. If you would like to represent industry/academia on the Committee, call me now - tomorrow may be too late.

MAPPING - UTM, AGM, Projections....What Does It All Mean?

by David Heath
Cultus Petroleum

My interest in map projections started when one of the geophysicists in the office asked if I had a programme on my portable PC to convert latitudes and longitudes to grid values. I did not, but replied I would code one up if I could get hold of the equations for the conversion. The search for the equations was more difficult than I expected, but it did spark an interest in map projections and the conversion between geographicals and grid values. It is an operation commonly undertaken by geologists and geophysicists who regularly use grid values but with little understanding of their derivation or the types of projections and ellipsoids used in their computations.

In this article I will describe the commonly used types of Mercator projections and clarify the difference between the Australian Map Grid (AMG), used within Australia and the Universal Transverse Mercator projection of the World Geodetic System 1972 (WGS72) used for Australian offshore islands and external territories outside of the AMG.

A map projection is a systematic representation of all or part of the surface of a round body, like the Earth, on a plane. The projection can be onto a cylinder or a cone or a plane. For example if a cylinder is wrapped around the Earth as shown in Figure 1, so that its surfaces touch the equator throughout its circumference, the meridians of longitude can be projected onto it as equidistant straight lines perpendicular to the equator and the parallels of latitude parallel to it at mathematically spaced intervals. When the cylinder is cut along a meridian line and unrolled it will show parallel straight meridians with evenly spaced but straight parallels. The Mercator projection is the best known example of this with the spacing of the parallels at a given latitude being proportional to the secant of the latitude. This projection developed in 1511 by Etzlaub was made famous by Mercator who independently developed and presented it on a large world map in 1569.

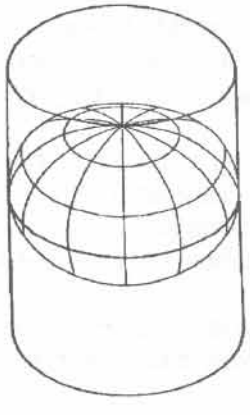

Figure 1: REGULAR MECATOR (From: Snyder 1987)

The Mercator projection has little error near the Equator, but area becomes more distorted with increasing latitude as seen in Figure 2, where Greenland is larger than South America. The projection is "conformal", i.e. the relative angles about every point on the map are correct. Although the large areas are distorted, small features are essentially shaped correctly, so the bays around Greenland in Figure 2 are the correct shape and relative size to the rest of the island.

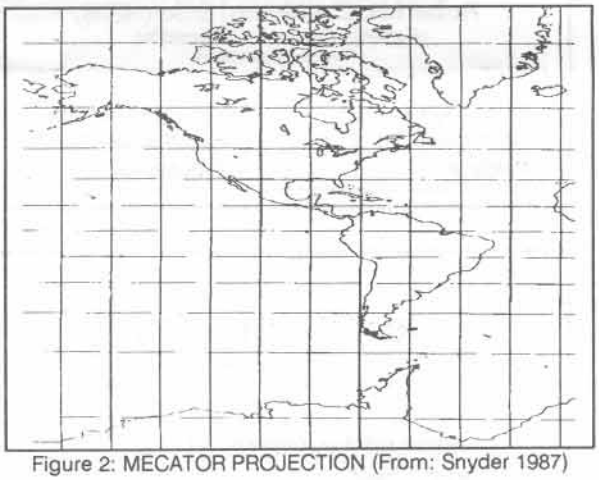

Figure 2: MECATOR PROJECTION (From: Snyder 1987)

As the Mercator projection has little error near the Equator, a Transverse Mercator projection has been found useful to retain accuracy with increasing latitude. A transverse Mercator projection is similar to a Mercator, but is onto a cylinder which has been rotated by 90 degrees as shown in Figure 3. The circumference of the cylinder will touch a line of longitude about the Earth instead of the Equator as for the Mercator.

