

# Never stop learning

*Pipelines International* speaks to Roland Palmer-Jones, General Manager of MACAW Engineering (Newcastle upon Tyne, UK), about his 25-year pipeline industry career, MACAW's 2006 integration into the Rosen Group, and the future of pipeline integrity management.

**How long have you been working in the pipeline industry? What is your background and with what companies have you worked previously?**

I have been working in the pipeline industry for 25 years. I started with British Gas Research and Technology where I was lucky enough to get involved in combustion research, analysing offshore structures, and supporting the epoxy-sleeve-repair system.

I moved to Andrew Palmer and Associates (APA) and got involved in a wide range of consultancy studies on offshore and onshore pipeline systems including cyclic lateral buckling, satellite surveillance, engineering criticality assessments, and repair selection.

APA was purchased by Penspen and I continued to be involved in a similar range of consultancy, but with a more-global reach, getting involved in projects in Argentina, Mexico, Indonesia, Kazakhstan, and many other countries. During this period I worked with an excellent team in the Integrity Division of Penspen, and benefited enormously from their experience. Yes – I'm talking about you Susannah, Graham, Tim, Andy and, of course, Phil Hopkins.

At the beginning of 2015 I took the opportunity to join the Rosen Group. It has been really interesting getting to know the people, the range of services (from pipeline cleaning to testing novel connectors for gas-distribution piping) and the technologies. The commitment to research and development to help our customers particularly excites me, and I am looking forward to driving forward the creation of novel services that will address some of the more intractable problems that the industry faces.

**We understand that you share your time as General Manager of MACAW with responsibilities in the Rosen Group. Are there ever conflicts of interest?**

No, I have never had a conflict of interest.

In the Rosen Group I am responsible for the engineering-consultancy services and integrity assessment services that we provide to our customers, and these include the services that are provided by the team here in Newcastle as well as services such as bending-strain analysis and ILI-feasibility studies provided by our teams around the world.

It is in our long-term best interest as a service provider to the pipeline industry to act with the utmost integrity and provide the best-possible support to our customers that will help them operate safely and efficiently. We do this by working together to minimise uncertainties in data analysis



ABOVE: Roland Palmer-Jones.

(issues such as tool dynamics can influence the data collected and how they are analysed) and integrity assessment immediately feeding-back questions and queries (for example questioning apparent corrosion reported in an unexpected location) to ensure the best-possible combination of inspection results and condition assessment.

On occasion this may mean justifying putting an inspection back, or questioning the value of a particular service. This may reduce our revenue in the short term; however we are committed to building long-term relationships with our customers based on trust and it is vital that we are open and honest about what is feasible, and what we believe the best course of action to be.

**Can you give us a brief background to the MACAW's formation? Who was involved? Is it true that the excellent name originated from Materials and Corrosion and welding?**

The company was formed in 1996 following the closure of the British Gas Engineering Research Station (ERS). Starting in the 1960s British Gas invested heavily in developing expertise in gas transmission and distribution. There was already a substantial gas industry based on gas made from coal, and the coming of natural gas mainly from the North Sea resulted in the need for a new pipeline network to deliver the gas from the new sources of supply to where it was needed.

The challenge of safe operation in a very densely populated country, and a lack of experience with high-pressure natural gas transmission, led to a need to quickly build fundamental knowledge and capability. Consequently significant investment was made in research and development. »



## Global end-to-end solutions for pipeline coatings

### WE ARE SHAWCOR

We have combined the expertise and experience of Bredero Shaw, Socotherm, Canusa-CPS and Dhatec into the world leader in pipeline coatings, subsea insulation systems, preservation solutions and field-applied coatings. Our innovative coating systems enable unique applications for pipeline assurance and maximum protection in the most extreme environmental conditions.

We have a proven track record of more than 400,000 miles of installed pipelines. With our 20 permanent locations providing global coverage and a fleet of modular equipment, Shawcor delivers complete end-to-end solutions to protect the integrity of your pipeline. Together, we are one Shawcor.



To learn more about how Shawcor's pipe coating products and solutions can better protect the integrity of your assets, visit [Shawcor.com/pipeline-performance](http://Shawcor.com/pipeline-performance).



This resulted in a number of industry breakthroughs such as the development of the first high-resolution internal inspection tools, new repair systems, standards for HDPE pipe, and TRANSPIRE, the first quantitative risk-assessment package for gas transmission.

So ERS was an excellent place to develop skills with exposure to real problems and leading-edge research. And when ERS closed, four senior technical staff – Dave Casson, Kevin Prosser, Colin Argent, and Mike Dale – decided that they would set up a consultancy to support companies around the world.

