



FLUID TALK

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The Official Newsletter of the
Fluid Power Society of Western Australia Inc.

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Fluid Power Society Annual Golf Day

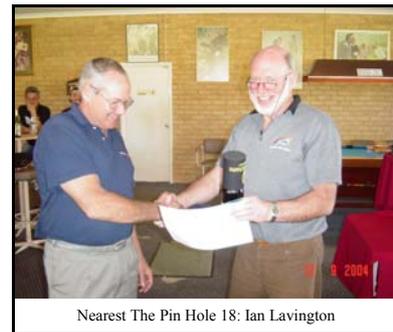
By Phil Bristow-Stagg

Sunday September 12 treated all participants of the FPS of WA annual golf day to glorious sunshine and a perfect temperature of 22 degrees. Once again 40 potential 'Greg Normans' ventured out to do battle with that little white ball.

As with past events, all available playing places were filled and as it is first come, first in, you will need to get in quickly next year or miss out! Make a note in your diary for Sunday 11th of September, 2005. The event has become so popular that this year, Gerry Gould travelled all the way from Geraldton to compete!



Winners: Mining & Hydraulic Supplies Team L to R
Troy Fletcher, Ken Fletcher Snr,
Ryan Davies, Ken Fletcher Jnr.



Nearest The Pin Hole 18: Ian Lavington

Our thanks go to Dale Wharton and Brian Wood at the Peninsular Golf Course and Golfview Tavern for an excellent day of golf, followed by a sumptuous BBQ.

The Society's golf day is only possible due to the generosity of our sponsors and sincere thanks go to them from the committee and members.

We acknowledge and thank the following sponsors and we encourage you to support those companies that support your Society:

Afkos Industries
Alfa Engineering
Brevini Australia
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Denison Hydraulics
Eaton Fluid Power
Festo
Gerrard Hydraulics
Griffiths Components
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Hydraulic Contracting & Supply
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K-ONE Fluid Power
LH Air Tools
Linear Hydraulic Services
Mining & Hydraulic Supplies
Norgren
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Perth Hydraulic Centre
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Prime Hydraulic Power
Sauer Danfoss
The Greek Taverna Restaurant
Transeals

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Presidents' Prologue

By Tim Bailey



Because most people like to experience pleasant change in their lives, your committee decided to hold the AGM in the prestigious President's Room at the WACA cricket ground instead of the Royal Perth Yacht Club where it has been held for the last few years. The forty people that attended enjoyed an evening of excellent food and pleasant entertainment whilst still managing to fit in the business of The Society in electing the committee for 2004/2005 and listening to reports from the Treasurer and myself.

It is my privilege to thank the committee of 2003/2004 for their continuous and dedicated effort in ensuring that The Society's business was conducted efficiently and it is also my privilege to welcome re-elected members back onto the new committee. The only change in the composition of the general committee is that **Jim Muir of Fluid Power Consultants** has rejoined the committee and **Ken Fletcher Jr. of Mining and Hydraulics Supplies** has replaced **Peter Marwood of AAOOST**, who was co-opted onto the committee for 2003/2004. The Society thanks Peter for his contribution and welcomes Jim and Ken onto the committee for this year.

On another very pleasant note, the annual golf day was a great success with more people wanting to play than there were places available. The message is quite clear - book early next year or miss out! An article on the golf day appears elsewhere in this newsletter and again The Society's thanks go to **Phil Bristow-Stagg of PBS Engineering** for his hard and dedicated work in arranging this very successful event and for putting in the 'hard yards' in securing sponsorship funds. I particularly ask you to note the companies, businesses and people who have sponsored this event and, wherever you can, please support them.

A problem that is growing larger and larger, as each day passes, is that of fluid power training in Western Australia. It is a problem that I have continually mentioned in this part of The Society's newsletters over the last two years. Traditionally, TAFE WA has provided fluid power training at a reasonably satisfactory level up until some years ago.