The longitude touched by the cylinder is known as the "central meridian" and is true to scale no matter how far north or south of the Equator the map extends. Regions near the central meridian have low distortion in the east - west direction, and like the Mercator, the Transverse Mercator is conformal.

The projection was invented by Lambert in the 18th century, but was rarely used until Gauss analysed it in 1822 and L. Kruger published it in studies in 1912 and 1919. It is for this reason sometimes called the Gauss Conformal or the Gauss-Kruger projection in Europe.

The Universal Transverse Mercator (UTM) is the projection most commonly used by geophysicists.

It is a Transverse Mercator projection with all measurements in metres using standardised parameters for its computation, hence the name Universal. It is applied between latitudes 84 degrees north to 80 degrees south.

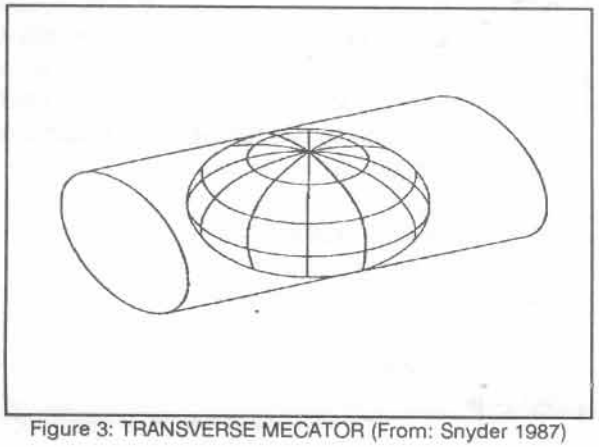

Figure 3: TRANSVERSE MECATOR (From: Snyder 1987)

For the computation of a UTM the Earth is divided into 60 zones each 6 degrees wide in longitude, with the central meridian in the centre of each zone. The numbering of the zones is from zone 0 whose central meridian is the longitude 180 degrees. The zone numbering increases every 6 degrees longitude to the east.

As mentioned earlier all measurements for a UTM grid is in metres. The values are referenced to the intersection of the Equator and the central meridian, which is given the false co-ordinates of 500,000m east and 10,000,000m north to avoid any negative grid values to the south or west of the intersection.

Although the Transverse Mercator projection is accurate in a north south direction it does have inaccuracies in an east - west direction which increase with increasing offset from the central meridian. The Universal Transverse Mercator tries to compensate for this error in two ways:

1. By using 6 degree zones the offset from the central meridian is minimised to 3 degrees before a new zone is entered and a new central meridian is established. This reduces the distortion at the edge of the zones, but is usually hell for the geophysicist who is working in an area bounding two zones because the co-ordinates keep changing by over 500,000m as you cross the zone boundary. The usual way out is to enlarge the zone so the area falls within only one, but recognise there may be some minor distortion of the map. The second less frequently used solution is to establish a new central meridian in the centre of the area, which reduces the distortion, but also makes the map a Transverse Mercator rather than a Universal Transverse Mercator projection because the Universal parameters have not been conformed with.

Name	Date	Equatorial Radius, a meters	Polar Radius b, meters	Flattening f	Use
GRS 80[2]	1980	6,378,137*	6,356,752.3	1/298.257	Newly adopted
WGS 72[3]	1972	6,378,135*	6,356,750.5	1/298.26	NASA; Dept. of Defense; oil companies
Australian	1965	6,378,160*	6,356,774.7	1/298.25*	Australia
Krasovsky	1940	6,378,245*	6,356,863.0	1/298.3*	Soviet Union
Internat'l	1924	6,378,388*	6,356,911.9	1/297*	Remainder of the world*
Hayford	1909				
Clarke[4]	1880	6,378,249.1	6,356,514.9	1/293.46**	Most of Africa; France
Clarke	1866	6,378,206.4*	6,356,583.8*	1/294.98	North America; Philippines
Airy[4]	1830	6,377,563.4	6,356,256.9	1/299.32**	Great Britain
Bessel	1841	6,377,397.2	6,356,079.0	1/299.15**	Central Europe; Chile; Indonesia
Everest[4]	1830	6,377,276.3	6,356,075.4	1/300.80**	India; Burma; Pakistan; Afghan.; Thailand; etc.

