



PASSING OF ENGINEERING CHAMPIONS

In the past few months some well-known names of the IMechE Australia branch have passed away. The following pages aim to celebrate their commitment and contribution to both the IMechE and the wider community.

Patrick Russell-Young and George Fox have both been leading lights for the IMechE in Australia, as such there obituaries have been published here as a tribute to them both.

Dr Patrick Henry Young, who later became a Russell-Young, was first and foremost the engineer's engineer. Patrick, distinguished as an engineer and enthusiastic musician, passed away at the age of 86. He was a contributor who touched many lives. Always a perfect gentleman, he was intensely intelligent, as sometimes reflected in his interpersonal relationships.

Patrick's life began in Derby in the UK on the 3rd August 1925, a birth date he shared with his twin brother, John

Patrick was a direct descendent, on his mother's side, of the Dr Charles Burney who wrote the celebrated "*History of Music*" around 1780 and whose daughter, Fanny Burney was one of the earliest English novelists. Patrick's maternal grandfather was Frederick Burstall, Professor of Engineering at Birmingham University.

Patrick's father was Harry Young who obtained a Bachelor of Science from Birmingham University. He was



**Patrick Russell-Young
aka Vulcan**

The Engineer's Engineer
Patrick Henry Russell-Young
1925 – 2012

employed on the technical staff at British Celanese (later Courtaulds) and was President of the Derby Society of Engineers, 1939-1940.

With that background Patrick was destined to become an engineer, as did his twin brother, John. He was schooled at Derby Grammar and I quote "At the age of nine we were put into the Grammar School in Derby. As mentioned, this was founded in 1060; apparently it had a chequered history, once being reduced to only four pupils".

Patrick undertook the old traditional formation as a professional engineer: a five-year apprenticeship in a



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workshop, and degree studies two nights a week and Saturday afternoon at the local technical college for the London External BSc(Eng). Workshop experience included conversion of the Swedish-designed Bofors anti-aircraft gun for mass production. He also began his lifelong infatuation with the violin and he gained fluency in French.

In 1946 he obtained his degree with first class honours and won the Whitworth Scholarship amounting to 150 pounds sterling per year for three years. (Now worth 7,500 GBP per year). This enabled him to do research at King's College London and achieve his doctorate in 1950. His thesis subject "*The Counter-Current Flow in Packed Towers.*"

Upon receiving his doctorate Patrick moved to Newcastle upon Tyne and worked with washing soap manufacturer, Thomas Hedley and Company, later Proctor and Gamble.

On his days off Patrick developed an interest in rock climbing and associated with expatriate members of The Melbourne University Mountaineering Club (M.U.M.C.). At about this time brother John immigrated to Australia and joined the Tribo Physics division of CSIRO. After due thought, Patrick decided that there were better prospects for a suitable marriage partner in Australia than the UK. So in 1954, Patrick arrived in Australia and was met by his brother and a welcoming committee from the Melbourne University Mountaineering Club.

ICIANZ, now ORICA offered him a

job as Work Study Engineer at their plant in Deer Park where they made gelignite. His brief was to devise and implement minor improvements to these various plants.

For most evenings in his first few weeks in Melbourne he was dutch-uncled around by, brother, John, introduced to various people and attending various full scale parties. Many of these included M.U.M.C. members who remained his good friends throughout his life.

During one of the M.U.M.C. "Kodachrome Slide Evenings" at the University Union Patrick met Carol Jonnes who was to become his first wife and mother of Robin, Warren, Alison and Lucy.

Amid these happy times came great tragedy when his twin brother John and two climbing friends, all three named John, were lost and never seen again whilst attempting to traverse Mount Cook in the south island of New Zealand. But Patrick's bushwalking, continued: across the Bogong High Plains, Kosciuszko and Cradle Mountain.

Patrick continued in the Research department at ICIANZ for some two years and then moved to their central engineering department. A measure of Patrick's expertise as an engineer was his engineering project management of ICIANZ's major expansion of the polyethylene plant at Botany NSW. The process required compression of ethylene gas at 2000 bar (30,000 psi. for the older engineer), at a rate of 16 tons per hour. By judicious selection and a process of elimination Patrick chose Nuovo Pignone (PN) of Florence Italy as the high pressure second stage compressor supplier. When visiting PN the Italian engineers spoke no English, not a problem, Patrick conducted the final details of the selection and brief in his fluent French. Proof of the correctness of his engineering decision (against some dissension from ICI UK) came when within a year of first commissioning, the PN compressor had set a world record for time between overhauls.

Patrick dubbed himself 'the Sherlock Holmes of ICIANZ central engineering', the design of much of

the engineering for the company's polythene plants was the peak of Patrick's professional life: a highly technical and extensive performance that engendered respect from management and colleagues for the remainder of his career. ICIANZ valued his contribution and treated him well and he remained with them until his retirement in 1986. He really was the consulting engineer to the ICIANZ central engineering department.

In 1981, he and Carol, parted company after 22 years together. This experience was a dreadful shock to Patrick. Shortly after he moved out, however he renewed acquaintance with Minette Russell whom he had known from the early M.U.M.C. days. She became his second wife and they had a long and successful marriage until her death in 2002. At their union they both changed their surname to Russell-Young.

