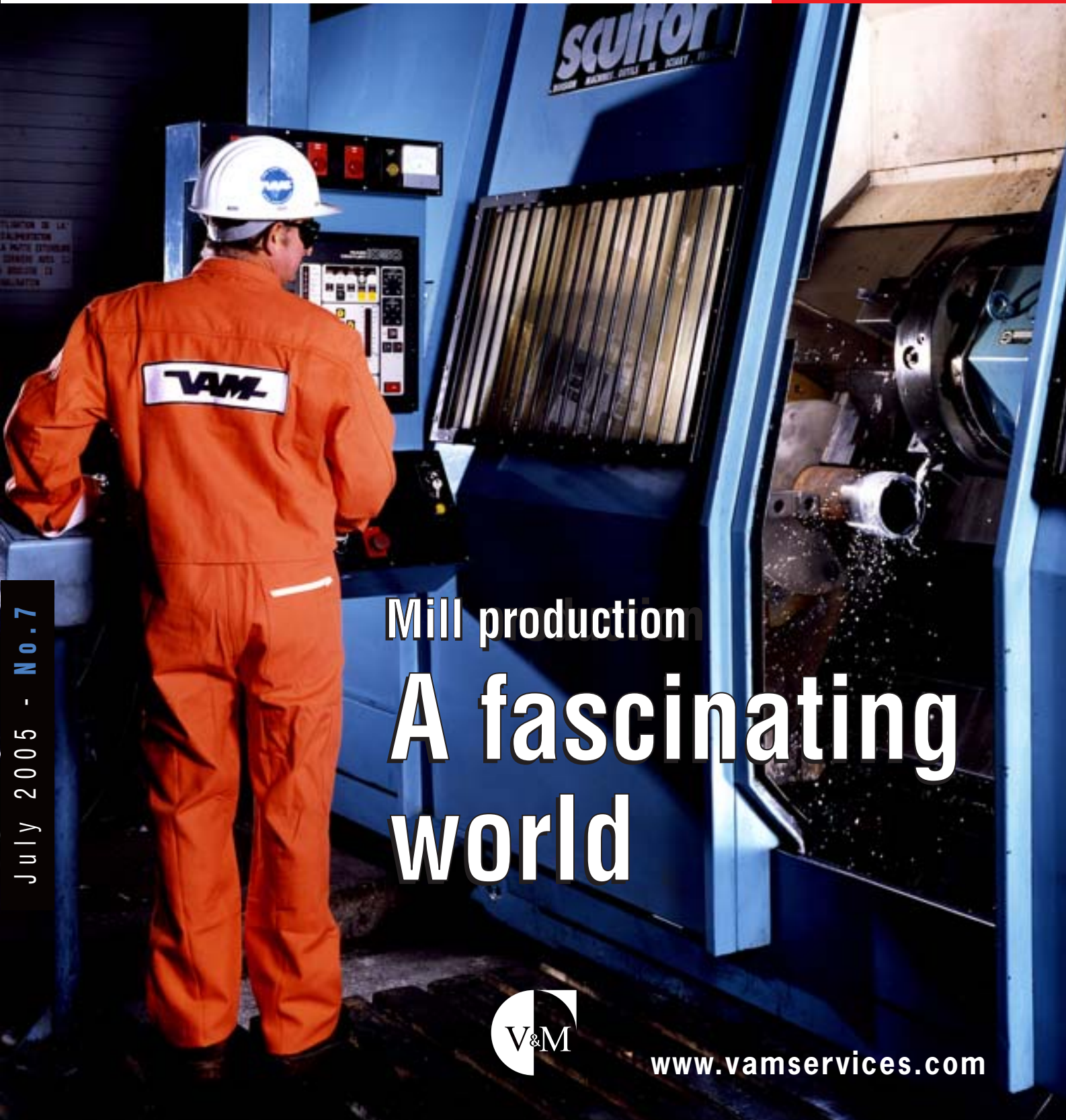


V&M

REPORT

THE VALLOUREC & MANNESMANN TUBES MAGAZINE

OCTG DIVISION



Mill production

A fascinating world



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July 2005 - No. 7



TOGETHER WE'VE SET THE STANDARD !

VAM® TOP

is the industry reference for Premium Connections and is available to you, wherever you are.

VAM® TOP connections and accessories are supported throughout the world by the VAM licensee network managed by VAM Services.

VAM® TOP IS RELIABLE

Used in the highest profile projects throughout the world, VAM® TOP is considered by all our customers as BEST in CLASS.

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VAM® TOP COVERS ALL YOUR TECHNICAL REQUIREMENTS

From 2 3/8" to 16", VAM® TOP demonstrates outstanding performance, capable of withstanding all aggressive well conditions : high internal and external pressure, combined with high tensile and compressive loads as well as torque, bending and fatigue.

VAM® TOP IS ENVIRONMENT FRIENDLY

Used with the dope free CLEANWELL® option, VAM® TOP will help you to protect the environment, increase safety in the field and reduce your operating costs.



VALLOUREC & MANNESMANN TUBES
OCTG Division

WORLD LEADER IN PREMIUM CONNECTIONS

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I wanted to share with you in this V & M Report issue the variety and richness of the world of production. Be it in Brazil, USA, Mexico or Europe, you will meet through these articles people who have a real passion for their jobs and who want to share it. It is exciting and comforting for the future to see that there are plenty of ideas and projects being implemented all over the world. Rethinking drastically the flow of products in the plant, producing new high technology products such as risers, expandable connections or

CLEANWELL®, implementing the best supply chain management techniques to improve the service to our customers, these are a few examples of ambitious challenges our production units are facing.

Moreover, the truly international dimension of the OCTG division gives us a fantastic opportunity for improvement by implementing systematically the benchmarking techniques between our various production sites. So this nice idea of machine upgrade born in the Scottish mist could be implemented also under the Brazilian sun.

Jean-Yves Le Cuziat

Managing Director, OCTG Division

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Aulnoye production site

More compact, more flexible, more fluid!

Recently appointed Deputy Managing Director of OCTG Europe, Nicolas de Coignac is the principal driving force behind a vast program to reorganize the VMOGF Aulnoye site in France, which specializes in threading OCTG products and manufacturing drill pipes. Named “FLUX”, the project can be summed up in a few words: more compact, more flexible, more fluid... to ensure better customer service and better management.



Nicolas de Coignac, recently appointed Deputy Managing Director of OCTG Europe, in front of the plan of the “new” Aulnoye plant

V & M REPORT: What prompted the FLUX project?

Nicolas de Coignac: When I arrived at Aulnoye three years ago, we had just successfully completed a similar operation aimed at regrouping two of our production units in Bellshill, Scotland. I immediately felt that our French site could also benefit from far-reaching restructuring to make it more efficient. There were two plants not far from each other: one manufactured threaded OCTG (tubing, and casing), the other drill pipes. Although fundamentally very different, these two families of parts have

at least one point in common: they are comprised of a long component – a tube – and a short component – a coupling for OCTG or a tool joint for drill pipes. Obviously, then, the regrouping of these two activities, and reorganization of the production lines in the same place needed to be based on this similarity: the long parts on the one hand, and the short parts on the other.

V & M REPORT: How do you carry out such an operation without disrupting production?