Table 1: Some official ellipsoids in use throughout the word

2. The second method of reducing the distortion at the edges is to use a scaling factor to average the error and reduce the mean scale over the whole zone. The Universal Transverse Mercator scaling factor

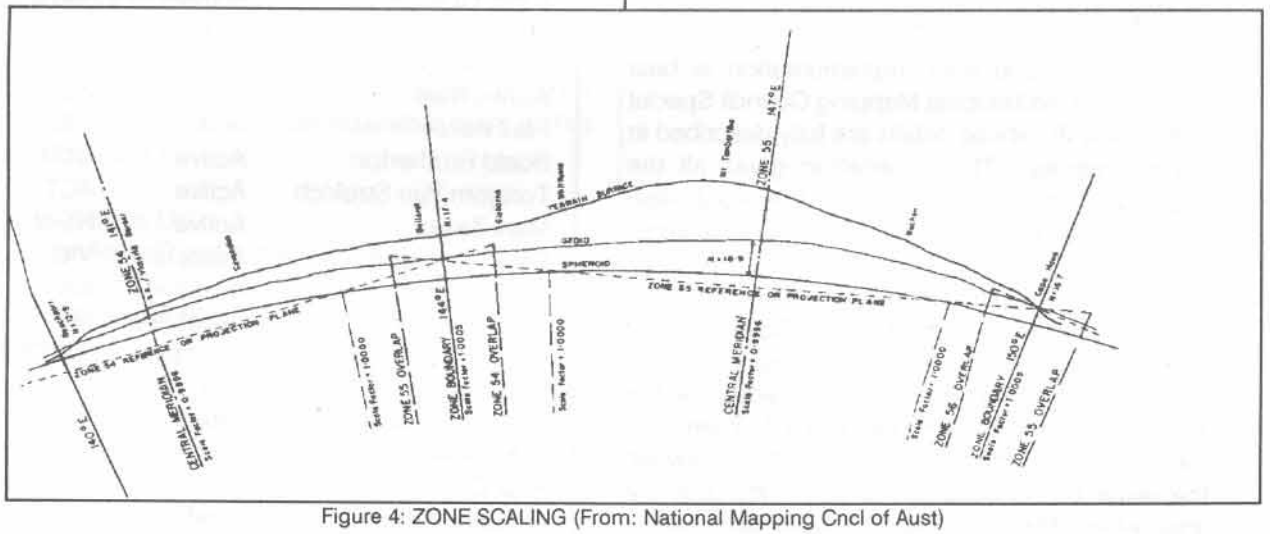

Figure 4: ZONE SCALING (From: National Mapping Cncl of Aust)

is 0.9996 at the central meridian and 1.0005 at the zone edge. This is well illustrated in Figure 4.

The types of projection have been covered, but the other problem cartographers face is the true shape of the Earth, the object from which the projection is made. No consensus can be made on this usually because of the changes in the gravity field causing changes to the curvature of the Earth surface (geoid), and the varying accuracy in the geodetic measurements to establishing a mean ellipsoid shape. As a result there are numerous ellipsoids in use. Some of the official ones are shown below in Table 1.

The flattening "f' in Table 1 is defined as:

1 - (Equatorial radius/polar radius)

Values denoted with a * are exact values. Those with a ** are rounded off after conversion from feet to metres.

As shown in Table 1 Australia uses a spheroid derived in 1965 which is known as the Australian National Spheroid. Any maps produced using the Australian National Spheroid are tied to the Australian Geodetic Datum which is now accepted as a standard within Australia.