Patrick had many interests, apart from ICIANZ engineering and the Melbourne University mountaineering club. He was a keen member of both the Institution of Engineers Australia, Mechanical branch and the Institution of Mechanical Engineers and was the secretary of both Victoria divisions of these institutions for many years. This included a period as chairman of the Australia branch of the IMechE. His uncle, Professor Aubrey Burstall, had instigated formation of the Victorian Panel in 1946 when he was Dean of Engineering at the University of Melbourne.

He was a member of the Melbourne Meccano modellers association and always exhibited at their annual open day. He had a particular interest in



4 bar chains and parallel motion mechanisms. He was always working on a new model at home, including the latest project, a mechanical device for climbing ladders. In 1992 he published a book for Year 12 and undergraduate students: *Art and excellence in engineering: the essentials for a successful career*.

However we must not forget playing the violin. In 1971 Patrick renewed a desire to pick up the violin and he took lessons from the Senior Violist in the MSO: Alfred Artingstall. That teacher pupil relationship lasted the rest of his life and Patrick was still taking lessons from Alfred up until his death.

Minette encouraged Patrick in his violin playing. He played with the

Kew Philharmonic Society in the late 80s, and then initiated the Hawthorn Orchestra, of which he was the President. He also founded the Sciences Club Chamber Orchestra for occasional evenings of music-making. He joined the Eltham Orchestra in 1994, and Surrey Hills Orchestra in 2003. He regularly attended Music Camps, and played with the Victorian Amateur Chamber Music Society, the Diamond Valley Singers and the Eltham Orchestra's Operetta and Musical Theatre productions until 2010. He wore his sailor's cap for all rehearsals and performances, very rarely missed a rehearsal, and never missed a performance.

By the age of 86 Patrick had become

very frail and short of breath, partly due to fifty years of smoking and this forced him to relinquish his place in the Eltham Orchestra which was too far to drive at night.

At rehearsal of the Surrey Hills Orchestra on a cold night in June, he suffered the stroke that ended his life. He died with his violin in his hand, doing the thing that he loved. He was a top class engineer, a devoted family man, and a bushwalker, but the one constant was his violin. He is survived by Carol, their four children and seven grandchildren. This tribute includes contributions from many of his friends. ■

A compiled collection of memoirs from
Bill Swinson, Robin Young,
Dr Brian E Lloyd and Warren Mars

THE VULCAN COMPENDIUM

The foreword of the full collection of Patrick Russell-Young's Vulcan articles. Patrick contributed 75 articles under the pen name Vulcan for the *News Bulletin* from 1977 to 2012.

He always bore a strong allegiance to this body, perhaps because the formation of the Victorian Panel was instigated in the first place in 1946 by his maternal uncle: Professor Aubrey Burstall.

Patrick contributed serious articles to *News Bulletin* of this body from time to time but in the late 70s he began the column "Here and There" to provide a less serious, off-beat, Engineer's view on all things in the modern world. He chose the pseudonym: Vulcan because, in his own words:

"Vulcan was the Greek god of Mechanical Engineering, or at least blacksmithing, as it was in those days. My paternal grandfather was the editor of a UK trade journal: *"The Ironmonger and Hardwareman"*. After he retired, he took on the job of writing the gossip column, short articles on this and that. He signed himself Vulcan. So I thought: Let's continue the tradition."

From time to time over the years,

my father would show me his latest "Vulcan" and proudly give me a copy of the *News Bulletin* in which it had been published. I found them quirky, occasionally amusing and quintessentially Patrick. When he died this year I gathered his hard copies, and set about preparing this Compendium.

Apart from converting Dad's hard-copy via scanning and OCR, I also corrected any spelling errors, formatted the product for A4, added some pictures, a few punctuation adjustments and VOILA!

The Compendium

I also annotated the entire text. Having been exposed to my father for my entire life in a range of settings I knew all his jokes, his poetry, his stories, his music, his quotations, his favourite subjects etc. and could often finish his sentences for him. As such, I was in the perfect position to supply background to the multitude of unexplained asides, references and plays on words that pepper "Here And There" from start to finish.

I also point out, (by way of footnotes), any misunderstandings my father may have been labouring under and any questionable statements he may have made that seem out of character. My corrections intend no disrespect to my father and indeed, I don't think that

he would mind, especially since one of his maxims was: "The man who never made a mistake never made anything." I have also adopted this maxim for myself and for certain I make my own fair share.

One must also bear in mind that Dad didn't have the full resources of the internet at his beck and call as I did when adding my footnotes. Without the benefit of Wikipedia, Dictionary.com, Google Translate and Google Search I could hardly have completed the job.

I hope that readers will be amused, interested, educated and have new ideas provoked, by my father's eccentric but highly rational, thought and language.

It has been an enjoyable and deeply nostalgic experience for me to put this compendium together and it brings home to me once more, how privileged I was to have such a father and to have known him so well. ■

Warren Mars

Second son of Dr Russell-Young

The full compendium will be made available online at the IMechE Australia nearyou pages.

E.C. GEORGE FOX

George was a determined engineer with over 75 years of working life. He was a staunch supporter of IMechE. In fact he was instrumental in the forming of the IMechE Branch in Australia 50 years ago. He was a member for 64 years and a fellow for 51 of those years. He also managed to serve Engineers Australia culminating in being Sydney Division President in 1984.

