

"Fore-Sight"



"Fore-Sight"-Quarterly Newsletter of the Association of Surveyors of P.N.G.

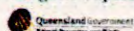
ASPNG WELL REPRESENTED AT AUSSIE SURVEYORS MEETING



Brisbane, September 25-28 : The 42nd Australian Surveyors Congress was held at the Convention and Exhibition centre on Brisbane's popular south side. **ASPNG President Steve Low**, who is a member of the PNG Surveyors Board, was fortunate to attend the meeting of Aussie surveyors. Apart from providing insight on how our southern



Congress Papers



counterparts are doing, the visit provided an opportunity to learn as well as give the PNG point of view.

Funding for the trip was made available thanks to the **Leica Trust Fund** that

has provided similar financing gestures in the past.

The theme of the Congress was : **"2001 - A Spatial Odyssey"** being based on an Odyssey into the New Millennium for the spatial information profession and focused on encouraging innovation and change in the Spatial Sciences professions in an interesting and dynamic environment in 2001.

The new Congress format of three and a half days featured technical presentations for two and a half days and a one day practical workshop with technical tours included.

The technical sessions were designed to reflect the way surveyors interact with the community in the following sectors :-

Spatial Information & Transport

Spatial Information & The Environment

Spatial Information & The Law

Spatial Information & Human Culture

Spatial Information & the Financial World

Spatial Information & Recreation

As well as the technical side of the Congress, a wide variety of social and sporting activities was featured including a fishing trip on the waters off South-East Queensland, a pub crawl around the Brisbane CBD and Southbank area, Congress Dinner, and a round of golf at the Brisbane Golf Club.

Technical tours included visits to the Port of Brisbane and hydrographic survey vessel "Jim Peel" with a practical demonstration of hydrographic surveying on the Brisbane River ; the Dept of Natural Resources & Mines focusing on the innovative products and services offered ; the world class \$350 million S.E. Queensland Busway - Thiess project inspecting the 16.5 km route containing 12% elevated works (2000m) and 10% (1650m) of tunnels.

Workshops were dedicated to *Managing Risk, Understanding Professional Indemnity Insurance and How to deal with a dispute ; and 3D Virtual Cities and 3d Geospatial Information Systems for Engineers and technical Professionals.*

Technical papers were distributed on CD-ROM.

The 42nd Institution of Surveyors Australia Surveyors Congress was supported by the *ISA (Queensland Division), the Institute of Engineering & Mining Surveyors Aust., the Australian Institute of Mining Surveyors, the Mapping Sciences Institute Australia, Spatial Queensland and Trimble.*

ASPNG Web Site Proposed

Council agreed at CM #235 on July 28th, that the ASPNG would benefit from the establishment of a web site with a dedicated domain name. The development of the web site will be undertaken by APS / Aerometrex at very reasonable cost to the Association. Maintenance of the web-site can be offset by selling advertising space.

The availability date of this facility should be early to mid 2002.

(see Editorial Comment, p.8)

Volume 2, Issue 4

December 2001



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From the Office of the Surveyor-General

Courtesy of Anthony Luben, PNG Surveyor-General

OSG Advisor Appointed :

Mr. Bevis Kenneth, a management adviser, commenced with the OSG on the 20th August 2001. He is engaged for an initial period of seven months with an option to renew / extend where necessary. He is employed by the PNG Advisory Support facility project which comes under AusAid.

Counterpart includes the Surveyor General, Assistant Surveyor General, all Supervising surveyors and the Supervising Cartographer at Waigani. He is accompanied by his wife Margaret and they are settling in well in Port Moresby. I have accompanied him to visit all Regional Offices in the country. We went to Lae, Goroka / Mt. Hagen and Rabaul / Kokopo before the country's 26th Independence anniversary. We in the OSG wish him well in our country.