Nicolas de Coignac: Of course, it was out the question to reduce production capacity, especially since we are currently enjoying very strong demand. Drawn up between March and September, and approved in November 2004, our project factored in this aspect and is really very much like a sliding tile game. It was divided into three main phases each lasting six months: the first, which is now in the completion stage, involved regrouping the short components; the second, which has just started up, involves the heat treatment; the third, which will get under way in early 2006, will bring tool joint welding over to the “new” plant. The first phase, for exam-

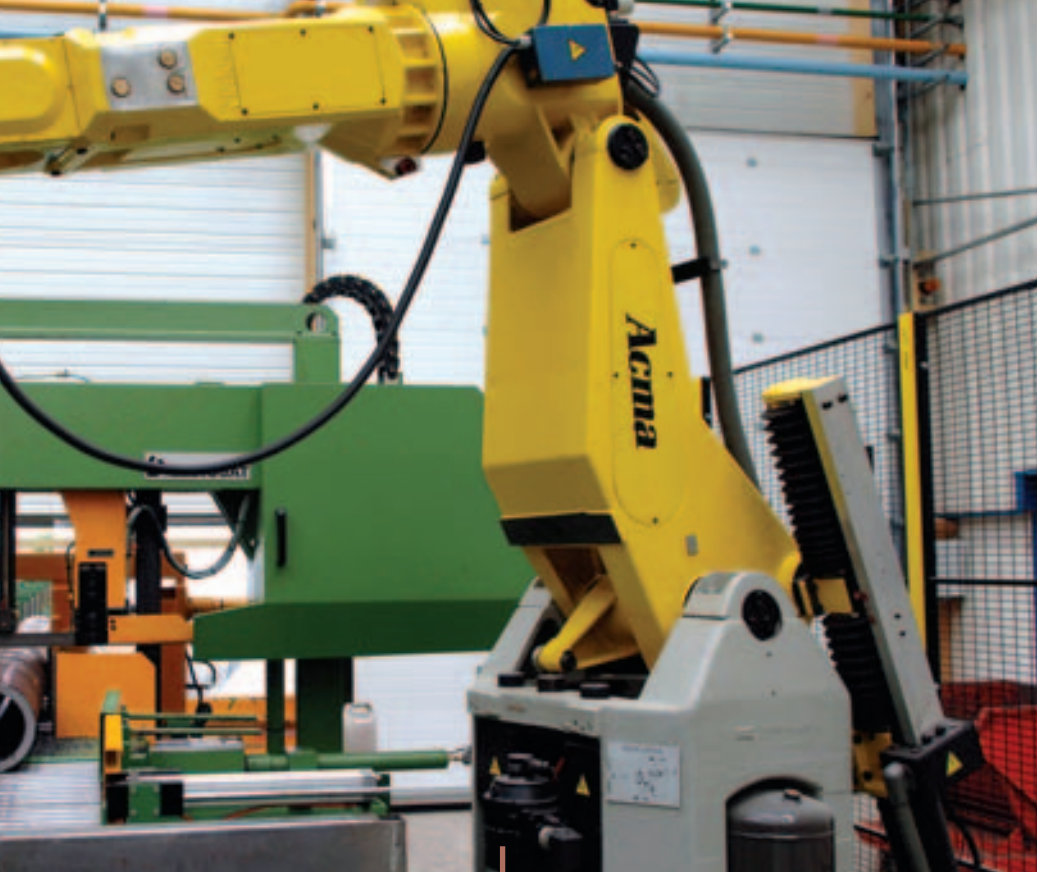
ple, was an opportunity to replace certain machines that continued to run while the new ones were being installed. This way, production was not interrupted.

V & M REPORT: How was the budget allocated for this project?

Nicolas de Coignac: The total budget was around 8 million euros spread over two years. With the exception of the purchase of a new straightener and a series of robots, as well as the extension to one hall, the budget is fairly evenly distributed. Besides the dismantling, removal and reinstallation of the machines, we have also taken advantage of the project to implement a series of technical improvements to make the machines even more efficient. In terms of health, safety and the environment (HSE), we will be on the way to become ISO 14001 compliant, and have even gotten a head start on the upcoming regulatory requirements.

V & M REPORT: What can the customers of V & M TUBES's OCTG Division expect from all these changes?

Nicolas de Coignac: As I mentioned



Introducing new concepts:
a robot for blanks handling

reorganization will be a 30 to 40% reduction in the number of handling operations. In addition to the obvious time savings this represents, it will also improve employee safety and product quality and not the least, being more compact will bring all teams closer one to the other : it's a fantastic leverage for improvement.

I should also point out that we are also working on our SAP management system to optimize the exchange of information between our various departments and units. From booking orders through inventory management and triggering procurements procedures, it will help us get the most out of our new organization.

V & M REPORT: How has this overhaul been received internally?

Nicolas de Coignac: Involved for many years in a continuing progress approach, our teams are used to reviewing their work habits and to the changes that can result from that process. I think it's a bit like in Formula 1; you just have to change the rules for the idea box to fill up again, and to far exceed the initial objectives.

earlier, our aim is to eradicate all breaks in the production flow that hindered our process up until now. Ultimately, we will have a short component unit (couplings and tool joints) and a long component unit (tubing and drill pipes) that will have a sort of close customer/supplier relationship. What we will have gained

in fluidity and flexibility will enable us, in particular, to improve two essential aspects of the service we must provide to our customers: responsiveness – shorter delivery lead times – and order splitting – smaller and more diversified quantities. In concrete terms, in the workshops, one of the outcomes of our



Couplings ready to be
dispatched to the pipe shop



Threaded
pipe

Aulnoye production site

Tube Unit: A passion for threading

François Gauthier, Manager of the Tube Unit at the Aulnoye Threading plant, is adamant: the shop floor is an inexhaustible source of new ideas, especially in the area of threading.



François Gauthier,
Manager of
the Tube Unit
at the Aulnoye
Threading plant

“The Aulnoye Threading plant is separated into two units,” points out François Gauthier.

“The first one manufactures couplings – female threads – and the second one, is in charge of threading tubes – male threads, – coupling assembling, as well as all finishing and packaging operations. The Coupling Unit is thus an internal supplier to the Tube Unit for which it is in fact the end customer: from two tubular components, the Tube Unit produces a finished threaded and coupled product (tubings or casings) ready for shipment. We could even say, ‘ready for use’, as with our new CLEANWELL® solution, the customer no longer even has to apply any grease to the threads, when they arrive on the drilling rig.

“Compared with the other V & M TUBES’ plants dedicated to OCTG, the Aulnoye Threading plant is the only facility in Europe to manufacture

tubings. It also stands out for its production focused on premium connections (VAM® TOP and NEW VAM®), as well as its lines dedicated to the manufacture of accessories (pup joints, flow couplings, etc.), and ‘stainless steel tubes’ threading. The latter two have recently benefited from major investments in order to meet increasing demand.”

‘SHOP FLOOR’ INNOVATIONS

“Even though we carry out a great many operations on our products – cutting, phosphating, application of CLEANWELL®, marking, etc.,” explains François Gauthier, “threading is still our core business. For me, it’s a particularly interesting activity as it is highly sophisticated in technical terms while providing operators with the opportunity to play a significant role. Threading VAM® connections requires a certain level of knowledge, of course, but also a certain physical commitment, the ability to anticipate, and to demonstrate responsiveness.

For me, the involvement of our teams in our continuous progress approach (5S) is very telling about the human dimension of what we do. Since the start of the year, 75% of the improvements made to our threading processes came from suggestions made by the operators! Last year, for example, the VAM® TOP cycle times were longer than those for the NEW VAM®. We have taken a close look at this issue and today, thanks to operator’s continuous innovations, the VAM® TOP cycle times are equal. With the productivity improving, tooling capability has also been upgraded bringing a reduction in reject rates. With the contributions from the Engineering Department, the benchmark achieved across all our production units worldwide, and the inventiveness of our operators, we have access to an inexhaustible source of improvements. If you add into this equation all the experience built up over many years, it is easy to understand why we operate today our machines far above the productivity rates they were designed for initially.



Stainless steel tubes and Accessories threading lines



Quenching water operation

Aulnoye production site

Heat Treatment: a unit under the spotlight



Bruno RIVART,
Heat Treatment Unit Manager

Heat Treatment is the third unit at the “new” Aulnoye Threading plant. At the helm, Bruno Rivart is not only responsible for quenching and tempering operations and Non Destructive Controls, he is also in charge of drill forging.

You take a tube; you heat it in a furnace to around 900°C; you spray it with cold water for carbon steel (no more than 35°C) and by air for chromium; to finish, you put it back in a furnace at around 700°C for the tempering operations. Unfortunately, quenching and tempering operations for the thermal treatment of our products are much

easier to describe than to put into practice: temperature, the time required to raise the temperature, maintain the temperature or leave the part at a given temperature depend on the steel's composition, the thickness of the tube wall, its diameter and, of course, the desired mechanical characteristics. In all, changes to these essential parameters result in hundreds of different



Entrance of heat treated furnace



Descaling before quenching

●●● thermal treatments. Often, this key stage in the manufacturing process is also a bottleneck. This is a problem we have come up against and which partially explains the “FLUX” project for the reorganization of the Aulnoye Threading facility.”