To answer the second part of your question – yes, MACAW does stand for Materials and Corrosion and Welding. These are the specific areas of expertise of the founders.

**Can you outline the company's current relationship with the Rosen Group? How will this be developed?**

Rosen became involved in 2006; there was a need to support inspection customers with plans for repairs, re-inspection, etc. and, in addition to this, the founders were approaching retirement and looking to the long-term development and security of the business they had started.

Rosen, with its long-term view and commitment to research, was a great fit and has owned MACAW since 2010. Now we are fully integrated in the Rosen Group, and work closely with our colleagues all over the world, and in particular with the management systems and software teams.

Our combined integrity team is over 150 people offering an increasingly seamless service via our worldwide network giving access to all of the capabilities of the group to ensure that our customers get the best possible support, be it in selecting the right tool, ensuring a trouble-free inspection, detailed assessment of what the inspection results mean for the management of the pipeline, supporting software, or consultancy services.

We believe that by working as an integrated team we can minimise uncertainties and maximise value.

**What are MACAW's core values?**

Customer focus: We make sure that we understand what the challenges are that our customers face and we are committed to helping them to operate safely and efficiently.

Competence: Technical competence is the basis of our services. We ensure by training, mentoring, and support that our staff are competent to do deliver the services we offer.

Integrity: We will do the right thing, putting the safety of the public, the environment, and staff ahead of everything else.

**What is the next area of growth for the company?**

We are working hard to strengthen our integrity-focused teams around the world so that we can provide services locally improving responsiveness and communication. We are expanding our specialist testing facilities to meet demand for services such as product testing, failure investigation, corrosion testing, and metallurgy.

A key technical area we are developing is geo-hazard consulting that leverages the data coming from XYZ tools and helps customers deal with issues of landslides, ground settlement, etc. In addition to this we are investing in a flow-modeling service for operating pipelines that will help to improve the cleaning services we offer, and corrosion-control consulting by giving additional information on issues such as wax deposition, water condensation, and flow regimes.

**What are the top three criteria that the company looks for when recruiting employees?**

Capability: We look for people who either already have the competencies needed to support our customers, or who we are confident can develop them.

An attitude that aligns with company culture: We look for people that we can work with, who will be loyal, who will put in the effort when it is needed, and are aware that we must operate profitably to have a sustainable business.

Aspirations: We want the right balance of technical interest and ambition to progress.

**Do your neighbouring Newcastle and Northumbria Universities, with their Masters' degree courses in pipeline engineering, aid job applicants in meeting these criteria?**

The Masters courses at both local universities provide an excellent grounding and have been a very good source of recruits. In addition we place members of our team into these courses on a part-time basis as a way of bolstering their training and development.

**What initiatives do you provide for the skills and training of your workforce, and ensuring and developing their competencies?**

We have a comprehensive competency management system with clearly defined requirements and regular reviews. This means that our staff know what is expected of them and get regular feedback on their progression. We provide the opportunity to engage in wide variety of consultancy projects giving excellent on-the-job development.

We also invest a substantial percentage of turnover in research and development giving staff the opportunity to engage with novel developments of tools, systems, and services which also builds competence.

Finally, we encourage staff to attend conferences, deliver papers, and deliver training to our customers, all of which gives a wider appreciation of the industry and the challenges our customers face.

**What pipeline projects is the company currently involved in? What are the work-scopes and challenges involved?**

As you can imagine much of our work is confidential as we deal with many ageing and degraded assets. Interesting examples of current projects include: stress-corrosion-cracking management plans; dent fatigue based on finite-element modelling; research into estimating depth of cover by integrating high-accuracy ILLI XYZ data with ground-surface models; and expert witness on-girth welding contractual disputes.

We are also working on projects that cover developing corrosion-management procedures for internal and external corrosion threats; reviewing the application of novel technologies to reduce costs (for example, the grouted hot-tap tee subsea); the delivery of pipeline integrity management software (ROAIMS) and supporting on-site expert corrosion and integrity services to a major gas pipeline system operator; and, of course, numerous pipeline corrosion-growth and fitness-for-purpose studies.

There are of course many technical challenges associated with these projects (for example, balancing inputs of toughness and residual stress when assessing crack-like defects in the bond line of low-frequency ERW pipe). However, these are what we live for and the things that make our jobs interesting and exciting.

The principal challenge we face is price pressure on engineering consultancy, limiting the expertise and effort that we can devote to getting the

*“We are working hard to strengthen our integrity-focused teams around the world so that we can provide services locally improving responsiveness and communication. We are expanding our specialist testing facilities to meet demand for services such as product testing, failure investigation, corrosion testing, and metallurgy.”*

maximum value out of the available data and ensuring that our advice is optimised to ensure long-term safe and efficient operation. We often feel that more effort on the engineering could result in overall safer operation at lower cost; areas of potential savings include reduced corrosion inhibitor usage, less-frequent inspection and, of course, reduced failure rates.