PNG Surveyors Board (2001 - 2002) :

Composition of this year's Surveyors Board is as follows :-

Chairman	Anthony Luben, Surveyor General
Deputy Chairman	Michael Siribis, Department of Works
Member	Steve Low, Private Consultant
Member	Choulai Polume, Private Consultant
Member	Samual Kodawara, Asst Surveyor General
Member	Luther Sipison, Supervising Surveyor (Nth'n)
Member	Vaki Vailala, Supervising Surveyor (Southern)

This year (2001) the Board conducted four meetings. Congratulations to **Cadet Surveyor Petrus Murake** who passed the Board's Examinations and was admitted and registered during the Board's 122nd meeting on August 10th this year.

OSG Regional Offices :

There are four OSG Regional Offices throughout the country. For Southern Region its based in Waigani (HQ). The Northern or Momase Office is in Lae. Highlands Region is shared between Goroka and Mt. Hagen while the Islands Regional Office is at Kokopo. Kokopo is yet to be located at a reasonable office. Each office has a total of six officers.

Recent update for the Highlands Regional Office - Circular No. 20/2001 dated 26th November 2001 from the Office of the Secretary of the Department of lands & Physical Planning confirming that the Highlands Regional Office will be located in Mt. Hagen City. All regional staff currently based in Goroka are commencing preparations to move up to Mt. Hagen.

Headquarters Drawing Office :

The Office is headed by a Supervising Cartographer. With him there are six cartographers. They basically deal with Survey Technical Descriptions for Declarations, Allocations of Cadatral Legal Descriptions, Updating Charting of Noting Maps, checking and verifying Lands files and titles for correct legal descriptions, confirming DCDB completed Town Sheets, and Recording & storing of Registered Plans. The are a busy lot at all times.

Training :

The Office of the Surveyor General is targeting training as its priority in the next couple of years. That is training for all staff including Management and upgrading to modern technological techniques that are now available to the Surveying and Cartography professions.

A proposed programme will be prepared and hopefully will commence implementation at the beginning of next year - 2002.

OSG Welcomes New Officers :

Surveyor General congratulates the new officers joining his team.

At Headquarters, **Wari Leka** is the new Secretary for the Surveyor general while **Francis Salaiu** is the new Counter Clerk. In the HQ Drawing Office, the new faces are Cartographers **Stella Pala** and **Nobert Vara**.

In Southern Regional Office is **Merlyn Alarcros** a cartographer.

In Northern Regional Office is **Luther Sipison** (2002 Congress Manager) who replaces Greg Kassen as Supervising Surveyor. **Agat Yannis** is the new cartographer.

In the Highlands Region, **Linda Kuri** is the new Secretary for the Supervising Surveyor.

In the Islands Region, **Dorcas Palanga** is the new Secretary for the Supervising Surveyor while **Emil B. Kaumas** has filled the position of Supervising Surveyor.

"Fore-Sight" thanks *Tony Luben* for taking time to provide this information which will be useful to all surveyors.

PNG COMPANIES VIE FOR WORLD BANK GIS CONTRACT

Under the PNG Institutional Strengthening Project, the PNG Department of Mining is seeking to establish a user specific GIS system for archival, current and future mineral exploration data and associated geological mapping. The project calls for technical assistance in the management of data capture and the development of a digital geological information systems dataset with multi security levels and later Internet access. Exploration and mining tenement land management and the recording of land owner participation is an integral part of the project.

After the technical evaluation phase, three PNG companies were short-listed with their associated overseas international hi-tech profile consortium partners :-

- **APS / Aerometrex with Terra Search Pty Limited**
- **Datec with Exa-Min Technologies Pty Limited**
- **MapMakers with GAF* mbH**
- * Gesellschaft für Angewandte Fernerkundung
(company for remote sensing)

It is interesting to note that while two of the PNG companies have strong surveying / mapping backgrounds with associated GIS experience that the other company is mainly a computer retailer with associated IT services.

2002 (36th) PNG Survey Congress Scheduled for LAE

Theme : "Surveyors Need for Progress in the 21st Century"



Thanks to the efforts of 2002 Congress Manager Luther Sipison and his organisational team, preparations are well underway for the ASPNG Survey Congress that will be held in Lae next July.

The theme : "Surveyors Need for Progress in the 21st Century" is a natural and fitting progression from our last congress theme "From Mastamak to Spatial Data Professional".