PERFORMANCE AWARD

“The forge is a very different activity,” points out Bruno Rivart, “you heat the end of a tube by induction; and you put it into a matrix and insert a mandrel to obtain an upsetted extremity. This deformation then makes it possible to weld on a female tool and a male tool

by friction. Here again, this forging operation is not as simple as it seems. After all, our new Head Press Operator had to undergo one year’s training before reaching the same level of expertise as his predecessor. It should also be pointed out that it is not a job that you can learn at school... In any event, we have a terrific team who did extremely well at the last Innovation

Trophies organized each year by the Vallourec Group. Within the context of the continuous improvement approach we are rigorously implementing, we have managed to halve the reject rate and increase the workshop’s productivity by more than 20%, which earned it the Productivity Trophy.”

Upsetted extremities of Drill Pipes

Heat in Induction Furnaces before forge



Aulnoye production site **Planning:** an essential interface

To deliver the right product, to the right place, at the right time, you need to plan and organize order processing, production and logistics... That's the job of the Planning Department at the Aulnoye Threading plant managed by Frédéric Guyot who took us on a tour.

The Planning Department," explains its manager Frédéric Guyot, "is the point of entry at the Aulnoye Threading plant. We are the essential interface between the sales & marketing departments and production. Whether the orders come from our head office in Boulogne (France) or any of our subsidiaries based in Scotland, Germany or Brazil, they all transit through us. The first



Frédéric Guyot (in the middle) with his office based team

positive aspect of this invisible principle is that we are able to plan and organize the plant's activity. Based on the analysis of sales forecasts submitted to us, that is, customers' specific or estimated requirements, we are first of all able to adapt our production capacities. In periods of strong demand, such as the one we are currently enjoying, it means, for example, that we will have to look at recruiting new operators, optimize certain production lines to improve their operating efficiency, or even invest in additional equipment. Of course, none of these actions are our actual responsibility, but it is up to us to pull the warning signal so that the necessary steps can be taken as early as possible."

LONG- AND SHORT-TERM PLANNING

"Each quarter," continues Frédéric Guyot "we examine the list of orders whose feasibility has been approved, and therefore booked, and then read-

just our schedule accordingly to ensure we meet commitments made to customers. At the same time, we draw up weekly production schedules by grouping together, as far as possible, production orders with similar specifications. It goes without saying that the competitiveness of our offers is also dependent on this rationalization of our production, which is now approaching 200,000 metric tons a year. To manage such a volume, our Planning Department has a team of some 30 people who look after all logistics issues as well. In most cases, even though road haulage is far from being negligible, our products are railed to Antwerp and then shipped worldwide. We are even authorized customs clearance agents. In addition to all these services, we are also responsible for invoicing... and of course handling all super-urgent orders – fortunately not too frequent – for which our customers count on us even more than at other times."



70% to 80% of the production are loaded directly from the exit of the finishing line on to wagons and railed to Anvers or Dunkerque ports



The criteria for loading trucks doesn't only guarantee the quality of the pipes throughout the way, but above all takes into account the safety of all personnel concerned

Riser pipes made in Rath

As the manager of the Casing Production in the Rath works, Oliver Sommerkamp is in charge of the manufacturing of risers which requires a great deal of know-how...

Dipl.-Ing. Oliver Sommerkamp

was born in Hagen in 1971, completed an apprenticeship as milling machine operator at Mannesmann Demag Fördertechnik (Materials Handling) in Wetter. He then studied mechanical engineering at - and graduated from - Dortmund University of Applied Sciences. In March 1998, Oliver Sommerkamp joined V & M TUBES in Düsseldorf as team leader and system developer in the CIP (Continuous Improvement Process) and Teamwork area. In July 2000 he was appointed assistant manager, and in January 2002 manager of the Casing Production division.



V & M REPORT: Could you please give us a brief introduction to the Rath works?

Oliver Sommerkamp: The Düsseldorf-Rath works of V & M TUBES ranks among the most efficient tube production centres in Europe. The modern plug mill and the pilger rolling mill together produce up to 400,000 tonnes of seamless steel tubes in diameters of 177 to 711 mm. The main product in the riser pipe area is production risers.

V & M REPORT: Rath is said to play a leading role in riser production. How did this come about and what does it mean in practice?

Oliver Sommerkamp: Risers are the custom-tailored suits among pipes, so their manufacture requires a great



deal of know-how. We have been in a position to build this up on an ongoing basis, starting from our first riser project with a North Sea customer in 1994. And since the riser-intensive US market has always been served from Düsseldorf, it was decided to maintain this tradition when the Joint Venture was established in 1997. We work closely with the research department at Aulnoye as well as with the relevant sales departments, including Houston, Texas.

V & M REPORT: What are the special features that distinguish riser pipes from other OCTG products? Can you give us some examples of recently completed projects?

Oliver Sommerkamp: Marine riser columns rise from the seabed to the surface. Made up using leak-tight

threaded and coupled connections, they encase drill columns or production tubing strings, protecting them against mechanical and corrosive stress. The most important criterion governing riser design is resistance to fatigue under the stresses exerted by waves and currents, which can vary considerably depending on water depth and marine geography in the region in question. That's why there are so many different types of risers and why new variants are being developed all the time. Recent two projects include the supply of 600 SEA VAM® TTR outer and over 1200 inner riser pipes with VAM® TOP FE.

V & M REPORT: How do you organise the completion of such orders?

Oliver Sommerkamp: Since risers invariably fall under the heading of



The production line for casing threads also cuts state-of-the-art riser pipes to customer requirements

The casing production core team (L to R): Udo Schröger, Klaus-Peter Schumacher, Caroline Rott and Oliver Sommerkamp



"special products", you need a dynamic organisation concept to handle such projects optimally. We have developed this over the years. In the casing area, we have worked with a core team of four since 2000 – two foremen from the threading and pipe end finishing shops, the shop manager and an engineer. This team coordinates and harmonises internal and external processes in the preliminary planning stage, so they can come up with clarified concepts at the first project meeting. Production-specific details, of course, also need to be discussed with all the other areas involved – such as the Quality Department, the rolling mill, the heat treatment shop, etc. – before and – at regular intervals – during the threading operations, in order to ensure an optimum end product.

V & M REPORT: What can you tell us about the special equipment used or special qualifications required?

Oliver Sommerkamp: The most critical points in riser pipe production include – apart from precision thread cutting – the high torques used for screwing on the coupling boxes. Despite the enormous forces involved, the surface must not be damaged in any way. We use special power tongs for this job that can apply torques of up to 110,000 Nm. A further decisive factor is the team, of course. The best possible qualification goes without saying. But in addition, they must be committed to doing what they do excellently. In other words, they must have quality awareness - individually and as a team.

VAM[®] ET: Expanding The Bounda

One of the most significant technological developments to be produced by V & M TUBES in recent years is the introduction of expandable tubular products. VAM[®] ET is a fast growing connection, with sales increasing solidly, year on year.

The first VAM[®] ET product to be used commercially was the 6" 18.6 lb/ft VAM[®] ET-NA. This gas-tight connection design was patented and then threaded on a specific grade of L80 13%Cr casing. The first 'live' run was in 2002, in the Netherlands. Thereafter, the design was 'up-sized' to 7-5/8" 29.7 lb/ft and this connection was called the VAM[®] ET-NB. This was run in Malaysia in 2003.