The perceived decline in the ability of TAFE WA to provide adequate and current fluid power training can be traced back to the corporatisation of the TAFE system in the 1990s when each college was deemed to be an individual business unit and was required to operate 'at a profit'.

The result has been that the TAFE colleges have become competitors with substantial duplication of services and the application of 'cost efficiency' by axing expenses wherever possible to promote the 'profit factor'. It seems to me that the whole process is symptomatic of a modern madness that regards the 'bottom line' as the only real indicator of the success or failure of any activity.

The principal problem with this philosophy is that the profit factor derived from training people to greater levels of competency and knowledge very seldom becomes apparent within a short space of time. The real benefit, from a Western society's viewpoint, can take as long as 10 years to become apparent when the recipient of that training has been promoted in their employment as a result of the training and is paid higher salaries and benefits with a resultant greater personal tax return to the Society.

Regrettably, until the current philosophy towards the structure of TAFE WA changes to recognise that training and education will always appear on the ledger as an apparent deficit, fluid power training within the TAFE system is unlikely to make any real progress due to the highly technical and specialised nature of the industry.

As has been mentioned in previous newsletters, The Society is not sitting around waiting for the changes in TAFE to occur and your committee is exploring every feasible avenue including The Society becoming the principal fluid power trainer in Western Australia. One very significant and pivotal training asset that The Society has access to is that of a number of very experienced people who have been involved in the fluid power industry for many years and who can be called on to provide top-level, current technology training.

You will read elsewhere in this newsletter of the attendance of your Vice President, Barry Catanach, at the annual meeting of the International Fluid Power Society (IFPS), formerly the FPS of America, where Barry addressed the IFPS Board members and held discussions with them with regard to our High Pressure Hose Assembler (HPHA) registration program and other matters to progress the development of closer ties between our two Societies in a number of areas of mutual interest.

Barry's discussions with the IFPS were very successful and have set the foundation for co-operation in fluid power training, certification and accreditation that I believe will enable people, who have trained and been registered under the Fluid Power Society of WA curricular matrix and other training programs, to be internationally certified. Additionally, the FPS of WA will have access to the extensive training systems and material from the IFPS.

An objective that I think that the FPS of WA needs to actively promote and facilitate is that of the concept of 'The Fluid Power Society of Australia'. As we are all aware, Australia is a large, sparsely populated continent and distance is our greatest tyranny. However, the advent of modern communications has shrunk this problem to manageable proportions and we can no longer use this as an excuse to maintain our state-orientated isolation.

I would welcome comments from the general membership as to how the states of Australia can be brought together under a single Fluid Power Society of Australia whilst the state 'branches' maintained sufficient independence to deal with local conditions and how the 'FPSA' can include corporate membership.

This year, the Christmas function of The Society will be held at the Hillarys Yacht Club located on the northern arm of the Hillarys boat harbour. The club is a very pleasant venue and we are assured of an excellent evening. The committee has, as usual, agreed to subsidise the evening for all members and their immediate family so I strongly encourage you to support The Society by attending in droves!

However, a word of warning - the venue has a maximum attendance limit so please ensure that you register as soon as you receive the information through the mail or, as a number of people found out on the golf day, you may miss out!

With best wishes..... Tim Bailey



Fluid Power Society Annual Golf Day

.....Continued from Page 1

The results of this very successful golf day this year are:

First Team:

Ken Fletcher Snr, Ken Fletcher Jnr, Troy Fletcher & Ryan Davis.

Second Team:

Malcolm Tucker, Des Rath, Nick Carlino & Mark Barron

Third Team:

David Hepburn, Rob Jenkins, Stephen Crew & Bob Wardley

NAGA Team:

Phil Butt, Glen Smith, Glen Woodward & Tony Schnieder



Neil Sarich Teeing Off
Don't Give Up The Day Job Neil



Phil Bristow-Stagg Teeing Off
FPS Answer To Tiger Woods



Runners Up: Hydair Team L to R
Nick Carlino, Des Rath, Malcolm Tucker, Mark Barron.

