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The new Pioneers

Paul Moore spoke to the staff of Cleveland's Pioneer Solutions LLC, an independent engineering company with a mining focus founded in 2004 by former Euclid employees following the closure of the OEM plant in the city

Q What do you see as the main advantages of the key Pioneer engineers having had years of experience at Euclid?

Pioneer's senior engineers and directors have 25-30 years of Euclid experience, which provides several key advantages for the company.

First, with our core staff having worked for a large OEM, we understand the product development process, requirements and interfacing within a large company.

This is important because most of our clients are large multinational OEMs. We are very knowledgeable in mining applications and equipment functionality. As a result, we are able to be effective immediately on mining equipment engineering projects.

We also understand the product life cycle and requirement to develop new products, improve existing products and support products in the field to obtain end-user satisfaction.

Our experience includes design engineering, product development, testing and field services, engineering management and product management. We understand all phases of developing and designing mining products including supplier selection, qualification, auditing, manufacturing processes, prototyping, testing and product support.

Finally, we have senior engineers who have invested many years developing key areas of expertise involved in off-highway machines such as metallurgy, structural design and analysis, hydraulics, power train systems, gearing, brakes, electrical systems, software development, and overall system integration.

Q Does this experience carry a certain amount of weight in itself in the mining sector, given that the Euclid name is and was so well known and so important in the history of mining equipment development?

Yes, we have found that the Euclid name is still very well recognised and the association with the history and success of the Euclid products provides credibility to our new company.



The Euclid association has helped in the mining sector



Partners of Pioneer Solutions. From left to right: Joe Kaltenbach (director of projects), Paul Pochatila (director of engineering), Dave Juba (managing director), Lee Pochatila (senior project manager)

We continue to work at achieving name recognition for Pioneer Solutions in the market. However, letting potential customers know that we have the key engineers that designed and developed the Euclid products does get us an audience and new opportunities, particularly in the large off-highway hauler market.

Q As Pioneer, how has the company sought to broaden its horizons beyond the Euclid range of expertise in the mining and quarrying sector?

Our company contains expertise in all key engineering principles required to develop off-highway equipment.

We have promoted our ability to utilise these engineering principles for all types of construction and mining equipment and have successfully marketed the company and completed projects for OEMs that design and manufacture equipment outside of the core Euclid haul-truck product line.

Q In particular, are there any areas of design and project work with relevance to mining that have been developed 'post-Euclid'?

As an independent company, we have developed relationships with a variety of large, medium, and smaller OEMs. Through these relationships we continue to work on large mining trucks and have added surface loading, underground mining, and material handling equipment.

To satisfy the growing customer base, we have increased our capability by investing in multiple CAD and analysis packages to ensure data compatibility with our clients.

We also pride ourselves on being adaptable and learning customer's design standards, manufacturing processes, data management, and business systems to provide completely integrated solutions.

Q What strengths does being independent bring to the company – the ability to think 'outside the box' more; the possibility of offer mining clients more customised solutions?

Independence and smaller size offers flexibility. We respond quickly to our customers by working through a variety of contract models – alliances, retainers, and fixed price contracts.

We are able to allocate competent resources promptly and manage projects by using a matrix structure. OEM's have seen value in our flexibility and knowledge of a qualified supplier base and test facilities to provide prototype and testing solutions in accelerated timelines.

Our years of experience in developing new designs and resolving field issues have been applied by providing parallel path solutions, reviewing design standards, and providing a fresh set of eyes to effectively create new designs and review customer's designs.

Q How important is mining now as part of your overall business? Does it remain an important focus area for the future while continuing to grow in non-mining markets?

Mining equipment remains a very substantial part of our business, but we continue to seek new customers in other markets that benefit from our engineering strengths.

As we grow into new markets, mining will remain an important segment of business due to the core knowledge and expertise obtained from the Euclid legacy.

Q Can you give any examples of surface mining projects you are currently working on or that you completed recently?

We have strict non-disclosure and confidentiality agreements in place with all of our customers that prohibit us from naming machine models, technical details, and brand names.

We can speak in general terms about some of our project experience. It includes large-vehicle development to integrate the latest engine-emission and electric-drive system technology; large structural casting design, analysis, and foundry qualification; redesigned underground personnel carrier frames for manufacturing-cost reduction; customised dump-body design and analysis; investigation and resolution of hydraulic hoist pump failure through design, prototyping, and field testing; ROPS/FOPS design and analysis yielding successful tests and certification; and complete rear axle design including

cast banjo, spindle and wheel, differential gearing, and planetary gearing.

We have also completed front axle designs including: A-arm, spindle, steering linkage and suspension cylinders. We have been involved in the development of oil-cooled disc brakes for retarding applications and the selection of controller and software development for load-weigh and traction-control systems.

Finally, we have also conducted hydraulic system design improvements as well as prototype and field testing to address oil sand payload sticking and body runaway issues.

Q In your company literature, you list electrical, metallurgical, hydraulic, mechanical and structural aspects in terms of Pioneer's expertise.

Would you say the company is therefore able to offer a complete one-source design and development solution for customers not only in the mining sector, but also in other industries?

Absolutely, given the breadth of our engineering capabilities, some of our clients have commented that our company is viewed as an engineering department of a large OEM, but not attached to a particular company.

We have completed projects with Pioneer being the design lead for an entire machine or

developing several of the major systems on a given machine. This has been applied to the mining market, as well as other markets.

Q Is Pioneer still called upon as an independent source of opinion on design aspects relating to recently

commissioned and/or older but still in service Euclid, Euclid-Hitachi and Hitachi equipment?

Yes, we have maintained a relationship with Hitachi and provide support on new and existing products. We also work in conjunction with end users, dealers, and the manufacturing facility to provide solutions on operating legacy machines.

Q How do you see Pioneer evolving in the future?

Our real value is high level development engineering and project work. We see ourselves as very adept at this process.

Our opportunity for growth starts with our experience and the future includes the ongoing movement toward other equipment, applications, and markets that require these same engineering principles. We need to continue to foster name recognition in a variety of new markets.

We always suggest smaller starter projects to new clients to validate our capabilities and value. We know if a client needs some specialised engineering or additional resources on a high-level project, we can be a complement to an existing engineering department and offer immediate experienced and knowledgeable assistance.

PIONEER SOLUTIONS, LLC

Our senior staff have over 30 years of

OFF HIGHWAY EQUIPMENT EXPERIENCE

- » Metallurgy Selection
- » Structural Design
- » ROPS/FOPS Analysis
- » Hydraulics Design
- » Power Train Design
- » Planetary/Differential Gear Design
- » Electrical/Software Design
- » Finite Element Analysis
- » Multi-Body Dynamic Modeling
- » CAD Modeling/ Drafting
- » System Simulation
- » Remanufacturing Engineering
- » Parts/Service/Rebuild Manuals



"... Pioneer Solutions LLC can provide engineering services based on years of experience in the design and testing of mining & construction equipment. ...I highly recommend Pioneer Solutions to meet your needs."

Walter Fox – CEO
Hitachi Construction Manufacturing LTD.

TECHNICAL SOLUTIONS

- » Machine/System Specification Development
- » Market Research/Analysis
- » Major Development Projects
- » Complete Machine Design
- » System/Component Design
- » Product Upgrades
- » Design Optimization
- » Failure Analysis
- » Prototyping
- » Testing
- » Field Installations

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