At around the same time, V & M TUBES developed a proprietary steel grade, VM 50 ET, which shows physical properties that are highly suitable for expandable

applications. The low internal stresses and absolute minimum of inclusions are the key factors. The most recent connection to have been developed is a 7-5/8" 29.7 lb/ft water-tight VAM[®] EWT which has undergone rigorous post-expansion testing, with exceptional results. Current R&D projects include a new water-tight connection called VAM[®] ET-WISE (Water-tight Integral Solid Expandable) and also new product sizes. The actual applications for which VAM[®] ET can be used are numerous:

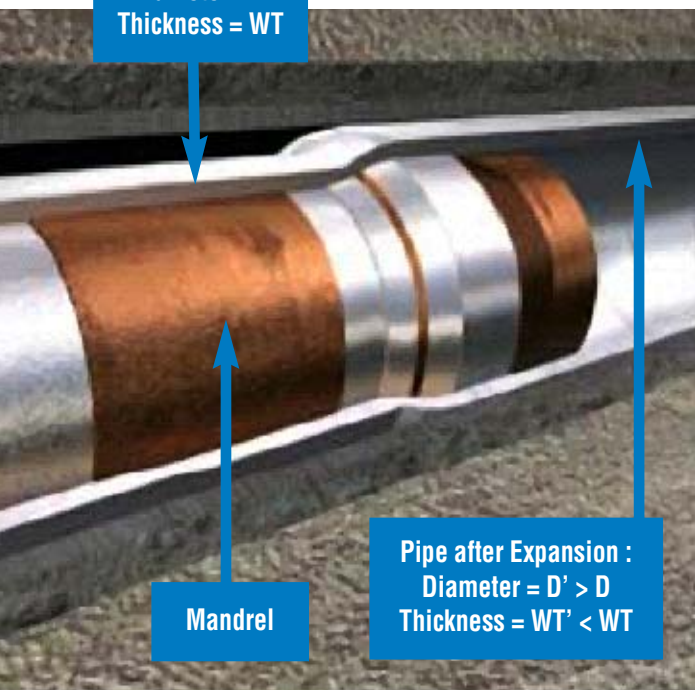
1. Cladding - this removes the need for expensive full work-overs by eliminating the need to retrieve the old casing / tubing.
2. Patches - to shut off perforations. This replaces the need for a traditional 'straddle' that causes a restriction in the flow of hydrocarbons.
3. Open-Hole Cladding - this is for curing drilling problems, such as mud losses or for drilling through over-pressurised zones.
4. Multi-Lateral Wells - the expandable casing allows the largest possible diameter side-tracks, hence reducing bore restrictions.

5. Mono-Diameter Wells - this is very much under development and there are currently many different philosophies about the usage. However, this could revolutionise the way in which wells are drilled.

PRODUCTION CAPACITY

All VAM[®] ET is currently manufactured in the UK. VMOG UK has a heat treatment facility, a coupling threading shop and two threading lines at the Clydesdale Plant in Scotland. Line 1 is used to thread standard casing items. Line 2 was originally installed specifically for the production of VAM[®] ET. This is a testimony to the level of investment and profile that this product range deserves. The line was installed with one threading machine, plus copper plating and phosphating facilities. Whilst all non standard products, such as VAM[®] ET, are produced on Line 2, it's capacity has subsequently been increased by the inclusion of a wrencher and final inspection facilities to allow production of the full range of VMOG UK

Pipe before Expansion :
Diameter = D
Thickness = WT



Mandrel

Pipe after Expansion :
Diameter = D' > D
Thickness = WT' < WT

Plant colleagues associated with VAM[®] ET

Mark Byrne is Methods Manager, VMOG UK Clydesdale Plant.

'I started my working life as a mechanical apprentice at Clydesdale Works. The Clydesdale site at that time was a vast area of Steel Works, Pipe Mills and the Quench and Temper Plant; the only plant which still stands today. After serving my apprenticeship I became involved in a few supervisory roles within the engineering and production departments at Clydesdale before being transferred to the Imperial Works in 1993. There, I got my first taste of method type activities. My career since then has mainly been in Methods, working to the position I have now, Methods Manager. One of the main highlights for me in my career so far, has been the involvement within the development and production of VAM[®] ET. From the creation of an idea on a piece of paper to the point of realising the finished article in front of you is extremely rewarding. The new challenge for me at this time is to be able to manufacture this joint on standard machines. To do this I have been working closely with the R&D Department in Aulnoye, where they have made changes to the design of the connection to allow the joint to be made more easily, as well as improving the machine's capability to produce it. The results of this project should be concluded by the end of the year.'

ries

products, thus increasing the plant's flexibility.

CHARACTERISTICS OF VAM® ET

The actual characteristics of the VAM® ET connection do not affect the method of production. However, the end preparation, particularly on the box end is critical to the success of manufacture. The internal and external machining tolerances of the connection are critical to its performance. These tolerances mean that the thickness of the incoming pipe can also have an adverse affect on the success of machining and therefore must be very strictly controlled.

As a key high-technology niche, V & M TUBES remain dedicated to this exciting technological field and look forward to the advances that are just around the corner.

People on the move...



Aaron Brammer, previously OCTG Sales Manager with V & M STAR in Houston, took over as Sales Manager with VALLOUREC MANNESMANN OIL & GAS FRANCE in Boulogne, Paris as of February 1st, 2005.



Albert Bruneau, previously Sales Manager at VALLOUREC MANNESMANN OIL & GAS FRANCE in Boulogne, Paris, has been transferred as of April 2005 to V & M do BRASIL in Rio de Janeiro as Customer and New Business Development Manager coordinating also Marketing and External Sales areas.



Monica Dobre has been named to new sales positions at VAM® PTS. She will be an original equipment manufacturer (OEM) sales and service representative. Previously, she was in inside sales at VAM® PTS.



Douglas A. Fields has been named General Manager – Marketing & Development for V & M TUBES' new North America OCTG division based in Houston, starting May 16th, 2005. Previously, he was general manager of operations for V & M STAR's Youngstown, Ohio, facility and was responsible for all operating, maintenance and engineering departments.



Didier Hornet has been named Deputy Managing Director of VALLOUREC & MANNESMANN TUBES (V & M TUBES) new North America oil country tubular goods (OCTG) division starting March 1st, 2005. He will oversee all of V & M TUBES North America OCTG operations and will also be Chairman of the Board of V & M STAR which has plants in both Houston and Youngstown, Ohio.



Roger Lindgren has been named Chief Executive Officer (CEO) of V & M STAR starting March 1st, 2005. He will oversee operations of V & M STAR's plants in both Houston and Youngstown, Ohio. Previously, he was President and Chief Operating Officer of V & M STAR.



Joel Mastervich has been named General Manager of Operations for V & M STAR, starting May 16th, 2005. He will oversee operations of V & M STAR's facility in Youngstown, Ohio. Prior to coming to V & M STAR, he was Vice President—Operations at Ispat Inland Steel Company in East Chicago, Ind., where he served in various capacities from 1979-2001.



Brett Mendenhall has been named sales manager for V & M Tubes North America OCTG division, starting February 2005. He will be OCTG sales manager, responsible for both distribution and end-user accounts. Previously, he worked as both an inside and outside sales representative for North Star Steel.



Will Schilling has been named to new sales positions at VAM® PTS, starting February 2005. He will be major accounts manager for VAM® PTS and will be responsible for marketing VAM® PTS tubing and casing connections to oil & gas companies, distribution networks and original equipment manufacturers (OEMs) in the Southwest and Rocky Mountain areas. Previously, he was a sales engineer for another U.S. thread manufacturer.



John Slaughter has been named sales manager for V & M Tubes North America OCTG division, starting February 2005. He will be sales manager for coupling stock and drill pipe. Prior to joining V & M TUBES, he was distribution sales manager for another pipe manufacturer.



Allen Williams has been named sales manager for V & M TUBES North America OCTG division, starting February 2005. He will be an OCTG sales manager, responsible for both distribution and end-user accounts. Previously, he was a major account manager for VAM® PTS.

From left to right: Mark Byrne and Douglas McCormick



Douglas McCormick is Threading Line Manager, VMOG UK Clydesdale Plant.

'Since leaving school I have worked in a variety of segments within the manufacturing industry. I then joined VMOG UK approximately four years ago as the Methods Manager. One of my principal projects during that time was to manage the industrialisation of the VAM® ET connection. Soon after the successful completion of that project I was appointed as the Threading Line Manager, a position I have now occupied for 18 months and one in which I am currently studying for my MBA.'

Tim Ries: Vice President Manu

VAM® PTS Company manufactures and services the VAM® premium threads, primarily for the US market. Formed over twenty years ago as a joint venture between Vallourec and Sumitomo, VAM® PTS is capable of threading products ranging from 2 3/8" (60.33mm) to 16" (406.4mm) in a 225,000 sq. ft. covered facility located on 26 acres in Houston, Texas. Additionally, field services are provided from four field offices located in Louisiana as well as Texas. VAM® PTS holds an ISO 9001-2000 certification and ISO 14000.



Bio – Tim Ries – Vice President Manufacturing – VAM® PTS

I have had the privilege to work for VAM® PTS for the past 18 years and during that time have held management positions in quality, technical sales, engineering and production. For the past five years, I have had the responsibility to manage plant operations, which primarily serve the US market. The evolution of the US market has placed some challenging demands on manufacturing and as a result, the operational side had adapted be flexible and able to react with new products and services, all within a very short timeframe. It has been my pleasure to be a part of the strategic development, evolution and implementation of the processes, which has enabled VAM® PTS to meet these demands while providing the customer and the group valuable returns.