George specialised in power stations, and with his powerful intellect and extensive knowledge he was considered immortal amongst his peers. He was very well respected, although he was not always in agreement, with those he was addressing. His forthright opinion was sure to rankle with those who were swayed by the popular press, social dogma or political correctness. He was never a follower but a consummate leader of men and women.

Based on available evidence George had long concluded that carbon dioxide was not a pollutant but is essential for life and food growth. He concluded from his research that human activity had not contributed to apparent warming of the globe.

He was vehement in providing this evidence to Engineers Australia but to no avail. In 2005 George co-authored an article *Human Contribution to Global Warming is Negligible*. His letter to EA can be seen at this website. <http://www.lavoisier.com.au/articles/greenhouse-science/climate-change/HartleyFox.pdf>

George obtained engineering degrees at the University of Sydney 1932-7 and then travelled to London to work on steam turbines for power stations. He returned to Australia in 1939 to work at Tooths brewery. He enlisted in 1940 and spent the war years in Australia before travelling to the US and UK to work on developing tanks.

George married Joan Menzies in 1949 and they had a son and two daughters. In 1955 George was appointed general manager of English Electric India. Four years later he returned to Australia as MD of the company here.

When I first encountered George, it could never be termed a meeting; he was still a director of 12 companies in Australia and he was in his eighties. He was instrumental in introducing

the ticketing system to Sydney. He was very proud to have sponsored bringing to Australia some engineers who worked on the Three Gorges Dam project in China. This presentation, to a joint EA/IMechE audience, was paid for by George as it was important to him that Australian engineers and our members were enlightened as to the vision of bringing clean power to a wide population.

George was appointed a member of the Order of Australia for services to electrical and mechanical engineering in 1997 as a manufacturer and administrator. He was far more than these mere things. George will be remembered by a host of professional engineers for his determination and knowledge along with his intellect. Also his trade mark walking stick which he had been known to wave at dissenters in the crowd who were too obstinate to listen. ■

Geoffrey D Stone FIMechE C.Eng

Geoffrey Stone is the immediate past Chairman of IMechE NSW and also serves on the Sydney Mechanical Chapter Committee.

EDITORIAL

This edition of the *News Bulletin* will be my fourth, and I hope that I am still delivering on the goals I set out to. To help me continue to deliver a satisfactory read I am always looking for new sources of articles, pictures and any feedback.

If you have anything interesting to share or a paper or article you want published please contact me.

As well as the *News Bulletin*, the Australian Branch provides our members with technical lectures held around the country. These are a great way of getting involved with your panel, and working towards chartership or fellowship. They provide an opportunity to network and learn

more about engineering.

You can also help out by suggesting events or organising a visit to your work or a technical talk.

Supporting your local panel by volunteering is vital for the Australian Branch to be successful.

All the technical lectures organised or co-organised are advertised through the IMechE *nearyou* pages, as well as social media.

I have only recently branched out into certain social media streams such as linkedin, twitter and facebook but they are a great source for up to the minute news, interesting articles and getting in touch with the IMechE and its network of volunteers.

I hope to hear from you soon, and maybe meet you at future events. ■

Matthew Springer

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Check out the *nearyou* pages on imeche.org for contact details and events.

ADVANCED MANUFACTURING IN A HIGH COST ECONOMY

Dr Erol Harvey gave an inspiring after dinner speech to the Victorian members at the annual Christmas in July function. Below is an excerpt of his speech.

It turns out that there is a website just for analysing the origin of quotes and I needed to reference this recently. I had heard a talk in which the speaker quoted Henry Ford as saying that “If I had asked people what they wanted they would have said faster horses”.

The context of the quote was a justification for why publically funded research can be inspiration led, with no obvious connection to end user needs. If Ford did in fact get that response then clearly he was asking the wrong question. Fundamental to any scientific investigation is asking the right question. Fundamental to any engineering development is having the right specification. I could not believe the speaker thought Ford’s quote was useful, so I checked up on whether Ford was being misquoted.

It seems there is no clear evidence that Henry Ford said this. The quote first pops up in a speech his grandson made around 2002. The grandson, also Henry Ford attributed the quote to his grandfather, but nobody can find any trace that this is correct.

It seems that the difference between the wrong answer (“faster horses”) and the right answer (“faster way of getting from A to B”) is the difference between defining an unmet need and defining a technical solution for that need. For manufacturing to have a future in Australia we need to be addressing unmet needs and not focusing only on incremental advances in known technical solutions.

Manufacturing in Australia

Engineering is fundamentally about making things, no matter what gaps there might be in fundamental understanding. I firmly believe that we in Australia have to make things. We

need a manufacturing industry. And we have to make things people want to buy.

It is more expensive to manufacture in Australia now than it has ever been. We are one of the highest cost manufacturing environments in the world – Switzerland tops the list then Scandinavia: Denmark, Finland, Norway, Sweden and then Australia.

There has been some renewed discussion at a State level that perhaps we shouldn’t focus on manufacturing, that we should have a service economy. I thought this idea had died out in the 1990’s. Famously when Victorians said this to the president of Ford in the mid 1990’s he looked stunned and asked “So what are you all going to do – iron each other’s pants?”