Longest Drive Hole 7:
Stephen Crew

Longest Drive Hole 18:
Gerry Gould

Closest to Pin Hole 9:
Ian Lavington

Closest to Pin Hole 16:
Bob Wardley

Muffed Shot of The Day: As no player would own up to this award it was given to Chris Jones who, while practicing his drive at home, hit the curb and the ricocheting ball made a serious attempt at breaking a window!

The winning team chose **Ryan Davis** to be the recipient of the Sauer Danfoss 'Most Valuable Player' trophy.

Another Successful Annual General Meeting for the Fluid Power Society of Western Australia

The Fluid Power Society's Annual General Meeting was held on July 16th, 2004, in the very prestigious President's Room at the Western Australian Cricket Association's grounds in East Perth.

The evening was a great success and well attended by the members with the room almost filled to capacity. The WACA catering staff provided an appetising buffet dinner that was substantially & enjoyably consumed by the guests before the official part of the evening began.

Printed copies of the previous AGM minutes were provided at each table for members to read prior to the dinner starting and the minutes were unanimously endorsed when dealt with as the first item on the agenda when the president, Tim Bailey, opened the meeting.

Tim then gave an informative overview of the Fluid Power Society activities for the year. Amongst many topics mentioned was the establishment of a sub committee comprising Barry Catanach, Stuart Coleman and Tim Bailey to advise the general committee on The Society's options in delivering fluid power training and to recommend a preferred avenue.

Tim also talked about the work that the outgoing committee has been engaged in to raise the profile of the fluid power industry and The Society and he then outlined plans for social and technical events during the next year that those present found both interesting and progressive. Tim thanked everyone who contributed to the success of The Society's year placing particular emphasis on the excellent work done by the outgoing committee.

Phil Bristow-Stagg of **PBS Engineering** was thanked for his continuing work in organising the annual golf day that is one of the highlights of The Society's social calendar. He also thanked **Leeza Wray**, general manager of **Pressure Dynamics**, for the considerable management and secretarial work that she and her company do for The Society at no cost. Congratulations were also extended to **Justin Symmans** from **Gerrard Hydraulics** for his success in the WorldSkills competition.

The secretary/treasurer, Stuart Coleman, then gave the financial report and also took the opportunity to thank Tim Bailey for his work over previous years and expressed his hope that Tim would continue with his excellent work as The Society's president.

Tim then declared all general committee positions vacant and asked Alan Stockdale to act as interim chairman and conduct the election of The Society's president for the next year. Alan called for nominations for the position of president with Tim Bailey being proposed, seconded and elected without opposition.

Tim then asked for the nomination of the names of people to fill the remaining positions available on the general committee. All positions were filled without opposition and the general committee membership for the 2004/2005 year is as follows:

President:	Tim Bailey		
Vice President:	Barry Catanach		
Secretary/Treasurer:	Stuart Coleman		
Committee:	Phil Bristow-Stagg	Ian Lavington	Lloyd Hollier
	Malcolm Tucker	Danny Mayers	Neil Sarich
	Ken Fletcher Jr	Jim Muir	

The evening continued with enjoyable live music and equally lively socialising by the members and friends present. All who attend agreed it was an excellent evening and they are looking forward to The Society's events during the next twelve months.

Events Calendar

First Wednesday of Each Month
General Committee Meeting
AMTC Wembley

The Fluid Power Society general committee meets on the first Wednesday of each month except January. Members are always welcome! Contact the President, Tim Bailey, for details of the meeting location and time. Contact details are on the last page of this newsletter or on our website:

www.fluidpowersociety.com.au



Saturday 20th November 2004
Christmas Function
Hillarys Yacht Club

Details will be posted to all members .