V & M REPORT: What is the vision of VAM PTS?

Tim Ries: The vision is simple – to be the premier threader in the US Market by the year 2007. This is a challenging vision because our competition has three times the number of threading lines as we do so that requires VAM® PTS to be very efficient in our operations, innovative in our approach and customer focused if we are to be successful in achieving this objective.

V & M REPORT: How are you organized to meet this vision?

Tim Ries: Our main office and manufacturing facility is located in Houston, Texas, which is a major center for the oil and gas industry. We currently employ approximately 190 people and have several threading lines, a coupling shop and field services that enables us to support the VAM® product lines. We have dedicated people that believe in our vision, the VAM® product and have a strong desire to serve the customer.

V & M REPORT: How are your objectives set to support this vision?

Tim Ries: Obviously, objectives are set to provide a return to our shareholders but many of our strategic objectives are dictated by the requirements driven by our customers such as safety performance, price of non-conformance and



level of service. To better service our market, we must pursue all objectives with vigor and differentiate ourselves from our competition with a higher level of service.

V & M REPORT: How was VAM® PTS able to achieve their outstanding performance in safety (security)?

Tim Ries: After traditional approaches to safety began to plateau, we implemented the Dupont Stop program, which focuses on the behavior and attitude surrounding safety. Now, five years later, the reportable injury rate stands at an all time low and has resulted in considerable cost savings. Additionally, it has been three years since our last lost time accident and the Group recognized this achievement as we received the safety (security) trophy in the last "Innovation Trophies" organized by the Vallourec Group. But it all started at the request of one of our best customers who set a very aggressive target for us to achieve.

facturing VAM® PTS



Inspection VAM® SLIJ-II pin end



Inspection VAM® SLIJ-II box end

V & M REPORT: How has the continuous improvement process assisted in achieving your objectives?

Tim Ries: TQM, Continuous Improvement Groups (CIGs) and bench-

marking have all played major roles in our progress at VAM® PTS. CIGs have contributed by focusing on specific areas where problems have been targeted for improvement. These teams have been successful due to strong

Bottom Row (from l to r)
Rick BENTLEY,
Marc BRIGNOU,
John OLIVAREZ,
Martin OLIVAREZ.
Top Row (from l to r)
Dave HERRMANN,
Tim RIES, Andy DONOVAN.

management support, proper methodology and the inherent diversity of the group make up. Benchmarking within the Vallourec group has lead to significant improvements in cycletimes, processes and safety.

V & M REPORT: What are some of the challenges that lay ahead?

Tim Ries: The US market can be demanding in terms of delivery and with our capacity limitations we must be efficient as well as flexible until our future expansion plans are implemented. The timing to increase staffing levels to match growth demands is critical from the standpoint of costs but, more importantly, meeting customer expectations. The future success and market share will depend on how well we manage and anticipate these demands. VAM® PTS is confident that we are well positioned to meet these challenges.





V & M STAR, Houston plant

V & M STAR Added-mean more benefits

It was three years ago on July 1, 2002 that Vallourec & Mannesmann Tubes (V & M TUBES) acquired North Star Steel Tubular Division and its production sites in Youngstown, Ohio, and Houston, Texas. For V & M Tubes it was a strategic investment in the USA...

For the oil and gas industry, the acquisition was a strategic investment in the North American OCTG market, differentiating V & M STAR from other steelmakers and adding value to customers. The acquisition of North Star Steel Tubular Division meant that V & M TUBES had its own independent production chain in the U.S., from steel production through seamless pipe manufacture to end finishing. "The acquisition of North Star Steel Tubular Division by V & M Tubes has

Melting scrap in the electric arc furnace (EAF)



made a huge difference for our operations because we're now owned by the company that invented seamless pipe making" says Doug Fields, V & M TUBES' new General Manager of Marketing & Development for the North American OCTG Division. "The chemistries, the procedures and tooling, all of the quality control instruments... all are now benchmarked with V & M Tubes.

"We've seen huge improvements in our setups and tooling design. V & M Tubes has the R&D facilities dedicated to just improving processes and investigating processes. Now we have access to that expertise and that means better quality tubular products for our clients."

The Youngstown plant utilizes a high-tech 85-metric ton electric arc furnace; ladle metallurgy furnace (LMF); and a 3-strand continuous caster. The round billets are loaded into a gas-fired, reheat billet furnace and heated to temperature. The billets are pierced and then rolled through the multi-stand pipe mill (MPM) and sizing mill, producing tubular products ranging from 5" to 10" OD.

The Houston high-tech heat-treat facility provides precise temperature control with gas-fired austenitizing and tempering furnaces and water quenching, allowing for production of high yield OCTG, coupling stock and line pipe grades required for today's critical environments.

"The Youngstown facility boasts the latest technology in electric arc furnace steelmaking and retained mandrel mill

pipe production while the heat-treat facility is a state-of-the art design with precise temperature control and water quenching," says Roger Lindgren, Chief Executive Officer for V & M STAR. "This allows V & M STAR to produce almost all of the high-yield OCTG, coupling stock and line pipe grades required for today's critical environments."

JUST-IN-TIME DELIVERY BIGGEST DIFFERENTIATOR

One of the strengths of V & M TUBES is the ability to deliver any product that the U.S. market needs today, either through domestic manufacturing or through import. Manufacturing seamless tubulars in North America as well as heat-treating, quenching, testing and threading, gives V & M TUBES a step up on other OCTG companies.

V & M STAR's North American operations are based on production cycles, allowing stock optimization for V & M TUBES distributors and cost savings for end users.

"Because we roll all common ODs every 35-40 days, our distributors know what sizes are being produced so they can manage inventory and won't need to book out more than a cycle at a time," says Ronny Clark, V & M STAR Vice President of Sales & Marketing. "It allows our distributors to stay closer to end users because forecasting tubular requirements on the end-user side is a challenge.

"Additionally, over 90% of our OCTG production is alloy casing and is produced primarily with one single green tube chemistry. Because of that, a customer can make a grade change from the time it leaves Youngstown until it arrives for heat treatment in Houston, helping to meet the needs of the end user."

Value Services for clients

And, with sister company VAM® PTS, the world leader in premium threading, V & M STAR can provide OCTG with plain end, API or VAM® premium threads.

V & M STAR ON-LINE ALLOWS TRACKING OF PIPE IN PROCESS

A well-received benefit for customers has been V & M STAR On-Line. The web-based application allows customers to follow an order through the processing stages once the material has been manufactured and either begins end-finishing in Ohio or heat-treating in Houston.

The On-Line system provides order status, shipment and invoice information and mill test reports for direct shipments to a customer. Visibility to customer-owned inventory stored at V & M STAR is also available.

Core distributors from each product line (OCTG, line pipe, coupling stock and standard pipe) have access to the application. The system is password-protected and allows access to only the individual company.

"Each user has an ID and password and most transactions are updated on the

Threading pipe



hour," says Karen Leone, V & M STAR Manager of Sales and Service. "The user can retrieve reports and other order documents and download them to their local PC as a .pdf or a .csv file.

"These files can easily be forwarded to another party as an e-mail attachment and the application allows for quick retrieval of important order information, reducing phone calls and paperwork for all parties."

R&D AND QUALITY INITIATIVES KEY CUSTOMER BENEFITS

As oil and gas wells go deeper with ever higher pressures, temperatures and more corrosive conditions, requirements for tubulars are increasingly severe. V & M Tubes offers a premium tubular product to fit any well condition and – with an extensive research and development program – is developing the OCTG of the future.

Tubular products are being developed with different grades of steel, chemical composition and mechanical properties such as hardness, fatigue strength, resistance to corrosion, burst resistance and collapse resistance.

V & M STAR's manufacturing processes ensure a higher collapse rating. V & M STAR's hot-rolled, hot-straightened manufacturing capabilities ensure minimal ovality and concentric wall thickness with minimal residual stress. V & M TUBES has developed sour-resistant grades with higher yield strength than API grades.

"Our products offer a much higher collapse resistance than API minimum through controls of our process," says Brian Himes, V & M STAR QA and Technical Services Manager. "We utilize pipe samples that are 8X diameter in

length to provide a guarantee of results backed up with actual testing."

Quality assurance is a key client focus for the North American Division.