We need manufacturing, and the employment it brings. Recent analysis



has shown that for every job in manufacturing a further four are produced in support and services.

Swiss Alpine Meeting

Earlier this year I was invited to a small Alpine meeting in Switzerland to talk about our plastic micro-manufacturing. At MiniFAB we developed and now exclusively manufacture a nano-fluidic device for measuring teardrops. It is made of injection moulded plastic and we hold tolerances of a few hundred nanometers in the medical device. Developed for a US company, we ship tens of thousands of these by airfreight to the USA every Friday afternoon.

I learnt that last year, 2011, was the best year for Swiss manufacturing



1. Ambitious leadership. We must aim to be the best in the world at what we do.
2. Skilled workforce. Our staff, are not a commodity – they are our investment.
3. Global. Australian market will never be large enough to support the specialisation required – we must be global.
4. Focus & Depth. Other words for niche, but with more impact.
5. Distributed Business Structure. Don’t try to do everything yourself. Build valuable partnerships. The best way to contend with our geographic isolation from major markets.
6. Strategic Alignment with Client. Be an important part of their success, and they will help address your challenges. Sensible IP arrangements will make this work.
7. Value. It is not about cost but about value. Our clients would be terrified of having our knowhow move to China and that is why they stay with us.
8. Innovation. Make this part of the fabric of the company. It is a process and can be managed. It is also the engine of competitiveness.
9. Linkages to research that reduce risk and drive innovation. Research is a global industry and it is not hard to build great connections to major research in Europe, USA and Canada. Building those connections in Australia is unnecessarily difficult for a variety of reasons and needs urgent attention.

industry ever. Each of the past 5 years has been better than the last; in an economy in which the currency has appreciated even faster than ours – Why? It turns out that there is no shortage of customers for very expensive watches. Also for Swiss machine tools. As China booms, every Chinese factory strives to get to the point at which they can afford the best quality machine tools. And where do they come from? Switzerland.

So it is not about price – it is about value. Swiss products are perceived to be the best and people will pay for that. They have developed niche areas of expertise, with strong internal

competition and collaboration. EPFL, one of their main Universities, is ranked in the top 5 of the world and industry is well connected. And of course the Swiss know they are the best in the world. There is no crisis of confidence there.

So why, I asked the organizer, was I asked to talk at this meeting filled with Swiss and Southern German businesses? They said it was because they could not find anybody else doing high volume plastic micro-manufacture.

9 Points to Success

So where can we, in Australia, be

competitive? What should be our niche? How can we compete from a high-cost manufacturing environment?

Prof. Göran Roos, a Swedish national, a consultant to the Prime Minister's recent Manufacturing Taskforce and to the South Australian Government as well as a frequent commentator and speaker in Australia, points out that there are 9 key elements to successful manufacturers in a high-cost environment. (See box inset page 5) ■

Dr Erol Harvey

Minifab CEO & Micro and Nano Commercialisation Education Foundation (MANCEF) Asia Pacific Advisory Committee member

OCEANIA REGION (AN UPDATE)

This edition of *News Bulletin* gives me a good opportunity to provide you with an update on the international structure of IMechE, and the place of the Australian Branch within it.

Significant changes have occurred over the last three years recognizing the increased importance of the IMechE overseas membership. Total membership has now topped 100,000 but over 20% live and work outside the UK. The new structure,



Belinda – Young Members Representative for Oceania.

with seven international Regions, provides us with a stronger voice on Council and increased participation on Boards and Committees.

The Oceania Region comprises, at a recent count, 1513 members in the Australian Branch, 288 members in New Zealand, 3 members in the Solomon Islands, and 2 members in Fiji.

The election of a Young Member Representative in each international Region is a welcome move (if overdue) that brings forward the views and ideas of young members for wider consideration. The elected Young Member Representative for Oceania Region is Belinda Herden who works in the oil industry and is based in Brisbane. Belinda, like me, has a place on the International Strategy Board, but she also has a place on the Young Member Board.

Her role involves the promotion of young member activity across the Region, together with aspects of professional and career development. My own role is to coordinate the regional IMechE programme and represent all members within the Oceania Region to the IMechE Council.

Since the creation of the Region last year, a Regional Board has been established to govern activity. The Board, is comprised as shown inset.

The composition of the Board will alter into the future, depending upon need.

Oceania Board

Ken Tushingham

Chairman

Belinda Herden

Young Member Representative

Jon Martin

Hon Secretary/Treasurer

Ian Mash

Australian Branch Chairman

Win Miskelly

New Zealand Representative

Matt Springer

Web Editor

The Board is, of course, guided by the prevailing IMechE International Strategy and the particular focus areas it defines as shown in the inset table.

The approach taken by the Regional Board for 2012/2013 is, in short, to support and encourage the Australian Branch in the comprehensive range of events it organizes, and to focus effort on assisting those members in the Region who do not have the benefit of a Branch organization. This of course means New Zealand.

An information seeking exercise is now underway in New Zealand to determine what it is that will best improve the membership experience. When the results are known the Board will assist in putting a programme in

place for 2013. Perhaps some events can be carried out in conjunction with the Australian Branch.