Like it or not, the developments in new technology as applied to the surveying profession are here to stay. The ways in which we conduct our surveys are changing, with total stations and digital (spatial) data output becoming ever more prevalent. Our end product now starts to take on a different form, and surveyors need to progress, and educate the public as to what its all about, as well as tailor the various end products to suit specific client needs.

Proposed Dates : 11th to 13th July, 2002

Venue : Lae International Hotel

For further Information, contact :

Mr. Luther Sipison, Congress Manager,
P.O. Box 4414, LAE
Phone (675) 472 1440 or Fax 472 1440
E-Mail : sluther@global.net.pg

Or

Mr. Terrance Kuniaka, No. 1 Surveys,
P.O. Box 3357, LAE
Phone : (675) 472 6732 or Fax 472 3438

Call for Technical Papers :

Participants who wish to present papers are welcome to do so. The papers should reflect the theme of the Congress and be relevant to the Surveying disciplines in Cadastral, GIS / LIS, Remote Sensing, Hydrography, Engineering, Global Positioning Systems (GPS), Geodesy and Economic & Legal Aspects of Land in PNG.

Authors are requested to present an abstract of the paper briefly describing the aspect to be discussed, what the paper intends to prove or demonstrate, the scientific method used (if applicable) and conclusions reached. The abstract should have a maximum of 200 words and be written in English.

A brief summary of presentations should be submitted by March 14th, 2002.

Other Presentations at the 36th Survey Congress :

Participants who wish to contribute oral and poster presentations, workshop and trade exhibitions at this Congress are also welcome. Please include the following information :

1. Presenters' names, address, phone and fax numbers, and email address
2. Title of presentation
3. Type of presentation (paper, oral, poster, workshop, trade exhibition)
4. Abstract (maximum 200 words)

Both Technical Papers and other presentations should be submitted by 14th March 2002, to :

The Editor, 36th Survey Congress,
Fax No. (675) 473 4977
Attention : Mr. Jones Taugaloidi

Or sent electronically to :
jtaugaloidi@survey.unitech.ac.pg

Lae, while a city of industry, is also a city of learning and education. The University of Technology including the Department of Surveying and Land Studies is situated there. Survey Congresses in Lae provide a special opportunity to meet not only with fellow professionals, but with the students of UniTech who form an important part of our professional future.

See you there at the 36th PNG Survey Congress in July 2002 !!!

NEWS FROM THE GIS USER'S GROUP

The April meeting generated support for a submission to government by way of an awareness campaign indicating the extent and importance of GIS as a planning and management tool in this country. The document entitled "*Examples of GIS Usage in PNG (current and anticipated) and the Role of PNG National Mapping Bureau Data*" was finally distributed for wide dissemination on 31st August, 2001.

Contributions to the document were made by :

- Fire Services
- Gas Development & Utilisation Project
- Land Management Group
- Malaria Mapping Project
- MapMakers Limited
- National Department of Health
- Oil Search Limited
- PNG Telikom
- Porgera Joint Venture
- UPNG

Apart from being a source of general information, the document supported the concept of additional funding being made available to permit the National Mapping Bureau carry out its functions successfully, and to allow for the development and management of GIS systems in PNG generally.

REDUCING ERRORS IN GIS PROJECTS

TECHNICAL SUPPLEMENT - Courtesy GIS Asia Pacific Magazine
Original Author: Michelle Legault

Errors, errors, everywhere. We realize that errors do occur in GIS projects, but how do we know how to recognize and minimize these errors.

What is 'Error' ?

Although we use the word often, what exactly does the term 'error mean' ? Error basically indicates that there is a difference between the actual data and the true data.

Let's look more closely at two of the more popular terms used to describe data. We often use the term 'accurate' to describe data. Accuracy simply implies that the data represent the real world. What about the term 'precise' ? If the data are precise, then the level of detail is assumed to be high (eg 10.52365 is more precise than 10.5). Accuracy does not imply precision, nor does precision imply accuracy.

How Do Errors Occur ?

Human error is the most common type. The good news is that errors can also be introduced by the computer system. Mind you, it is not as nearly as common, but computer error can provide you with the excuse from time to time when things go wrong.