"We offer pipe inspection that exceeds API requirement and is equivalent or exceeds most customer requirements," said Himes. "Providing inspection in our facilities provides the same level of inspection a customer would get themselves, without having to hire a third-party service, saving time and money."

Both V & M STAR facilities are ISO 9001: 2000; and ISO 14001 certified for environmental. "V & M STAR is licensed by API for its adherence to the Q1 program," says Himes.

A COMMITTED STAFF DEDICATED TO CUSTOMER SERVICE

Didier Hornet, V & M TUBES' Deputy Managing Director, North America Oil Country Tubular Goods (OCTG) Division, says V & M STAR is a leader in the seamless pipe industry because "we are considered by the market as the domestic mill providing the best quality with the best reliability."

Hornet says a competitive advantage of the company is its reliability, based on its quality level and committed staff. "The customer and the end-user are our core focus points," he says. "Our focus is not only to satisfy the end-users' needs today, but also to satisfy the end-users' needs [for] tomorrow."

"For sure," says Hornet, "we are not just supplying pipes to the market, we are supplying V & M TUBES seamless pipe and V & M STAR seamless pipe. And that's something to be proud of and marketed."

At V & M STAR, both the processes and people are in place.

Hot saw cutting pipe to specified length



Production of **threads** Protectors

Enrique Oliver started his professional career in TAMSA in 1984, He joined PRINVER in August 1990, as Methods manager, after 2 years in this position he took over Production responsibilities up to July 1994 when he was appointed for a professional training in VMOGF for 2 years. In 1996 he got back to PRINVER, assuming Methods management up to 1998 when he was appointed Quality and Technical Manager being responsible for Quality assurance, Field Services and Technical sales. Since January 2001 he has been serving as Plant manager (for threading and accessories unit) and recently appointed to be in charge of the Protectors Unit.



V & M Report: Since when and why does PRINVER manufacture Protectors?

Enrique Oliver: Originally protectors used to be purchased from a local supplier, in fact the only one at the time, but in 1995, our supplier got personnel problems and its business went into problems. In order to secure delivering of pipes to our customer, we were recycling and reconditioning protectors but also, the idea to produce them was evaluated and some molds were acquired by PRINVER for the tubing sizes, subcontracting the molding in Puebla and Mexico City (400 Km from Veracruz). It was our first contact with plastic business.

V & M Report: Why PRINVER decide to create a formal unit for Manufacturing of Protectors ?

Enrique Oliver: It was after we started to produce the first protectors (Tubing) that Mr Jean Mantelle, formerly Director of Subsidiaries and now retired, and Adan Sandoval, Managing Director of PRINVER, decided to launch a project to evaluate

benefits for V & M TUBES OCTG Division to supply protectors from PRINVER. This project was approved by Mr Pierre Verluca who was the Chairman of PRINVER at that time. Ambitious targets for protectors cost savings were defined as well as a 50% market share objective.

This project was leaded by Adan Sandoval with a team comprised of Derek Nelson (VMOGUK), Gunter Kretschmer (VMOGG), Nicolas Conversano (VMOGF), Ron Hammond (VAM® PTS), Enrique Oliver (PRINVER).

After launching of the investment, the 2nd part of capacity extension and consolidation of the business was under the responsibility of Edouard Guinotte who spent 3 years in PRINVER (2001-2003).

The total investment of this unit was 3MM Euros.

V & M Report: Where those objectives reached?

Enrique Oliver: Yes, the targets were completely reached in 2002, thanks to the efforts of all companies to develop the protectors but also to the good spirit to solve big difficulties we faced at the beginning of production because of the quality of protectors, methods of usage, difference in specifications, etc...



Tubes with protectors



Protectors samples

V & M Report: The metallurgy and plastics industries are very different. Do you have dedicated production teams for protectors?

Enrique Oliver: This is true, even though the mechanical properties and impact resistance obey to Physics and Chemical standards, manufacturing process, qualification and performance of materials are quite different, that is why we have developed a specific and dedicated organization in our Protectors Unit. We have also been assisted by experienced people as well as advisors for specific problems and developments.

V & M Report: What Human (Headcount, profiles , etc..) and material resources do you have for this production?

Enrique Oliver: At the very beginning we started with the Human, technical and material resources from threading plant, injection was subcontracted, threading of blanks (to fit to a specific connection) was done in the coupling shop. Today we have a separated unit, having 5 injection machines (+ 1 additional being installed to increase capacity), 3 CNC lathes for threading and 1 line of metallic shell manufacturing which is assembled with plastic blanks for Com-

posite protectors (Plastic + Metallic shell). A small testing lab which includes a Guillotine for impact testing, tanks of corrosion to simulate rain, vibration machine to emulate truck transportation, stripping unit to test resistance of protectors to handling operations on the rig (simulating lifting in the V door of rigs) and some other equipments to qualify protectors. Concerning Human resources, there is a technical team in charge of molding, process engineering, also a Production crew (48 people) in charge of manufacturing, maintenance, planning, shipping...

V & M Report: Define the range of protectors and which is your capacity?

Enrique Oliver: Current capacity is 550,000 sets of protectors/year, but with the molding machine we are installing, we will reach 650,000 sets/year, our range start from 2 7/8" up to 13 3/8" on API and VAM® connections.

V & M Report: Does your output cover the needs of others V & M TUBES entities in addition to your own? Which entities and what proportions?

Enrique Oliver: The V & M TUBES needs worldwide is about 1,000,000

set/year, but recently this volume has increased a bit because of the high activity in all OCTG entities. PRINVER is supplying about 40% of total needs of V & M TUBES entities, but our target is to reach 50%. Our Customers in order of sales are: VMOGF, VMB, V & M STAR, VAM® PTS, VMOGUK, VMOGG, VAM® PC and of course PRINVER.

PROTECTORS DESCRIPTION

Protectors are a very important element for the tubular, its main function is to protect threaded ends against impacts or damages that may occur when pipes are being handled in the plant during transport or at the rig. Protectors must protect sensitive parts of connections (seals & threads) from any damage originated while tubular are handled or transported.

Key Features:

- Adapted to thread and seal shape
- Withstand impacts in axial, lateral or angular directions equivalent to the energy generated by a bundle of pipes being moved at 1 M/sec
- Keep made up over a large range of Temperature (-42° to 60 ° C)
- Materials should resist to solvents & dope
- Protect against corrosion originated by heavy raining and weather conditions.

Petrobras: A customer's involve

Pedro Nabuco is graduated in Mechanical Engineering and started at the former Mannesmann S. A. mill in Belo Horizonte in February 1994, working as a trainee at the Plug Mill. Three years later, he moved to the OCTG department to work as a production engineer at the casing threading lines. After another 3-year period, in January 2000, he moved to sales to take over the newly created Technical Sales Department. Finally, in January 2003, he returned to production as the OCTG production manager, his current position.



V & M Report: What does Petrobras represent for V & M do BRASIL?

Pedro Nabuco: V & M do BRASIL (VMB) was born in the early 50's to satisfy the upcoming needs of the recently established Brazilian petroleum company – Petrobras. Since the beginning, VMB is strongly connected to Petrobras.

Today, after more than 50 years, VMB supplies products and services worldwide to an extensive list of oil companies. However, Petrobras still plays a very important role in our OCTG business. More than 50% of the OCTG invoiced in 2004 by VMB where for Petrobras. So far, the percentage in 2005 hasn't changed too much. The list of products includes tubing, casing and tubular accessories from 2 3/8" to 14", API and proprietary grades and VAM® connections.

From the left to right: Sérgio Ricardo (Quality), Antônio Fernando (Planning), José Henrique (Methods), Pedro Nabuco (Production) and Eduardo Barros (Maintenance) - managers at the OCTG facilities



New tubing quenching unit

V & M Report: Petrobras is reputed to be extremely demanding. How is this fact reflected at the production level?

Pedro Nabuco: Petrobras is really quite demanding, but not only on quality, timing, safety and environmental aspects. Brazil is a large country and Petrobras is operating from the extreme north to the south, onshore and offshore. Besides, Petrobras is active in other countries and is a world reference in deep-water operations. All these different environments and conditions, some of them extremely critical, require a full range of products and solutions being continuously developed and improved.

I believe we were successful on finding the opportunities behind the demanding circumstances. In the course of the years, the challenges have motivated VMB to become a high-quality product supplier, with a wide range of dimensions, grades, connections and services.