Our main difficulty is that funds are limited (as they are within most organizations) so our investments need to be well focused. I am pleased to be able to say that the Regional Board is enthusiastic and has the desire to make a difference. I am confident that the effort being expended will produce the desired effect. ■

Ken Tushingham
Oceania Region Chairman



IMechE Focus Areas

- Diversify and grow professional membership
- Increase member engagement and value to members
- Provide expert leadership to Government, Industry, Members, and the informed Public on Engineering
- Develop awareness of engineering and the profile of IMechE
- Inspire young people about engineering
- Secure the long-term financial position

FROM THE CHAIR

Greetings all.

I am now certain that spring is well on the way – not because of the odd warm day, nor the increasingly warm ocean, but rather because I have had an email from the IMechE HQ in the UK requesting we commence the annual budgeting process!!

Therein we carefully plan the range and depth of activities we wish to achieve in the next 12 months, allocate costs against those few items that actually cost us money, and then submit this back to the UK so that (some) funding can be secured. Critical to this, and to the process of delivering what the membership wants, is an expression from the membership advising what you want for your membership fees.

Are we currently doing the right things, in the right ways? Are there any fantastic ideas out there we have not yet thought of? Please do not misunderstand these to be rhetorical questions – quite the opposite – this is a most genuine request for you, the fee paying membership, to increase the value for money of your institutional membership cost by telling us what you do and do not want. All contributions will be well received.

Next on the agenda for many of our panels is making the arrangements for, and then holding the annual Speak Out for Engineering competition. Just as a reminder, this competition is open

to anyone who has been professionally registered for less than 10 years to present a 20 minute paper, on any engineering topic of their choosing. The presentations are marked by a set of judges against a set of scores which is skewed towards the presentation style, rather than technical complexity.

The potential returns from this are significant – not just in terms of another interesting line for the CV, but also in cold hard cash – the winner in each panel receives the equivalent in AU\$ of 300GBP, and second place the equivalent of 200GBP. Each state winner also goes forward to compete in the National Final – to be held in March at the AGM in Adelaide. Here again, the prize monies are awarded.

The winner of the National Final then goes forward to present in the regional final – and if this year's presentation matches the quality of Yassmin's in Hong Kong, then Australian might well retain the trophy for the 3rd year running (which reminds me to ask if we keep it, should this occur). Please encourage those young engineers you work with to compete in the Speak Out competition. Its good fun, a fantastic experience, and when considered purely fiscally, is a fantastic hourly rate!

Elsewhere around the nation, an ongoing focus of our efforts is to support the Professional interviews and guide those working towards either C.Eng or FIMechE status in each of the panels. It might come as a surprise to some but you can do your interviews here in Australia,

and we can assist you with Sponsors and Mentors if requested to. A development which might assist with this process is that potential members can now apply online using a new online application process. Details can be found on the IMechE website.

Just to keep members informed in terms of what is happening regionally, the Regional Chairman and his committee are planning few activities to assist in furthering the engagement of the 300+ IMechE members in New Zealand. Anything that assists in delivering benefits to our members, wherever they are, is to be applauded.

That's all from me. Off to get these damned numbers to add up in this spreadsheet. Calculator anyone? ■

Cheers,
Ian Mash



PANEL NEWS

VIC NEWS

The presentations of IMechE student prizes continues; Presentations were made for the Barnes Waldron Best Student to Shane Suckling (RMIT University) and Lucas Dakey (Swinburne University) together with the Best Project Prize to Simon Varker (RMIT University) and Gil Tal (Swinburne University) completing the presentation of the 2011 round of prizes.

The Panel had the Annual Dinner (or Christmas in July) at the Coopers Inn in central Melbourne. The after dinner speaker was Dr Erol Harvey Director and CEO of MiniFAB Australia. Dr Harvey outlined possible technology areas for advanced manufacturing in a high cost environment like Australia. He also addressed the question of where we are currently in the global scheme of things and posed the questions of where we would like to be and how we can get there. The address was thought provoking, and all present enjoyed the evening.

For the recent Engineers week the panel organized a technical address on state-of-the-art fabrication of Titanium components from Titanium powder at the CSIRO Research Laboratories in Clayton. Two techniques were explained, the first by Mahnaz Jahedi using the cold spraying deposition of a stream of titanium powder at supersonic speeds guided by a robotic device on to a suitable former. The second by Stephanj Gulizia, who used a computer controlled electron beam

to melt and fuse appropriate areas of successive layers of titanium powders to form a complex shape by a layer by layer additive mode of manufacturing. Both presentations were followed by a tour of the laboratory to view the associated hardware and typical examples of manufactured components.

The 2012 Speak Out for Engineering (SOFE) is planned for October and the panel has called for entrants. Please encourage any young engineers you know to seriously consider entering by sending a synopsis to the Panel Chair (details can be found on the near you pages). ■

J.W.Burt
VIC Panel Chair

SA NEWS

As reported in NB 164, Professor Isobel Pollock presented the Humphrey Pump Heritage Award Plaque at the Sydney Power House Museum to SA Member Robin Firth in December 2011. The SA Panel subsequently organised a visit of 18 members and partners to the Cobdogla Museum on 20th May 2012, to unveil the plaque. This event coincided with a visit by the Jaguar drivers club of South Australia. The E-Type Jaguar had been the recipient of an IMechE Heritage Award in November 2011 (as reported in *PE* February 2012) and 5 magnificent E-types turned up for the occasion.