Errors can be divided into two major categories : positional and attribute. Positional errors result from the incorrect spatial placement of features. These types of errors are important in GIS since the crux of the GIS's reliability rests with correct positioning and relationships between features. Attribute errors are non-spatial and result in incorrect information about the feature, such as its class name.

How can you Minimize Error ?

In order to mitigate error, you must understand its complexities. Make sure you know your data !

You've heard before and you'll hear it again - document ! If you're lucky, the dataset will be well documented and you will know its origins, uses and purposes. Be sure to document the dataset as much as possible.

Most of us won't have the benefits of using a well documented dataset and will have to resort to other methods. Techniques that can help minimize error include checking the source of the dataset for any additional information; using data from reliable sources; using relevant and compatible scales and projection systems; establishing a quality control system for digitizing and checking; using data created in the appropriate time frame (be aware that the date stamped on the map may differ from the age of the actual data); checking for impossible and inconsistent values in the attribute data; establishing a classification system for attribute data; trying not to over simplify data; using appropriate hardware, software and GIS techniques; and , using properly trained staff.

Apart from error, there is also uncertainty to contend with. Uncertainty questions the correctness of the data. Positional and attribute uncertainties are the most common types. What can you do about this ? Visually inspect the map and perform relevant statistical analyses to determine the level of correctness. For example, once a map has been digitized, it can be printed at the same scale or viewed on the monitor and visually compared to its original. Some companies do double digitizing, whereby maps are digitized by different individuals, overlaid, and compared for differences. An alternative to this method is to record information on the registration process. If inconsistencies are detected, or improvements need to be made, then the process involves re-registering data instead of re-digitizing.

Statistical tests may also be performed to determine if all data fall within expected ranges.

Finally, there is error tagging and lineage. The data's creator should include as much information on the source document as possible, such as the creator's name, the date, the scale, and other pertinent information for future users. Lineage provides information on the techniques used to process the data (eg rubber sheeting, overlays, integration with other data sets, analyses).

Why should you Care ?

It's a sad fact but it's unlikely that your dataset will ever be perfect. Even if, by some miracle, you manage to eliminate all errors in your work, your source data will not be free of error. The base map may have been poorly constructed, the interpretation of data may have been faulty, or the positioning of the data may be off 50 metres. The list goes on. GIS cannot model the real world with 100% accuracy, since errors will inevitably be introduced at some stage. Although you may be familiar with the errors on your work, don't assume that the source documents are free of error. 'Everybody believes a dataset except its creator'.

Errors propagate errors. Results from the GIS analysis will be unreliable if the errors are not minimized throughout the project. If the base maps and the digitizing are poor, your coastal management plan may be managing inland urban night-life instead of coastal wildlife.



ER Mapper in the Fight to Save Koalas

Earth Resources mapping has donated two licenses of its ER Mapper software to the Australian Koala Foundation (AKF). They will be used to help create the Koala Habitat Atlas detailing the habitats of these Aussie national icons. The Koala Habitat Atlas is the main ongoing project of the AKF. It is a growing database showing koala habitat at a high resolution on digitally produced maps within local authority boundaries throughout Eastern Australia. ER mapping joins with Hewlett Packard, who have donated 2 Workstations, to provide the Foundation with the tools necessary for the large task of creating the atlas.

Victoria Police Adopt "SpeedMap"

Developed by Erisis, Australia the Victorian Police have implemented "SpeedMap" to analyse the success of its 2300 speed camera locations. Input data used by the Traffic Camera Office for MapInfo include fatal injury data from the 'VicRoads' database and the Victoria Police Traffic Camera Office's own op-

erational statistics such as camera hours worked, number of vehicles assessed and offences detected. Output data include weekend and weekday injuries broken into categories of increase, decrease and no change; speed camera hours worked; and injury / fatal collisions and time. The implementation of "SpeedMap" shows a commitment to using information technology to combat road trauma in Victoria.

CREATING A GIS IN FOUR EASY STEPS

FINAL PART : GETTING IT TO WORK TOGETHER

TECHNICAL SUPPLEMENT - Courtesy GIS Asia Pacific Magazine

Now this is supposed to be the easy part. This is where we combine all the information discussed in the previous three steps to create our GIS.