For more details on upcoming events refer to our website

www.fluidpowersociety.com.au

Training, Assessment and Accreditation Information

By Barry Catanach

Although the FPS of WA may seem to be a small organisation when compared with some other organisations, The Society is by no means ineffective. When the accumulated years of fluid power experience of all of the committee members is taken into account, the total is about 250 years! This depth of experience makes for a committee that, individually, has a wide diversity of experience and contacts and can make better decisions on directions leading to more benefits for The Society.

One such direction that the committee has taken over the last six months has been to build a relationship with the **International Fluid Power Society (IFPS)** in the United States of America.

You may recall reading in a recent addition of Fluid Talk that the FPS of WA was developing a High Pressure Hose Assembly (HPHA) registration and training course specifically for personnel involved in making fluid conveying conductor. It transpired that, at the same time, the IFPS was developing a similar program in the USA. The IFPS has now reached the stage of working on the completion of the final stages of their *Conductor & Connector Certification* course ready for their Certification launch in January 2005.

Your committee has been communicating with the IFPS over the last year that resulted in an invitation for our president, Tim Bailey, and myself to attend their annual fall (autumn) board meeting in Detroit as their guests.

Unfortunately business commitments prevented Tim from attending the four day meeting in Detroit but I was able to attend as your representative. The trip had a stopover in New Zealand where I spent 3 Days in Napier visiting the Pan Pac Paper Products Ltd pulp and paper plant as well as providing training for their production teams.

The subject of training and the drastic lack of it is a universal issue that I found to be highlighted in New Zealand. I spend some time with a number of the industry assessors discussing the existing training system in New Zealand and how it functions.

I was told that the New Zealand government has abolished all funding for apprentices and it has now become the responsibility of industry to provide all training and assessing functions with the position of an assessor being completely voluntary. The Poly-technical Colleges no longer provide apprentice training as this is now the complete responsibility of the host employer with whom the apprentice is placed.

Also, they are moving over to a competency system that is controlled by a voluntary group called 'Competenz'. This group is also responsible for delivering the three assessor units that a properly qualified assessor is required to complete as part of the Certificate IV qualification. The three assessor units are similar to the units that assessors in Australia also need to obtain.

The Poly-technical Colleges are now concentrating on providing training at the higher end of education and training only. As can be seen from the emerging picture, trades and training are a declining priority in NZ and their skills shortage is comparable with Australia with no real solution in sight.

The managers that I spoke to from Pan Pac said that recruitment was done through intercompany/interindustry personnel 'poaching' and overseas advertising with neither being an effective solution.



Picture Taken From a Building Roof Showing Part of the Ford Rouge Plant

I visited the Christchurch Poly-technical College and met with the engineering course coordinator. We discussed the topic of fluid power training and, not surprisingly, he told me that no fluid power training is planned for this year. I asked him about on-site training for industry and I received the same response.

Taking all of this information into consideration, I can see a parallel philosophy developing in Australia. More to the point, I see our training system following that of New Zealand. We should all be very concerned at the effective reducing funding that the government is providing to TAFE colleges each year and the annually increasing quantity of funds that each TAFE College is required to raise from outside government systems.

The next leg of the trip ended at the Embassy Suites Hotel in Troy, Michigan where all the board members, trainers and various sub committee members of the IFPS met for four days. The first three days consisted of meetings covering education, training, marketing, online learning, funding, membership and an extremely interesting industry visit to the Ford Motor Company Rouge Plant that I will tell you about in another article.

The fourth and final day was dedicated to the professional development of accredited instructors with the emphasis being on the new connector & conductor certification assessment and training. I found it most interesting to see how they validate their practical and theoretical exams.

The third day was the most important for the FPS of WA as this was the meeting of the full board of the IFPS at which I provided a presentation on the FPS of WA, our current programs and future direction.

The feedback from the presentation was very positive. The board members were most impressed with the fluid power training curriculum matrix that the FPS of WA has developed and they are now considering doing the same thing! We were complimented on our HPHA registration process - the IFPS Board saying that they thought that it was very thorough and that it is something that they may consider for their own program.