Investments of more than US\$ 22 million dollars were carried-out during the last 5 years at the OCTG facilities in Brazil, improving considerably our capabilities. As a response to the market needs, we became able to supply OCTG under the most stringent requirements.

V & M Report: Who are your contacts at Petrobras?

Pedro Nabuco: When we started to implement the alliance agreement with Petrobras in 2002, specific structures had to be created or reorganized. Fast, clear and transparent communication is crucial for the project.

Nowadays, we have teams working at local bases nearby each Petrobras' operational center. They are in daily contact with the personnel involved with rig planning, service contracts and shipping requirements.

The five VMB bases are coordinated from the mill by the alliance contract manager. A steering committee is meeting twice a year to evaluate performances and develop the business.

Production planning department at VMB has been reorganized to have people dedicated to the contract, consolidating all demands, monitoring supply chain and reacting in front of unexpected needs.

Technical Sales and Services department enhances the synergy with drilling and completion engineers, final users and rig crews.

There is also a very strong cooperation between both research centers on the development of the appropriate solutions.

ment in production



API tubing threading line

V & M Report: Are they ever directly involved in production-related issues? Could you give us an idea of this involvement through one or two specific examples?

Pedro Nabuco: Petrobras is deeply involved in our plant scheduling decisions and has a great influence on our R&D strategies.

I mentioned before that communication is a key factor for the alliance. Planning and anticipation abilities are supported by reliable information. However, we must also be flexible and able to react positively to the unexpected needs. It means that we may interrupt a production sequence to satisfy a certain emergency from Petrobras.

Petrobras is also involved in most of the product development projects at VMB. In some cases, they're participating directly in the project, defining qualification procedures or even sharing knowledge and resources from their research center (CENPES).

V & M Report: Have you developed any specific joint organization (data exchange, product qualification, quality control, etc.)?

Pedro Nabuco: This is one of the most interesting results from this partnership. We have realized how

can teamwork make things much easier and efficient. Both companies have several mutual interests on planning, logistics, lead-time, stock management, R&D, well engineering and services concerning OCTG, to mention just a few. The collaborative planning is probably the best example of teamwork, although joint organizations have been established all around with dedicated and permanent groups or temporary teams working on specific tasks.

V & M Report: How would you qualify this partnership with Petrobras?

Pedro Nabuco: I think the results so far are quite satisfactory. We have improved planning, supply chain and stock management activities. We have simplified contacts becoming much more customer-oriented. We have learned more about each other, gathering competences to be more efficient.

I believe that the next step should be a further development of tubular related services. VMB has the expertise and proven quality on field service, pipe inspection and repair.

It's an opportunity to increase the added value of the partnership, based on a win-win spirit. The potential for progress is very promising.

History, activities, key figures

The founding of Petrobras was authorized in October 1953, with the objective of executing, on behalf of the Federal Government, the activities of the oil sector in Brazil.

Over more than four decades the company has become the Country's leader in the distribution of oil products and is internationally acknowledged as one of the fifteenth largest oil companies in the world today. Under the new organizational structure model, the company now operates in four business areas - E&P, Downstream, Gas & Energy, and International. Leading the sector in the development of the most advanced deepwater and ultra-deep water technology for oil production, Petrobras was awarded the OTC prize twice, in 1992 and 2001. Petrobras is present in other countries, namely Angola, Argentina, Bolivia, Colombia, Nigeria, and the United States. Likewise, CENPES, the Petrobras research center, has one of the most advanced technologies in the world, and is internationally renowned for its high proficiency.

Petrobras in Numbers

NET EARNINGS (US\$ billion):	US\$ 30,797
NET INCOME (US\$ billion):	US\$ 6,559
INVESTMENTS (US\$ billion):	US\$ 6,551
SHAREHOLDERS:	131,577
EXPLORATION:	35 drilling rigs (22 offshore)
RESERVES (SEC CRITERION):	11.6 billion barrels of oil and gas equivalent (boe)
PRODUCTIVE WELLS:	15,834 (838 offshore)
PRODUCTION PLATFORMS:	98 (68 fixed; 30 floating)
DAILY PRODUCTION:	1,701 million bpd oil and LNG and 53 million m ³ natural gas
REFINERIES:	16
YIELD FROM REFINERIES:	1,709 million barrels a day - bpd
PIPELINES:	27,120 km

Data referring to the year 2003

V & M Report: Do you have any short-term projects aimed at further improving your relations with Petrobras?

Pedro Nabuco: VMB is working on a new location for our base in Macaé, the more active one. Investments on services may be included in this new pipe yard. In addition, the qualification of new products, such as VAM® TOP CLEANWELL® and expandable tubes are certainly of Petrobras' interest.

Joël Rignol - Drilling & Completion Department, Head of Well Section, Total

“CLEANWELL® opens up new prospects for us”

In October 2004, in the North Sea, at its K1A4 well, Total E&P Nederland B.V. run a column of 13% chrome tubes comprising 536 CLEANWELL® dope-free connections. Joël Rignol, the project instigator and manager, granted V & M REPORT an interview to discuss this world first.



From left to right: Arnaud Pardé, CLEANWELL® product leader at V & M TUBES and Joël Rignol

V & M REPORT: What would prompt a major oil company like Total to change its habits and switch to a new dope-free process such as CLEANWELL®?

Joël Rignol: There are 3 main reasons: First of all the TOTAL group strategy that consider the improvement of Health, Safety and Environment (HSE) as its highest priority. Secondly, the continuous process of improving our competitiveness leads us to seek for solutions that are simpler, more effective, more productive and overall less costly. Thirdly, is our willingness to take calculated risks: in order to succeed, the risks associated to a change must be minimized. These three reasons explains

why over the last ten years I have been associated to different tests of “green dope” that is greases without heavy metals or volatile organic compound (VOC).

V & M REPORT: Could you describe the lead-up to CLEANWELL®’s first application at your K1A4 well under actual service conditions?

Joël Rignol: Since 1995, I have been involved in several trials of “green dope” and it appeared to me quickly that the making up of 13%Cr material was a real problem, mainly due to the galling effect of this material. During the same period of time, the Authority of the different Countries became more and more concern by this type of pollutant (heavy metal, VOC) and even if present in small quantities, still counts for 30% of the grease’s weight, being a potential threat to our environment. Therefore, it appears to me that it was absolutely crucial to be proactive in the environment protection and at the same time being upfront of any future regulation.

In November 2001, when V & M TUBES’ OCTG Division came to see me to present a grease-free connection, I immediately accepted to trial this product. In May 2002, we carried out an initial test in the well K4BE3. We did learn a lot but from this first trial we could consider it successful due to the presence of foreign particles that contaminated the threads coated with CLEANWELL®. Then, a second opportunity arose to carry out further trials with the well K1A4, which had all the conditions required to repeat the trial: geographic proximity of the North Sea, high degree of interest demon-

strated by the Dutch Authorities, high standards of procedures, cemented liner, 13%- Cr tubing, etc...

V & M REPORT: What are your standard acceptance criteria for greases, and what specific characteristics of CLEANWELL® led to its choice?

Joël Rignol: Usually, grease is selected according to three criteria: first, its availability in the country where it will be used; second, the field experience we have with it; and, finally, the recommendations made by the connection manufacturer or threading company, and the service provider in charge of the making-up the pipe. In the specific case of CLEANWELL® we took into account the results of the runs performed with the carbon steel material tubulars, the extensive tests and trials performed in laboratory and the possibility to use a fall back option (standard grease) at any time, all these convinced us that it was an acceptable risk to perform the first full-scale run in our K1A4 well with 13%Cr material tubing joints. The fall back option, quick, easy and cheap to implement in case of problem was a key factor of this test especially when you consider that a rig costs range from 100,000 to 150,000 euros a day. Generally speaking, you also need to understand that the use of CLEANWELL® involves a change in work practices on the rig. Traditionally, the storage (long term) grease is removed and the make-up grease is applied. If the latter is contaminated by any foreign particles, it can simply be wiped off and clean grease is reapplied. With CLEANWELL®, you don’t have any contact with the lubricant that has been directly applied on the production line after factory threading. Although simpler to use, it does mean that the coating must be protected from any external contact from the moment it applied in the plant to the moment the connection is made-up at the well. We learnt a lot about this particular point during our first trials on K4BE3. In fact,

CLEANWELL® is a registered trademark of Vallourec Mannesmann Oil & Gas France

E&P Nederland B.V.:

in light of these results V & M TUBES developed a specific protection system (see box page 25).