Robin had taken on the Humphrey Pump heritage award submission at



Robin receives the certificate of recognition.

the request of the SA Panel. He liaised with the Cobdogla Steam Friends Society, of which he is a member, and Richard Campbell at Birdcage Walk. Unfortunately, after all the hard work on his submission for the award, Robin was unable to attend the unveiling ceremony for health reasons. The unveiling honours fell to Stan Gafney joined by Ian Pascoe of the Jaguar Drivers Club. Ian was involved in overhauling the Humphrey Pump in 1985-6 to bring it back to working order.

The event was blessed with a perfect autumn day and a delightful chicken salad lunch was served by museum volunteers. Unfortunately, a fault with the Humphrey Pump's inlet valve system prevented the anticipated demonstration.

Expertly organised by Clive Waters, the annual SA Panel Antipodean Lunch this year was held at the Edinburgh Hotel, Mitcham, on 22nd July. It was attended by 22 members and partners. The opportunity was taken to award Robin, thankfully now in better health, with a framed certificate, in recognition of his endeavours.

In his acceptance address, Robin paid tribute to the not insignificant support given by his wife Amy. During the preparation of the submission, which spread over 9 months, Robin had many seemingly insurmountable obstacles to overcome, but, with Amy's loyal support, each one had been scaled. * ■

Stan Gafney

Sadly, Amy passed away on August 28, following heart surgery. Our sympathy goes out to Robin and his family.



Victorian members at the Christmas in July function in Melbourne.



The Humphrey Pump House with E-Type Jaguars.

Life has been going along nicely in SA. The only major disturbance was a new junior engineer in the form of a daughter to yours truly. This then led to a few changes in our attendance to some of our social events.

Since the last issue, we have two major events, both of which I was not able to attend due to baby duties and illness, respectively. Both events are covered separately above and it suffices to say that they were a success. In regards to upcoming events, the panel committee recently met and we are in full preparations for this year's Speak Out for Engineering competition at the start of December. Finally and I am sure that other state panels will carry the same news, our coffers are in a sad state. As one of our panel members mentioned, we, as a branch, are close to returning to a time 30 years ago and will shut up shop unless London commits to a serious funding initiative. I am confident that through the representation of Ian Mash and Ken Tushingham, we have the best chances in succeeding. ■

Michael Riese
SA Panel Chair

NSW NEWS

The NSW Mechanical Chapter have had some recent popular technical presentations of late in conjunction with EA and ASME.

In May, John Baxter from International Technology Licensing did a presentation outlining how to structure an international licence agreement, including deciding on what basic rights are granted and in what territories, the remuneration terms, the performance clauses, and the management of joint developments and potential creation of

new IP under the licence agreement.

John Baxter commenced working for the inventor Arthur Bishop in 1977 as a mechanical engineer in the field of vehicle dynamics. In his 33 year career with Bishop, John was involved all aspects of product and process R&D, IP management, marketing of automotive steering technology and international IP licensing. As part of his responsibilities at Bishop, John managed various product R&D teams working in hydraulic power steering design, engine development, advanced sensors, advanced electric power steering design, vehicle dynamics, motorsport steering.

In June Dennis Cho and Con Sikallos from Sinclair Knight Merz presented on the "Design aspects of a SWRO Desalination Plant"

Design of a major seawater reverse osmosis (SWRO) desalination plant poses many challenges to engineers of various disciplines particularly those of process and mechanical backgrounds. These challenges include meeting or exceeding the contracted energy efficiency targets, addressing durability of materials in a seawater environment, ensuring safety of piping and equipment operating at high fluid pressures and design to meet sometime conflicting constructability, operability and maintainability requirements. This presentation briefly outlined the design aspects of pressure driven membranes, energy recovery, material selection for protection against corrosion and piping.

The recently completed Sydney Desalination Plant has provided Dennis Cho and Con Sikallos with valuable experiences and insights arising from their involvement for over

three years in the bid, design delivery and commissioning phases. Dennis reviewed the basis of design of a desalination plant and Con presented some of the mechanical challenges.

Dennis is a senior process engineer at SKM and has completed his PhD at UNESCO Centre for Membrane Science and Technology at University of NSW. His work is based on over 10 years of engineering experience, largely in the water and wastewater industry.

Con has 20 years of experience in the water and wastewater industry and currently holds a senior mechanical engineering position at SKM. He has been involved in many engineering projects from detail design through to commissioning including the Sydney Desalination Plant.

In July Simon Ringer, Professor of Materials Engineering from the University of Sydney presented on "New Approaches to the Design and Development of Superior Structural & Functional Materials for Automobile and Aerospace Applications: Nano-engineered materials"

Atomic resolution microscopy is now revealing the remarkable complexity within the microstructure of many engineering materials. This is leading us to new insights into how the atomic scale microstructure of materials may be designed so as to achieve entirely new material property-performance space. Examples include the design of metallic aluminium alloys with ~1 GPa yield strength and reasonable ductility, magnetic carbon, spintronic ceramics, and materials that can exhibit both magnetism and superconductivity in the same phase.