The IFPS Board was also very impressed with the logo that the FPS of WA has designed for use with documents and publicity associated with HPHA registration. The IFPS was considering developing their own logo and it appears that we may have provided a solution for them. The IFPS board saw the benefit in having our two Societies using the same logo as it could become the internationally recognised mark of certification/registration.

The theme of my presentation to the IFPS Board was safety, training, the HPHA course and the skills shortage. My comments on Australia's skills shortage came as no surprise to them as they said that all of the points that I had made also applied to the US situation. The topic was discussed at length over the three days with the conclusion being that training and apprentice recruitment and placement is the single, most important issue that needs to be addressed globally.

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Training, Assessment and Accreditation Information Contd.

Another interesting topic was the impact China is having on the American manufacturing industry. The USA is feeling the effects of the economic and the manufacturing emergence of China as companies in America are already closing up in the USA and relocating to China. This is causing great concern to manufacturers still located in the USA as the internal USA market shrinks.

During discussions with the IFPS Board, I agreed to put together a package containing our HPHA competencies and a description of the registration process. This will be forwarded to the IFPS for assessment by their Board. Once the two training systems have been cross-referenced and any appropriate adjustments made, we will have IFPS endorsement for our HPHA registration process and be able to issue the IFPS qualification.



One of the functions of the IFPS is to offer an accreditation process to become a certified fluid power person. This is similar to our skills recognition process for people who have not had an opportunity to gain a formal qualification through a training institution. The IFPS estimate that 350,000 people work in the fluid power industry in the USA with certification being the principal method of gaining a qualification.

The IFPS runs a certification program that consists of attending a review course and then the sitting of a three hour examination. Depending on the level of certification required, an additional three hour practical test may also be required. Successful applicants carry the certification for five years and the certification must be renewed prior to the expiry date.

The IFPS is the controlling body for fluid power training and has the role of issuing all certificates. Specified institutions, similar to our TAFE, called *Key Colleges*, provide the introductory courses. As is happening in Australia, the number of Key Colleges delivering fluid power training is diminishing which is a concern of the IFPS Board.

During the four day annual meeting, the IFPS meeting organisers had arranged a variety of functions in the evenings. On the first night, I was invited to spend time with some of the education committee over dinner. I was privileged to see all of their online learning material that has been developed specifically for the fluid power industry. It consists of outstanding and very impressive multimedia and they very generously gave me copies for me to evaluate and provide feedback.

The multimedia packages cover pneumatics, hydraulics and electrical with a PLC package still under development. Multimedia presentation can be so easily expanded and can also provide opportunities for geographically disadvantaged people to gain access to the latest technologies. I will tell you more of these fluid power packages in the next newsletter.



The welcoming dinner was held on the second evening and was sponsored by the Detroit chapter of the Fluid Power Society. I found it very interesting to observe the extensive networking that took place and enjoyed being a part of it.

The last evening function was the formal dinner for the IFPS where the new Board members were introduced and the handover of one President to the next took place. The new Board is phased in over a period of time and officially takes control in 2005.

I was very pleased to see a large number of pneumatics orientated people involved in the IFPS. They are affectionately known as the 'Airheads'! This designation was always used in humour and, as you can imagine, a lot of friendly banter took place between the oil hydraulics and pneumatics sides of the industry.

During my meeting with the IFPS Board, I told them about the Worldskills competition that is held in Western Australia. My comments seemed to raise their interest in skills competitions and it appears that they will take a more active role in these types of competitions in the future.

They said that a school-based project competition known as 'Battle Bots' is very popular in the USA. The basis of the competition is to build a remote controlled robot that is capable of 'eliminating' its opposition with the last robot standing being declared the winner. A major benefit of the competition is that it provides an excellent means of introducing students to the principles of fluid power in a practical way. However, there is some opposition from a segment of education professionals based on the perception that the robots are seen to promote violence.