In previous articles, we've discussed :

- Understanding your goals
- Choosing the right system
- Knowing your data and designing an appropriate database
- Getting reliable data from other sources
- Getting it all together and documenting everything carefully

Now we need to make it all work together.

What Do We Know ?

What do we know at this point ? We should know the *who*, *what*, *when*, *where*, *how* and *why*.

- *WHO* are our users, supporters and managers
- *WHAT* is expected and realistic in terms of hardware / software and project application
- *WHEN* the GIS should be implemented
- *WHERE* the GIS will be used in terms of projects and locations
- *HOW* to apply the GIS and represent the data, and the approximate costs
- *WHY* we want to implement a GIS and *why* management wants to implement a GIS - two *wants* that may sometimes be different

Let's take the answers to all of the above questions, and come up with a solution.

Implementation

Prior to installing and implementing the GIS hardware and software, make sure that all of the requisite pieces are present. Check them against a master list. If you did your homework, you should also be aware of the hardware and software compatibility issues that may be encountered.

Once the system is in place, test it. Initial system testing can be conducted by you. Subsequent system testing is best conducted by someone either not directly involved in the development of the GIS, or involved in a different aspect of development. Where programming was involved, try to test each sub-routine. Document all of the procedures and the testing methods employed.

If you're using real data for testing, as opposed to sample data, it may be worthwhile to take the first step towards standardizing the data by registering them to a common co-ordinate system. It will take time and effort, but it will be worth it in the long run.

Contingency Plans

Things will go wrong; problems will likely arise at the most inopportune times, so prepare yourself. Here are some suggestions that may prevent you from tearing your hair out when disaster falls :

- Backups, backups, backups;
- Try to configure the GIS computers in a similar manner;
- Configure a spare computer or a spare server in the same manner as the other GIS computers
- Document everything, from how you installed and configured the system, to metadata. Publishing this information over the internet/intranet will allow easy access;
- Identify key individuals and their roles with regards to the GIS. Schedule regular meetings to keep everyone abreast of changes.

Customization

Once everything is in place and in working order, consider customizing your GIS. Customization will use key knowledge

and specific skills from the GIS analyst, and thus represents a challenging endeavour. Customization will also result in a more focused and user-friendly system for all levels of users. Remember, if the GIS project and/or department is to achieve longevity, it must appeal to its users.

Training

GIS analysts and/or technical systems developers may not fully appreciate the training requirements of end-users. Since end-users will figure in the success of the GIS, it is important to consider their training requirements. Training for end-users may fall into two possible categories - general training on the software package, and specific training on the final GIS. In order for the training sessions and the GIS to be successful, the following issues should be considered :-

- Ensure that everyone who must use the GIS participates in the training sessions;
- Make the training process a formal one, with structured training materials, exercises, and reviews;
- Document the training process so that future users may be trained in a consistent manner.

Planning for the Future

An awareness of current and future trends will also help to keep the GIS alive and well. Be level-headed about those trends. Encourage the upgrade of current functionalities / features through new technologies instead of merely upgrading the software.

One should consider the entire GIS process prior to diving in blindly. Hopefully this series of technical supplements has helped you see the entire process and its relative simplicity, and encouraged you to start up a GIS in your office.

- Author Michelle Legault

GIS / GPS USED IN PNG OIL PALM MANAGEMENT

A combination of GPS positioning with a geographic information system is being used to good effect in the planning and management of the oil palm industry in PNG. This was reported in a special supplement in 'The National' newspaper on Wednesday August 8th.

The Oil Palm Industry Corporation (OPIC) spokesman Adelbert Gangai stated that the computer-based system reduces decision making time, facilitates the determination of areas suitable for oil

palm growing, and planning associated infrastructure. The computerized mapping / database system incorporates satellite imagery with thematic layers for soils, topography, forest resources and roads in Oro Province. Oil palm production records for use by way of comparison are available from 1997.

The Oil Palm Research Association (OPRA) sees this system as a valuable tool for the integration of rural development, conservation and environmental protection. The system is also used to monitor pest control and crop fertilization. A similar GIS management system is used in the West New Britain oil palm growing areas.