In this presentation, Simon discussed the power of atom probe microscopy and how his team at Sydney are re-thinking the design of materials from the atom up, and their applications in automobile and aerospace engineering.

This year's Speak out for Engineering competition will be held on October 18th. Sydney is calling out for competitors. If you are interested or would like further information please contact Ian Mash at IanMash@interfleet.com.au. ■

Monika Sud
NSW Panel Chair



Andrew Fraser Award being presented to Serah Wakia by Dr John Pumwa.

PNG NEWS

The Andrew Fraser Award for the best final year student of 2011/12 was presented to Serah Wakia; who is the second female recipient. She has been consistently performing well throughout her four year degree course. PNG is normally a male dominated country but I am very pleased that ladies are doing very well and I am expecting more ladies to do well in immediate future. Ms Wakia is currently being employed by OilSearch at the oil drilling sites at Kutubu in the highlands of PNG. ■

Dr John Pumwa
PNG Panel Chair

YOUNG MEMBERS PANEL NEWS

All the Young Member (YM) reps have been very busy recently. Brian has been continuing to work with the University of South Australia establishing a support network for young engineers. This has involved developing a model which can be taken to other universities and states. Brian has also taken on various activities as part of the senior SA panel as mentioned elsewhere in the *News Bulletin*.

Belinda's focus has been development of Young Members activities and support in both Oceania and Queensland. Belinda has been attending several events around Queensland and engaging with YMs.

I represented the Australian Young Members on an international level at the IMechE Young Members Board Strategy meeting in July held at

Edinburgh University, Scotland. The weekend is a yearly meeting to plan the activities, goals and strategy of the Young Members Board (YMB) for 2012/2013.

There were representatives from all the UK regions, several industry groups and the Hong Kong YM rep as well as the board's exec team and Hazel Morgan the IMechE staff member representing the YMs.

Following an introductory evening on the Friday in Edinburgh city, Saturday morning provided a formal introduction from all the delegates, a presentation from the Institute of Civil Engineers (ICE) and guidelines on digital media.

Breakout sessions followed, where I was involved in a key Australian topic – International engagement. How to engage and what is expected from international members was discussed at length and some achievable targets were put forward.

Presentations in the afternoon covered feedback from the regions, the technical strategy board, the council and international members. The vision of the YMB for 2013 was discussed before a second breakout session. I attended a session on providing support to YM panels that are isolated or close to collapse. I think all international YM panels will have felt isolated at some point. The

outcome of this break out session was to put forward a support network to allow cross fertilisation of ideas and successful activities carried out by other YM panels.

Saturday concluded with a review of the goals set throughout the day and a further breakout on 2013 objectives. I attended the international engagement session further consolidating the targets set that morning.

Edinburgh gave a very wet and cold Sunday, but the meeting went on to much lighter topics including the successes of the YMB charity grant with a presentation from Project Moz run by the London and South East YM panel. Reviews of other activities and successes took up most of the Sunday, which was refreshing to see how much young enthusiastic engineers can achieve. A professional registration how-to was presented, which I found very useful, and finally a wrap up of the weekend.

I came away with the sincere feeling that whilst located in the UK, the YMB wanted to help the international Young Members. It will be next year before any of the results from the weekend are actioned, but keep your eyes peeled for future activities, help and projects on the *nearyou* pages, social media and your inbox.

Lastly, the Australian Young Members



Australia and Oceania Represented at the Young Members Board Strategy Weekend.

Facebook page is getting a little more traffic at the moment, with relevant events being posted. Why not pop by and “like” us or leave a comment or suggestion. ■

Matt Springer
Vic YM Rep

WA NEWS

The past tertile has been fairly quiet in WA. In late May, Engineers Australia hosted a presentation titled “Trends in Tailings Dewatering utilising Thickening and Filtration Technologies”, as part of the WA joint technical programme, and the IMechE hosted its customary mid-year event.

This was a presentation titled “Get, Keep, Grow – Recruitment and Retention in 2012”, which was delivered by James Fairbairn, who proved to be an excellent orator. The presentation provided an insight into what is actually happening in the WA jobs market, provided advice to help achieve a competitive advantage, tips on how to maximise recruitment success rate and practical strategies on how to avoid losing employees, and concluded with a Q&A session with the audience.

Information relating to a number of other Engineers Australia fee-paying seminars has also been distributed to WA IMechE members.

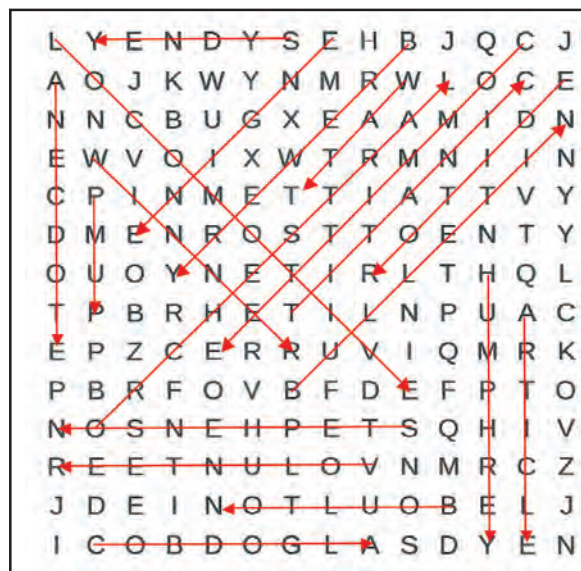
The WA Panel Committee met twice over the last period and arrangements have been made for a presentation to be delivered in the coming period by John Bills, an IMechE Best Project Prize Winner from Curtin University, on his thesis “Optimal Train Positioning”. The Committee has also enquired about a presentation on one of WA’s oil and Gas mega projects being delivered. Flyers for these events will be emailed out to members in due course.