I was privileged to spend time with three past presidents of the IFPS and was told of the struggles that they have been through over the years whilst establishing the IFPS. A comment was made on the last meeting day that there was 1200 years of experience on the Board – a staggering amount when you think about it!

Regrettably, my flight schedule was such that I had to leave midway through the last day of the meeting. However, they very kindly rearranged the structure of the Accredited Practitioners day to cater for me having to leave early.

I left the meeting with a feeling that I had so much more to learn but I am grateful for the opportunity to have participated in the IFPS's biggest annual event.

On a personal note, I have to say that the welcome and hospitality that they gave me was outstanding and I am very grateful to the IFPS Board for their invitation to attend the meeting. I can strongly recommend to anyone, who is considering attending future meetings of the IFPS, that they make the effort as they will never regret it.

The networking opportunities alone make such a trip very worthwhile without even considering the generous hospitality of the IFPS. The IFPS is a very professional organisation and it is my hope that we will build a strong relationship with them for the future of fluid power in both countries.

Another result of my visit is that the IFPS has now linked their website to our website. The IFPS web address is www.ifps.org

Please contact myself or any other member of the FPS of WA general committee if you have any comments with regard to more information about this article.

Remember!..... learning is life long.



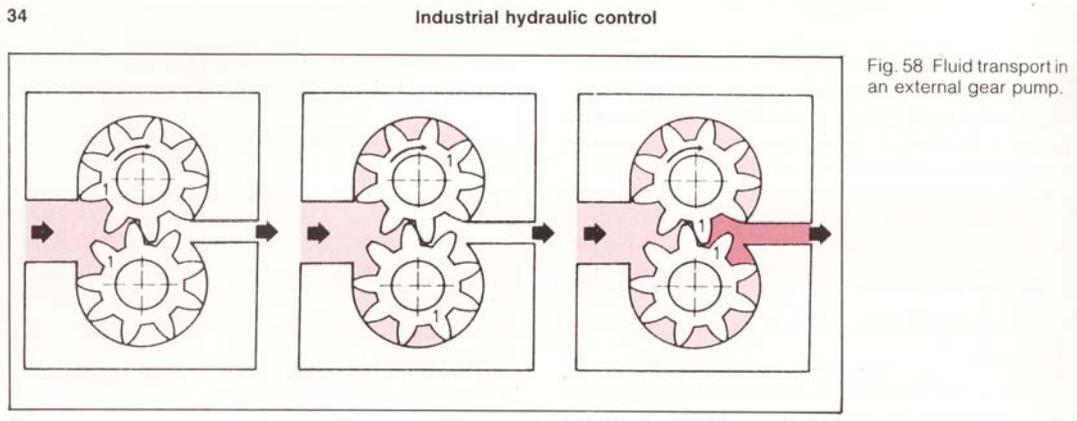
The Evolution of the Gear Pump

By Ian Lavington

The external gear Pump has been servicing the Mobile Hydraulic Industry for over 80 years. I believe they were first used on Tip Trucks back in the nineteen thirties. Although the early designs were quite primitive compared to today's models, the basic operating principle has not changed.

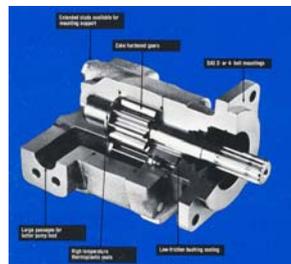
All Hydraulic Pumps, Gear, Vane, Piston etc. rely on the same basic principle, create a displacement chamber, fill it with fluid, and then diminish the chamber to create a fluid flow out of the chamber.

An external gear pump does this by rotating a pair of matched gear in a gear housing. As the gears come out of mesh the gaps between the teeth on each gear become the displacement chambers. This action creates a negative pressure in these chambers. Atmospheric pressure acting on top of the fluid in the reservoir forces the fluid down the inlet lines and fills these chambers.