CARTOGRAPHERS' CORNER

News from the PNG Institute of Cartographers



A change of name together with the adoption of a new Constitution and the introduction of a Code of Ethics / Conduct were the main agenda items for consideration by PNG cartographers at their AGM held in Port Moresby on November 14th.

The "Institute of Mapping & Spatial Science PNG" is the name proposed. A stunning new full colour logo was also presented featuring a satellite view of the Earth with PNG in the foreground. Members of the PNGIC will consider the proposed changes and vote on them at a special general meeting in 2002.

The theme of the AGM was entitled "Approaching the Future with Confidence" and if the Inaugural Annual Report for 2001 is any indication, then the cartographers can certainly approach the future with confidence. Membership has increased from only 5 to 103 members in the past 15 months. Finances are picking-up with the help of a Fund Raising and Social Committee. A newsletter, "The Mapping Standard" was introduced in October this year and will henceforth be produced on a quarterly basis.

The President's Report opening statement ... "The PNGIC has come a long way since its inception in 1985 and has very little to look back to with any pride. To a greater respect it has not made any significant forward progress with any confidence and in fact, as dramatic as it may sound and to its detriment, the PNGIC was allowed to wander and was probably converging to a point of self destruction" ... was a sobering reminder of a situation that was not all that long ago.

But, he continued ... "Fortunately, our renewed efforts this year have halted this trend and I believe we are in the process of reversing it and moving forward. This effort was brought about by our desire to succeed as evidenced by this year's large number of registered members and more importantly their willingness to participate compared to previous years".

"Our Performance this year has been exceptional and the facts and figures presented here confirm this. The PNGIC at this time is committed to generating a conducive environment to secure any achievements that are advantageous and profitable for our registered members, the Institute and the mapping profession as a whole".

Mr. Bure went on to say ... "Since the elections in March 2001, the council has sat for seven meetings on a monthly basis illustrating this Council's resolve in placing great importance on getting the job done despite having to alternate between jobs time and again. We have taken an unprecedented step of being proactive and receptive to the issues affecting our members and our profession. This can be observed with some of the measures the council has undertaken like for instance, setting up various working committees, organising fundraising drives, developing the members register".

"In the immediate future, one of our goals would be to prepare the PNGIC, with its new name, logo, members register, code of ethics and constitution, to be in a position to be incorporated with the Investment Promotion Authority. This priority is one of those steps I believe is necessary to realise the goal of being financially self-sustaining".

With the business side of the 2001 PNGIC AGM out of the way, members adjourned to The Gold Club for some quiet (or should that be quite some) refreshments.

- The Cartographer.

A.S.P.N.G. - HISTORY IN THE MAKING

Honour Roll ASPNG Presidents - Courtesy of Steve Low

The Association of Surveyors of Papua New Guinea was formed in 1958 and officially registered on the 4th May 1960. The ASPNG has maintained a continuous presence representing surveyors and the surveying profession in Papua New Guinea for 41 years.



While many have served the Association with distinction in executive positions and as Council members, we take this opportunity to take a look at those who have served as President.

Years	Names	Terms Served
1960-1962	C.W. Sparkes-Carrol	2
1962-1964	R.G. Matheson	2
1964-1965	O.G.G. Dent	1
1965-1966	T.W. Richards	1
1966-1967	J.C. Williams	1
1967-1969	T.C. Jackson	2
1969-1970	T.W. Richards	1
1970-1971	J.C. Macartney	1
1971-1972	K. St.C Matheson	1
1972-1973	M.J. Larmer	1
1973-1974	J.J. Garrett	1
1974-1975	B.J. Mennis	1
1975-1976	J.J. Tierney	1
1976-1977	A. Bale	1
1977-1978	F. Posonau	1
1978-1982	S.P. Low	4
1982-1983	S.N. Palanga	1
1983-1985	P. Salaiau	2
1985-1988	F. Posonau	3
1988-1992	A. Alois	4
1992-1993	S.P. Low	1
1993-1995	T. Kuniaka	2
1995-1997	S. Pambuai	2
1997-1999	S.N. Palanga	2
1999-2000	L. Sipison	1
2000-2002	S.P. Low	2

Next issue we will look at some of the Survey Congress themes that have been adopted over the years.