The WA Panel recently conducted a professional review interview for someone wishing to apply for Membership and Chartered Status (thank you to Suzanne Turner

for her assistance with conducting that interview). Members wishing to participate (in the capacity of reviewer) in professional review interviews should contact the WA Panel Chairman, David Heppenstall at dhoq@chevron.com. ■

Thank you,

David Heppenstall
WA Panel Chair



Word Search Solution to NB164

ORCHARDS OF PLENTY

As we pick up the comb during our morning ablutions and then replace it, sadly recognising the futility of optimism, we can hardly avoid the realisation that we are no longer quite as young as we used to be. It has, *je regrette*, become necessary to employ yet-another-layer beneath the jacket before venturing into the wicked world, we have more pairs of gig-lamps than trousers and our central heating bills seem to have gone through the roof.

Not only is it in our *gloria soame* that the march of time is apparent; the electric omnibus seems to be full of school children, the management at our erstwhile shrine of employment appear to have just begun shaving and the leader of the metropolitan orchestra bears a striking resemblance to our nephew.

Nor has it escaped our notice that once lively colleagues have begun to look positively antique, once

comely specimens of the fair sex now resemble Margaret Rutherford and attendances at reunions have dwindled to the extent that next year they will be held in a telephone booth. Most distressing ... and we are reminded once again of [the words of] Tom Lehrer – “When you attend a funeral, it is sad to think that sooner or, later those you love will do the same for you”.

Ah yes, shuffling off the mortal coil is a very real possibility and we must make plans for this contingency... No, not making peace with some *soi disant* omnipotent creator but rather, planting a seed in the marble orchard. Have you made an appointment with your worthy local cemetery trust yet? The pamphlets are in glorious technicolor, entirely in proportion to the cost, which will surely raise your eyebrows more than somewhat. Your correspondent could well be looking at

his monthly expenditure when he says “the plot thickens”.

As for the “tree” itself; the array of designs and the associated literary, (or otherwise), *accoutrements* simply boggles the mind. All the more, since our neighbours to the north have followed the earlier Mediterranean example in choosing to live and die in this fair land. A tasteful and subdued memorial is all very well, but to devote such resources of time and money to a monument to one’s ego is surely counter-productive. To paraphrase Dr Johnson “If one thinks constantly of death, one thinks nothing of life.”

Finally there is the mode of one’s dismissal. Should one depart with the bat held high, the applause of the faithful ringing in one’s ears? or slink off to the ethereal change-room, dragging one’s hopes, to the chorus of water fowl? Surely it matters not how a man dies, but how he lives. ■

Vulcan

NOMINATIONS FOR 2013/2014

AUSTRALIAN BRANCH OFFICE BEARERS

Included in this edition is a nomination form for 2013/2014 Office Bearers. A ballot paper along with a brief bio of the nominees will be included in the January 2013 edition of the *News Bulletin*. The closing date to submit ballot papers is 31 January 2013. Results of the ballot will be announced at the AGM on 02 March 2013.

Please note that there will be no election or voting at the AGM.

The newly elected Office Bearers will take up their duties during the third week of May 2013.

All positions are declared vacant. The positions to be filled are:

- Chairman
- Hon Secretary
- Treasurer
- Assistant Hon Secretary/*News Bulletin* Editor
- Ordinary Committee Member

The first stage is for members to nominate a person of their choice for a specific position, using the nomination form contained in this issue of the *News Bulletin*. The form must be countersigned by the nominee, to ensure his/her acceptance.

Please send the nomination form to the Branch Chairman, Ian Mash, at the address on the form, to arrive no later than 30 November 2012.

A list of nominations will appear in the January 2011 issue of the *News Bulletin*.

Notes:

In the interests of a seamless transfer of responsibility for Branch activities, it has been found that the Branch is best served by appointing the Branch Chairman from among those who have served an immediate previous term as a Branch Committee Member, most usually Hon. Secretary.

WORD SEARCH

Advanced
Compendium
Fox
Future
Lavoisier
New Zealand
Nomination
Oceania
Olympics
Orchard
Passing Plenty
Small Sport
Technology
Vulcan

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TSUUNANTECHNOLOGYLR
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AINAECOMPENDIUMMTGH
CDDNALAEZWENMNPANTA
FARTNLRNTLAVOISIERR
CPLFLUCHPTOCCSNLOD
AHRATAAYIPISOSHUPPC
OERUNICOLAXSATRPZSC
YEFDECNAVDAPOANMHD I

MYSTERY PICTURE

What are these?



Institution of
MECHANICAL
ENGINEERS

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