**Where do you see major gains in safety can be made in terms of pipeline engineering and operation?**

Major gains in safety will come from more rigorous identification and evaluation of threats and finding of ways to mitigate these threats, and this will require competent engineers making full use of all the available data.

A good example is XYZ data. This is now routinely collected, and areas of elevated bending strain are identified. However, there are no regulatory requirements and limited industry guidance, so in many cases follow-up action is limited or not well directed.

Using these data as an integral part of integrity management with appropriate geotechnical understanding can help to identify incipient geohazards (for example, landslides) where loading levels are not yet critical, and help understand the cause of geometric anomalies such as dents and wrinkles. This rigorous use of available data will reduce uncertainty and increase safety.

**What future challenges or trends do you see for the pipeline industry?**

There will be an increasing expectation that all available and relevant data and expertise is applied to pipeline integrity management. This will require robust tools for data management, improvements in the collection and integration of historic (often paper-based) data, and smart applications to work with that data, helping engineers deal with the massive volumes of information and reach optimised justifiable decisions.

**Do you agree that knowledge sharing and industry training are critically important for the continued success of the global pipeline industry? Why?**

Yes, in fact we think it is so important that we are developing our internal training programs so that we can share them with the rest of the industry. Sharing knowledge and training is critical for three reasons:

1. We must continue to improve the safety of the systems we operate. We must never accept that our systems are 'safe enough'. »



**SAVE MONEY WITH ALLU  
- NO NEED TO HAUL IN BEDDING MATERIAL**

With mobile ALLU padder you can screen the excavated material back to the trench. You no longer need trucks to transport excavated material from the site and haul in new bedding material.

ALLU Finland Oy  
Email: info@allu.net  
Tel: +358 (0)3 882 140  
Fax: +358 (0)3 882 1440  
Jokimäentie 1, 16320 Pennala, Finland



This means that we all have to keep learning about the issues that can cause problems and how to tackle them.

2. New problems will come along, and new technologies will be developed. We have to understand these so that we can address the problems and make best use of the new technologies. An example of a new technology is high-resolution geometry inspection: we are still learning how to use these data to best evaluate geometric anomalies and have moved from simple depth-based evaluation to now being able to complete detailed stress analyses of every dent reported at reasonable cost.
3. New people will join our industry and others will leave, and we have to ensure that the knowledge gained in the past is retained and passed on so that we do not get stuck reinventing the wheel.

**What has been the best, or most challenging, pipeline project you have worked on?**

There are a number of contenders. One of the most memorable was the pipeline that had been shut down due a landslide issue, then in completing a risk assessment prior to restart the potential for fatigue cracking of the seam weld (which was known to contain cracks, but which could not be inspected) was identified.

Completing a draft ECA for every joint while between flights at Schiphol to provide assurance that restart was feasible was challenging.

A particularly rewarding project involved helping a small company in Central America upgrade its integrity management, moving from an ad hoc reactive inefficient system to a well-planned system focused on preventative maintenance, with a subsequent reduction in failure rates and operating costs. A true case of a little upfront investment resulting in genuine safety and commercial improvements.

**What is your favourite aspect of working in the pipeline industry?**

Pipelines are pretty simple structures, so even I can make an attempt to actually understand what is happening when a corroded pipe experiences pressure, bending, and thermal expansion loads!

**Do you have any specific advice for those just beginning their careers in the pipeline industry?**

Yes – you get out what you put in. Take an interest in your industry, read the literature, participate in seminars and conferences, and above all find a good team to work with whose outlook matches yours. And make sure to keep learning. P

**GIRARD INDUSTRIES**  
Pipeline Pigs since 1968

**GIRARD INDUSTRIES**  
6531 N. Eldridge Pkwy  
Houston, TX 77041-3507, USA  
sales@girardind.com

Toll Free: 800.231.2861  
Phone: 713.466.3100  
Fax: 713.466.8050  
www.GirardIndustries.com

Unmatched **Performance** and Proven **Results**



# HANDCRAFTING THE FINEST IN UNDERGROUND CONSTRUCTION EQUIPMENT

The performance and reliability you expect from the biggest names in the business.



AMERICAN AUGERS DD-110



TRENCOR T1060

Maxi-Rig Directional Drills • Auger Boring Machines • Product Tooling & Accessories • Mud Pump & Cleaning Systems  
Mid-Size Directional Drills • Chain Trenchers • Wheel Trenchers • Rock Saws • Road Miners

americanaugers.com • trencor.com