"MASTAMAK" - SELLING WELL

Mastamak - The Millenium Project of the ASPNG

"Mastamak—The Land Surveyors of Papua New Guinea" is continuing to sell in considerable numbers.

Copies of the book are still available through the following sources in Port Moresby :-

Arman Larmer Surveys, Survey Haus, Gordons (POM)

Or

PNG Chamber of Mining & Petroleum,
The Lodge Building, Port Moresby

At this time of year, if you're looking for that special gift for somebody, you could not do better than purchasing a copy of "Mastamak".

PNG Department of Mining GIS & Digital Data Goodies

Contribution by Russell Harris, formerly A/Head of Information Services, PNG Department of Mining

The **PNG Department of Mining** has been collecting and producing GIS data for a considerable period of time. Primary datasets consist of the following :-

- **Geological Data** : Original 1:250,000 BMR series - all geological regions are available. Layers not yet available include structural data (faults) and point data. These layers are to be compiled as part of the World Bank Institutional Strengthening Project.

All regional mapping carried out by the GSPNG since publication of the original series is available in digital format. This amounts to approximately 79 1:100,000 and 1:50,000 map sheets. These will provide the raw material for updating the of the geological series of PNG.

- **Aeromagnetics** : Flight lines from all surveys have been compiled from the raw data tapes.
- **Tenements** : As part of the upgrade to the tenements database, all mineral tenement boundaries (past and current) have been compiled. This is used, in conjunction with the bibliographic database, for determining what exploration has taken place over an area.
- **Stream Bases** : Approximately 80 1:100,000 digital stream bases are held. These are used for quality control on the geological maps, and for geochemistry samples.
- **Geochemistry** : Approximately 200,000 points are on file.
- **Mineral Deposits Database** : Approximately 1000 known mineral occurrences have been documented, and are available in GIS format.
- **Earthquakes** : Earthquake hypocentres and felt intensity data are stored in a GIS compatible format.

In addition, there are a number of ancillary compilations - air photo flight lines, bathymetry, gravity readings, and metallogenic maps.

"Fore-Sight" thanks Russell for this contribution and wishes him well in his new job situation in Australia - although rumour has it that he may well be returning to PNG shortly.

Surveyors CPD Quiz

Town Planning considerations are many and varied

In Port Moresby, due to water reticulation constraints (and without allowing for a new pumping station), what elevation is considered the critical contour value when planning new sub-divisions ?

- A. 80 metres
- B. 90 metres
- C. 100 metres
- D. 110 metres

Answer **(D)** was the correct response to the last question.

MEMBERS FORUM (Letters to the Editor)

Contributions from Members of the ASPNG and Others



Dear Steve (and a copy to Michael Larmer),

Thanks for all the hospitality and welcome I received in PNG at your (2001) Congress. It was great to be able to share with you again and enjoy the company and fellowship of the surveyors of your association.

As I mentioned, if you want to build a better relationship with FIG and get the most you can from it, my suggestion is that you choose delegates to some of the FIG Technical Commissions. It doesn't mean that they will have to travel to lots of international meetings, but much of their business and information is exchanged via email and the Internet and I am sure that you would gain much from doing this. It would have many benefits to the association. FIG has 9 Commissions with their titles (which are indicative of the areas they are interested in) as follows :

<i>Commission 1</i>	<i>Professional Practice</i>
<i>Commission 2</i>	<i>Professional Education</i>
<i>Commission 3</i>	<i>Spatial Information Management</i>
<i>Commission 4</i>	<i>Hydrography</i>
<i>Commission 5</i>	<i>Positioning and Measurement</i>
<i>Commission 6</i>	<i>Engineering Surveys</i>
<i>Commission 7</i>	<i>Cadastre and Land Management</i>
<i>Commission 8</i>	<i>Spatial Planning and Development</i> <i>(note this is about planning)</i>
<i>Commission 9</i>	<i>Valuation and management of Real Estate</i>

I would suggest that if you could appoint delegates to Commissions 1, 2, 3 and 7 that would be a good start. Commission 6 would be good too if you could manage it.

