

The Official Newsletter of The International Fluid Power Society of Australia (Inc)

IFPSA Information

The IFPSA (Inc) general committee usually meets on the second Tuesday 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 publication or on our website:

www.fluidpowersociety.com.au

Members will be advised the dates and times of forth-coming events and site visits by email or by post.



Hydraulic power unit for offshore pipe handling project.

If you want to promote your products or recent project in the next edition email a photo and brief description to:

exo@fluidpowersociety.com.au

President's prologue

by Tim Bailey



It is my great pleasure to inform you that the Constitution document which is required for the formal incorporation of *Fluid Power Society Australia*

(FPSA) has been approved by the general committees of the Victorian-based *Fluid Power Society Inc.* and the Western Australian-based *The International Fluid power Society of Australia Inc.* and the application for the incorporation of FPSA has been submitted to the Victorian state government.

The committees of the two fluid power societies in Australia, FPS Inc. and The IFPSA, have worked long and hard over the last two years to bring about this major achievement which I'm very confident will, in time, be seen to have been a most significant point in the history of the fluid power industry in Australia as it is the first step in the process towards the licensing of industry practitioners.

I see the licensing of particular fluid power occupations resulting in, firstly, a substantial reduction in the current injury and death rates associated with the use of fluid power and, secondly, the official recognition of fluid power people as professional and responsible members of the Australian engineering industry.

We have all taken the first step in what is likely to be a long road as national fluid power industry licensing

legislation is not likely to happen quickly or easily – although I'd be very happy to be proved wrong on both counts! Be assured though, you'll be told of each step in the process as it is taken and the progress made.

As soon as FPSA is legally incorporated, this magazine, *Fluid Talk*, and the present IFPSA website will become the information and contact providers for FPSA so you can expect the changes to occur soon. The websites for the present FPS Inc. and The IFPSA will appear on the FPSA website as new pages so that the members of the two present Societies will be able to access local news direct from the FPSA website.

Following the incorporation of FPSA and as mentioned in this column in previous issues of *Fluid Talk*, The IFPSA will change its name to *Fluid Power Society Australia WA Inc.* (FPSAWA) and I understand that FPS Inc. will change its name to *Fluid Power Society Australia Victoria Inc.* (FPSAVic), or similar, to reflect the affiliation of the two existing Societies with FPSA.

If you've had the opportunity of reading this column in the last issue of *Fluid Talk*, you will recall that I made mention of The British Fluid Power Association setting up a task force to establish recognised technical qualifications in the United Kingdom fluid power industry and that the IFPSA Executive Officer, Stuart Coleman, had been asked by the IFPSA general committee to offer the IFPSA Curriculum Matrix to our friends at The BFPA to assist them in their task.

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President's prologue

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Within a day of Stuart sending the information to the BFPA Executive Officer, he received a reply thanking The IFPSA for the information with an additional note saying that it would be of valuable assistance in establishing the proposed standards. We will be most interested to receive a copy of the conclusions of the BFPA task force as it will provide FPSA with information which can be used in considering making the educational levels applicable in Australia. This could then possibly lead to the unification of fluid power educational requirement standards in Australia and the UK.

As mentioned in this column in the last issue of *Fluid Talk*, the IFPSA annual general meeting dinner is to be held at the main clubhouse of Royal Perth Yacht Club on Friday evening, August 8, this year. The committee has

arranged for **Peter Kennedy**, the well-known Western Australian ABC radio and television political commentator, to be the guest speaker at the dinner. Peter is also the author of a new book entitled *Tales from Boomtown* which gives the 'inside story' on many events and prominent people in Western Australia over the last few decades of the state's history—which, as many will recall, has been most interesting from many different aspects!

This is an evening not to be missed as the food will, as always, be excellent and the opportunity to enjoy the delightful and exclusive RPYC surroundings combined with a most erudite and interesting guest speaker at minimal cost is a rare one!

Please keep in mind two other important matters also mentioned in this column in the last issue of *Fluid Talk*—

you have until December 31st this year to introduce two new members to The IFPSA to reduce your 2015 IFPSA subscription fee by 50% and advertising space bookings are now open for advertisements to be published in what will be the official FPSA magazine as soon as FPSA is officially incorporated.

Please contact the IFPSA Executive Officer, **Stuart Coleman**, at: <http://www.fluidpowersociety.com.au/documents/contact.php> or by telephone on 0417 949 269 (international: +61 417 949 269) about both matters.

With my best wishes.....Tim

All our yesterdays



1983 - Woodside's North Rankin A-to-Dampier pipeline 450 te. plough being deployed for the first time.



IFPSA Life Member, **Phil Bristow-Stagg**, above, managed the team which installed much of the plough handling and towing equipment and provided fluid power systems support during the ploughing operation.



Thinking Hat

Test your knowledge

As the *International Fluid Power Society* in the USA has a number of certifications available that you may be interested in acquiring, here are a few questions that relate to the Industrial Hydraulic Mechanic (IHM) level certifications for you to consider. The IHM certification is the entry level qualification which is specific to the level of a Mechanical Fitter.