Prior to 1966 Transverse Mercator projections using the imperial system of yards were used within Australia. With the introduction of the Australian Grid Datum, the National Mapping Council changed to the Universal Transverse Mercator (UTM) projection, using metres, to establish a rectangular grid known as the Australian Mapping Grid (AMG). The AMG is now accepted as the standard grid within Australia. It is to be calculated using the formulae for a UTM published by J.C.B. Redfearn in 1948.

The formulae and their implementation is best described in the National Mapping Council Special Publication 10, whose details are fully described in the references. The publication gives all the equations and parameters for the Australian Geodetic Datum with worked examples against which computer programmes may be checked. The National Mapping Council in 1980 adopted the World Geodetic System 1972 (WGS72) as the geodetic datum for Australian territories outside of the AMG (e.g. Antarctica). The values for the WGS72 spheroid is shown in Table 1. There is a resultant vector difference of 195 metres between the respective centres of the spheroids over the area where the Australian National Spheroid is used. This will result in differences of generally 200m between the two systems.

Two type of projections have been adopted by the National Mapping Council for use with the WGS72. North of latitude 80 degrees south a rectangular grid is computed using a UTM projection (as defined by the UTM standard mentioned above) using Redfearn's formulae. A polar stereographic projection is used to produce a stereographic grid south of latitude 79.5 degrees south.

I hope this has clarified the little known area of projections and spheroids to the readers. To close I would like to thank the company librarian Mrs. Kerry Smith and contract draftsman Mr. David Maxwell in helping me find the information on the subject.

References:

National Mapping Council of Australia, 1986; 'The Australian Geodetic Datum - Technical Manual', Special Publication 10, The Australian National Mapping Council of Australia - Canberra.

Snyder, John P., 1987, 'Map projections - a working manual', U.S. Geological Survey Professional Paper 1395, United States Government Printing Office - Washington.

MEMBERSHIP

New Members:

We welcome new members who have joined the Society in the past months:

Member	Category	State/Country
Tung Yu Maung	Active	ACT
Lesley Harvey	Student	SA
Andrew Holmes	Student	NSW
James Reid	Student	NSW
Paul Baker	Active	VIC
Roald Brotherton	Active	QLD
Torbjorn Van Strokich	Active	ACT
Mark Taylor	Active	NSW
David Ormerod	Associate	VIC
Mark Browne	Associate	SA
Jonathon Root	Associate	NT
Tatang Padmawidjaja	Overseas	INDONESIA
Neil Watson	Student	NSW
Anthony Howell	Student	VIC
Dylan Mair	Student	VIC
Paul Gow	Student	VIC
Gregory Parker	Student	VIC

We have lost track of a few members, does anyone know the whereabouts of the following (their last known addresses are listed):

Dr Sunhee Lee
12 Kiama Court,
Clayton North,
Victoria.

Mr Philip Irwin
ACIRL Ltd.
P.O. Box 474,
Dee Why,
N.S.W.

Membership Moves:

Recently Greg Street left the Geological Survey to join Mackie Martin & Associates.

Graham Jenke has left Kevron and is now with Western Mining Corporation, PO Box 448, KALGOORLIE WA 6430.

Changes to State Branches:

Mr Ed Collins formerly a Student member with the WA Branch has become an Associate member with the Victorian Branch. His new address is:

c/- BHP Petroleum
GPO Box 1911R
MELBOURNE VIC 3001

Mr Trevor Mitchell formerly with the NSW branch has transferred to the Queensland branch. His new address is:

c/- School of Science
Dept of Applied Physics
Capricornia Institute
Yaamba Rd
ROCKHAMPTON QLD 4702

Mr Pradeep Jeganathan formerly with the NSW branch has transferred to the Victorian branch. His new address is:

6 Percy Street
Balwyn VIC 3101

Lim Hock Beng formerly with the Victorian branch has transferred to the South Australian branch. His new address is:

c/- Santos Ltd
Petroleum Development Dpt
101 Grenfell St
Adelaide SA 5000