More details about these commissions Can be found at the FIG web site under Commissions : <www.fig.net>>>

The FIG Director is Markku Villikka. He is a surveyor from Finland who is the first full time director of FIG at its headquarters in Copenhagen, Denmark. He's a good bloke!

Once again, thanks for all your kindnesses to me and all the very best for the new association year ahead.

GRAHAME LINDSEY

24 July 2001

GIS Job Opportunities Increasing

Interesting to observe the number of advertisements appearing in the 'The National' and 'The Post Courier' over the past few months offering full time employment in the fields of GIS database compilation and management.

Both Lihir Gold and Pac Rim Plantations have run sizeable full column ads seeking people with the appropriate qualifications and experience.

In addition to the above, there's been a lot more ads looking for **IT Managers** (IT meaning information technology of course). GIS and IT undoubtedly provide lucrative career paths for some.

"Fore-Sight",
P.O. Box 1271,
Port Moresby, N.C.D.
Papua New Guinea



Phone: (675) 320 - 0231,
Fax: (675) 320 - 1539
Email address :
aspng@daltron.com.pg

ASPNG WEBSITE

Members & Other News ...

Surveyor's Letter to Santa : "Dear Santa,

I've been a good surveyor all year, and while I've worked very hard with my old toys, I could use some new toys like a top of the range GPS surveying system, a total station, a laser level, and a , and a , and a ,"

Santa's Response : *Dear Surveyor, I know you have hung your Sokkia above the fireplace, and while I'd like to give you all you ask for, I Trimble at the thought that you may be Garmin-mi tru. Best I can do due to budgetary restraints at this time is a slightly used hand-held Magellan that I've been using for years".* (Now where have we heard that excuse before ???)

Well known surveyor **Ed Still** is in and out of PNG working with SMEC on the Highlands Highway Project.

Barclay Bros surveyor Bob Crawford was recently trying to find some archival aerial photography coverage over the bay end of the old Lae Airport. Seems they built their crusher plant over a 1932 aviator's grave and the (expatriate) relatives are seeking compensation. This could be a case of **"Shake, Rattle and Roll"**.

Surveyor Rod Gould says he knows of some good accommodation in Brisbane at the right price - just one bottle of **"McLennan's"** finest malt whisky a week.

Surveyor Steve Low has relocated the office of **Steros Surveys** to the upper floor of **Ray White Real Estate** in downtown Port Moresby. Steve's new phone number is 320 0333.

Surveyors wanting to find out more about GPS surveying and GIS can try checking out this web site : **GEOPlace.com** (<http://www.geoplace.com>)

"Fore-Sight" Wishes all Members of the ASPNG and friends, a Merry Xmas and a Happy New Year !!!



(This space was reserved for advertising, however copy was not available at time of going to press).

Editorial Comment : "Fore-Sight's" Going Digital ...

I can already hear the moans and groans from certain quarters, but due to rising production costs and the amount of time involved in printing the publication in its present form, **"Fore-Sight's"** going digital. That is we're going for digital distribution.

With the advent of the **ASPNG** web site, the newsletter can be posted for viewing or downloading in hardcopy form not just by Association members but by anybody who cares to access the new web site. This means that the **ASPNG** will automatically gain a higher profile both locally and overseas.

For those without access to 'the internet' or 'the web', **"Fore-Sight"** can still be mailed to your postal address.

Apart from the advantages in saving time and money, the possibility exists that **"Fore-Sight"** may be able to increase its content and fre-

quency. (The moaning and groaning you now hear is from the Editor-let's keep it quarterly guys). The original concept of the newsletter was to provide a regular avenue of communication between members of the Association, to let members know what's happening and to provide news on technical developments and other matters that may be of interest to surveyors.

However, **"Fore-Sight"** has tended to grow, with the recent inclusion of some technical supplements. This issue, by way of special 'Xmas Bonus' runs to 8 pages. We have had expressions of interest from people wanting to advertise in the newsletter, and we need to be able to provide space for this to happen. Advertising fees provide additional income for the Association. So in order to maintain the momentum, some changes need to be made - and we trust that these will be changes for the better.

-Ed.