As the gears rotate they carry the fluid around the pump casing to the outlet side of the pump as the gears start to mesh the oil is forced out of the gear chambers, thus producing a fluid flow.

The bearings supporting these gears have to be lubricated. Most early designs metered a small amount of oil from the pressure side of the pump to do this job. Most Manufacturers used a fixed clearance design to create this desired leakage. As system pressure rose so too did the amount of lubrication oil which after flowing through the bearing would end up back in the inlet side of the pump via internal drillings.



This created volumetric efficiency losses of up to 25% at maximum pressure in some models.

Pressure from Machinery Manufacturers forced Pump Manufacturers to come up with more efficient designs and higher system pressure capabilities. Bearing design and lubrication were the key areas to be improved.

The Needle Roller Bearings were replaced with better load supporting Teflon coated steel bushes with lubrication grooves the full length of the bush. The bottoms of the bushes are open to the inlet chamber of the pump. The same oil that is forced into the tooth cavities is also forced up the bushes for lubrication, and via a groove in the face of the thrust plate into the inlet chamber.

Now that all of the pump displacement is available to do the required external work average volumetric efficiencies of 90% and over have become achievable. Casting location dowels were also added to help stop the housing being pulled into the gears at high pressure. This allowed system pressures to rise to 240 bar in some models.

Inlet and outlet ports were machined in the rear covers and bearing carriers to maximise the strength of the gear housings. The casting materials were also upgraded. Some models used ductile iron, and compacted graphite, to help maintain stability under higher pressures.

Gear pump design has progressed substantially over the past 20 years and we now see them being utilized in many more applications than in the past.

Editorial Note: Ian has over thirty years experience in Gear Pump design and manufacture. He currently manages Hydraulic Resources.

Christmas Celebrations Come Early!

The Fluid Power Society is aiming to beat the annual Christmas rush with our Christmas function this year. So, be like us and book early for a great night out. The Christmas function will be held at Hillarys Yacht Club, Saturday evening November 20th. Society members will receive a notice containing all details by post about three weeks beforehand inviting all members and friends. Book as soon as you receive the information because the venue has a limited capacity!

Upcoming Conferences

The 8th International Symposium on Fluid Control, Measurement and Visualization (FLUCOME) 2005 will be held on August 22th-25th, in Chengdu, Sichuan Province, CHINA.

This is the first announcement and call for Papers on 8th FLUCOME 2005. For detailed information about the technical scope, important dates, venue, organisers, abstract & paper submission, contacts and links to the web-site at [Http://www.8flucome.org](http://www.8flucome.org) and please take a look at the attached MS-Word document.

Brief introduction about the City of Chengdu

Many friends may not know much about the city of Chengdu although it is among the biggest and most beautiful cities of China. This is also one reason why we want to hold the 8th FLUCOME there. Friends from all over the world can come and enjoy this city of world standard natural scenery, traditional Chinese cultural castles, Giant Panda reserves, various restaurants and many more places of interests.

Chengdu is the provincial capital of Sichuan and is one of big cities of China. It has an area of 12,400 square km and a population of ten million. The 2,000-year old Chengdu got its name in the fourth century. Today the city is the center of science, technology, commerce, trade, and finance as well as a transportation hub in southwestern China. Shuangliu International Airport can be reached by transfer from Tokyo, Osaka, Singapore, Seoul, Pusan, Los Angeles, New York, Rome, Paris, London, Berlin, Sydney, Malaysia, Thailand, Hong Kong, Shanghai and Beijing.

If you have any questions or comments, please feel free to contact us and your participation is and will be highly welcomed.

We are looking forward to meeting you at the 8th FLUCOME 2005.

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For further information regarding upcoming conferences contact The Fluid Power Society of WA.

Web Update

Updating of the Fluid Power Society Web Site continues. A new membership form is now available on the website and it can be printed off and sent with membership payment to the address shown on the form.

New members joining between now and December 31st, 2004, will not need to renew their membership until January 1st. 2006.