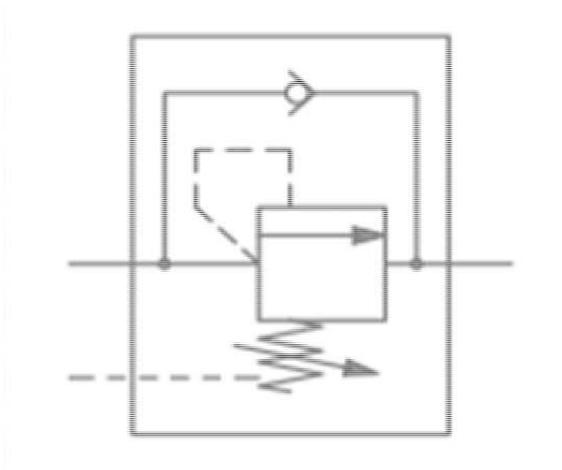
Other levels of certification include:

- Fluid Power Connector & Conductor
- Hydraulic Certified Mechanic
- Pneumatic Certified Mechanic
- Hydraulic Certified Technician
- Pneumatic Certified Technician
- Hydraulic Certified Specialist
- Pneumatic Certified Specialist
- Fluid Power Electronic Controls
- Fluid Power System Designer
- Fluid Power Engineer

Local Western Australian and onsite review training and testing is now offered through Ian McDonald at Challenger Institute of Technology – see details below.

1. According to AS 4002.1 [ISO 4406] - oil cleanliness levels, which of the following is the cleanest fluid:
 - a. 20/16/13
 - b. 21/17/14
 - c. 18/16/13
 - d. 18/13/10

2. The AS 1101.1-2007 (6.1.3.3) [ISO 1219] symbol represents a:



- a. Pressure reducing valve
- b. Sequence valve
- c. A pilot operated pressure relief valve with bypass check
- d. An accumulator unloading valve

3. According to AS 4061, the term **“Difference in controlled parameters, at the same setting, when adjusting the quantity ...”** refers to:

- a. Stability
- b. Cyclic stability
- c. Reproducibility
- d. Hysteresis

4. The code SAE J518 refers to a:

- a. Code 61 flange
- b. Code 62 Flange
- c. 45° flare
- d. 37° flare

5. If a pump is producing 50 l/min at a discharge pressure of 200 bar, its input power is closest to:
- a. 17 kW
 - b. 170 kW
 - c. 34 kW
 - d. 12 kW

Answers:
1 d, 2 b, 3 d, 4 a, 5 a

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Determining root causes

Most people have read hundreds of incident reports in which some of the reported injuries were minor and other incidents resulted in multiple fatalities. Whilst there are many very competent accident investigators engaged in determining the causes of accidents worldwide, there are very few investigators who have sufficient fluid power experience and knowledge to be able to competently determine the root cause of accidents involving fluid power equipment.

The problem is compounded by the general use of industry-specific language in fluid power engineering. As language is a critical part of imparting information to a person - who may be anyone from the manufacturer of the equipment to a Lawyer or a Judge – the effective transmission of fluid power-specific information to people with little or no knowledge of fluid power can be very difficult.

It is, therefore, imperative that all technical terms used in imparting such information are correct and, where necessary, explained in plain language. A well-written report containing adequate detail and explanation is invaluable in identifying the root cause of an accident, a problem or a failure—and in preventing further such incidents.

The use of a *fish bone diagram* or *Ishikawa diagram* – see: <http://asq.org/learn-about-quality/cause-analysis-tools/overview/fishbone.html> - is an effective method of assembling individual facts surrounding an incident in identifying an incident root cause. Generally speaking, fluid power incidents will most likely—but not always – consist of a combination of the following factors: component failure, hazardous energy control failure, worker distraction and unsafe machine design.

An incident investigator is responsible for finding and identifying the root cause and there is no substitute for hard work which includes utilising all available resources – including people with specialist knowledge, in reaching a conclusion.

Where a person provides a report that includes areas of knowledge that are not within the expertise of that person, it is unlikely that the report will be as accurate as it should be. When an incident requiring investigation occurs, it is always wise to assemble a team of people to provide opinions where the members are individually known as specialists in appropriate areas to ensure that the final report is as comprehensive and complete as possible.

Fluid power is a means of transmitting energy and as with all other forms of energy transmission, the process is not free of safety hazards. Fluid power hazards can cause death, injury and equipment and environmental damage. Eliminating hazards and reducing risk requires the employment of a considered and structured process.

The first step in reducing fluid power hazards is to identify the causes and effects of unwanted fluid power incidents. The next step is the identification of potential hazards followed by the application of control procedures and devices. The process must be finalised by the development and provision of specific documentation and personnel training.

An *Achieved Fluid Power Safety Program* will contain some of the following elements:

- Integrated safety devices and components to provide energy control for function completions.
- Integrated safety devices and components to protect people, equipment and the environment.
- Personnel awareness and safe procedure training.
- Protocol documentation covering specific fluid power equipment inspection and hazard assessment.

Fluid and electrical power are ways of transmitting energy and fluid power is analogous to electrical power. A good description of the use of fluids to convey energy is that it is effectively ‘mechanical electricity’.

Fluid power should share the same respect as electrical power in considering its potential to cause death, injury and damage. However, in most countries of the world, the safety standards applicable to each differ greatly.

Additionally, the perception that most people have of fluid power conduits is that fluid power hoses, tubes and pipes are ‘safer’ than an electrical cable even though both may be conveying the same level of energy. The fact is that 100 kW of fluid power energy has the same energy value and effective destructive potential as 100 kW of electrical energy!

Investing time in safety training is a vital part of the process in ensuring long-term, low accident rates. Knowledge not only generates safe work practices—it also increases workplace productivity and reduces the possibility that you’ll have to meet the cost of work accident claims which may include hefty regulatory authority fines. Personnel will recognise that they are valued when their safety is seen to be part of the business investment. A safety incident slows down and in many cases, halts production and it also reduces the confidence of personnel in the business for which they work. Accidents cost money. Investing in safety training saves money.

NOTE: The IFPSA (Inc) acknowledges Hydraulic Safety Authority of Canada (Inc) as the original author of the above information.