We ask that all members have a look at the revamped website on www.fluidpowersociety.com.au and we ask you to consider advertising your business on our site. Your company logo and information can be uploaded though Margaret at Lime Communications at a cost of \$50.00 representing excellent value for your advertising dollar.

It will only cost you \$50-00 a year to retain the link with our website that is now also linked to the International Fluid Power Society in the USA – so exposing your company to a huge range of specifically interested people and organisations.

Advertising with the FPS

Your company can sponsor *Fluid Talk*.

For a small cost you can publicise your company with a flyer or brochure that will be included as an insert in the newsletter issue that you choose to sponsor. Your company sponsorship is acknowledged with an editorial in the same edition.

The flyer or brochure that should be A4 size and can be either single or double sided, is distributed to a **targeted audience** at a cost to you of only \$150.

Please contact Margaret at Lime Communications on 9459 4402 to take advantage of this unique opportunity.



A Word From Our Newsletter Sponsor - *Mining and Hydraulic Supplies*

Mining & Hydraulic Supplies consists of three divisions that cover a wide range of products that are applicable to fluid power, mining and general engineering:

M.H.S. SEALS import, stock and distribute a full range of metric/imperial hydraulic & pneumatic seals. M.H.S. SEALS also carry the largest range of DU/DX bushes for all industries and are the WA agents for BABSL high pressure rotary shaft seals.

M.H.S. PUMPS provide a range of positive displacement pumps that includes brands like BREDEL hose pumps, NETZSCH progressive cavity pumps, WATSON MARLOW tube pumps as well as PUTZMEISTER, FMI and HDP pumps. These pumps cover a wide range of applications that includes wastewater, sewage, dosing, food processing, mining slurries and laboratory uses.

M.H.S. HYDRAULICS is the W.A. distributor for STAUFF CORPORATION PTY LTD stocking a full range of hydraulic accessories, fittings, tube (carbon steel & s/s), filters, diagnostic gauge and flow meter kits and a range of off-line filtration units.

Tube manipulation to customer's requirements is also available in tube sizes 6mm to 42mm.

With world renowned product brands like HAWE, WALTERSCHEID, HAM-LET, KRACHT, CC JENSEN, MULLER, WEBSTER, HYDROSTAR, M.H.S. HYDRAULICS offer a range that is second to none.

New Members

The Fluid Power Society of WA extends a warm welcome to all new members. Below are listed Fluid Power Professionals and Students who have recently joined the Fluid Power Society of WA.

- Grant Cheetham - Western Power
- David Hepburn - K-One Fluid Power
- Robert Jenkins - K-One Fluid Power
- Owen West - Pneumatics Direct

Movers & Shakers

- **Mark Waller** has left Hydac to join Brevini.
- **Murray Nardini** has left Hydac to pursue activities outside the fluid power industry.
- **Richard Tweedie** has left HMA and is currently on a world tour. We understand that Richard will pursue other interests on his return to Australia.
- **Ken Maddon** has retired from HMA and has gone to live in Busselton.
- **Eric Boudewyns** is leaving Eaton Fluid Power to join Tyco Motion & Control.
- **Maurice Murphy** has left Pressure Dynamics to pursue other interests outside the fluid power industry.
- **Steve Tester**, Parker's business unit manager, was seen dining with a well known fluid power identity. Could this have been a job interview for a new Perth based motion & control products group management position?
- **Joe Pell** has left Parker Hannifin to further his career at Alfacomma.
- **'Position vacant'**: Beilby Employment Network are searching for a dynamic Service Manager to head up work shop services at a Fluid Power company recently established as a result of the acquisition and merger of three successful businesses. No prizes for guessing who the company is but what happened to the other two companies?



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Disclaimer

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The Fluid Power Society newsletter is compiled by Margaret from Lime Communications. Suggestions, ideas and information for the newsletter are most welcome - contact us on 9459 4402 or email limecommunications@yahoo.com.au.