V & M REPORT: What was the Dutch authorities response to this first use of CLEANWELL®?

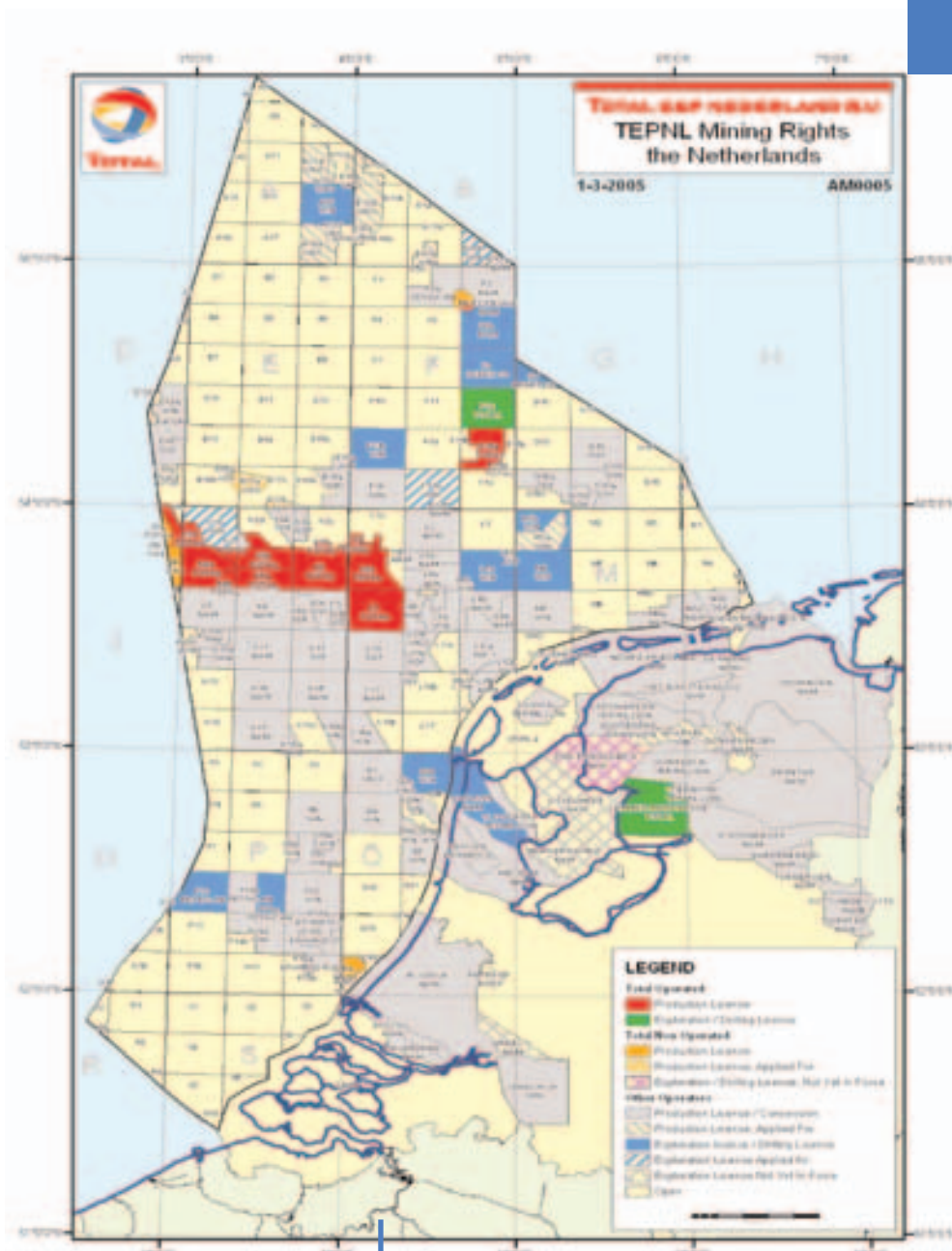
Joël Rignol: We must thank the Dutch Mining Authorities for the keen interest they showed and for the support they provided us throughout this project. Our contacts at Staatstoezicht op de Mijnen (SODM) understood perfectly that we wanted to skip the green greases step and go straight to CLEANWELL®. Moreover, they allowed us to use traditional products for the few months needed to verify and implement this new solution, which would ultimately lead to greater protection of the environment, and improved health conditions for the employees who have to work with these types of greases.

V & M REPORT: What were the test conditions for lowering the tubes into the well?

Joël Rignol: The CLEANWELL® test was carried out using our standard tubing - i.e., 4 1/2" L80 13% CR 12.6ppf VAM® TOP. We were able to successfully make up 536 connections without grease, thereby proving that this solution was fully operational in offshore conditions and for steel grades difficult to use with green grease. After several months of gas production from this well, the absence of any leak enables us to consider this operation as a complete success.

V & M REPORT: How do you view the cooperation between TOTAL and V & M TUBES on this specific project, and how do you see the future?

Joël Rignol: From the beginning, a real team spirit was developed around this CLEANWELL® project. This was very easy as this project was based on a simple win-win situation: TOTAL applying its strategy of continuous improvement especially regarding HSE, and V & M



TOTAL E&P Nederland b.v. Mining rights

From left to right: Pieter Marbus, Supply Base Manager and Jeroen Hunia, Completion Superintendent, at TOTAL E & P Nederland B.V.

TUBES seeking to demonstrate its product's worth through a first application under actual service conditions. Cooperation between the parties was all the more necessary in that CLEANWELL® implies, as I said earlier, a major change in tubular handling practices. It was, therefore, essential that all those involved, from the factory floor to the drill rig, be aware of what was at stake in this joint project. Aside from our regular contacts, we visited V & M TUBES production lines, and V & M TUBES dispatched a team of two CLEANWELL® specialists and two site engineers to our drill rig during the implementation phase. Their role was to ensure that all operations went smoothly and, above all, to make sure that no one, out of habit,

removed the thread protectors to apply grease! We will now be focusing on standardizing the use of this new product in our operations. CLEANWELL® is a registered trademark of Vallourec Mannesmann Oil & Gaz France

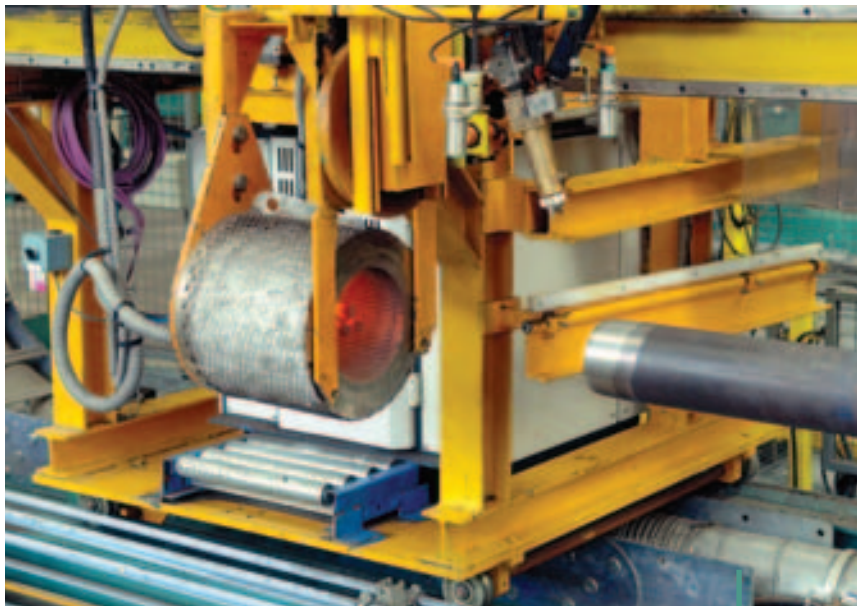


CLEANWELL®: from development

As time goes by, it is becoming increasingly apparent that CLEANWELL® will be quite a revolution in the oil industry. In addition to its ecological virtues, it's a "ready-to-use" product that replaces both protection and screw lubricants, thereby cutting out a certain number of site operations. After a series of conclusive tests on complete columns now under production, it is entering the manufacturing phase.



Enrick Legrand in front of Casing pipes with the CLEANWELL® option



Tubing devices: Heating and spraying

Head of Tube Unit Methods at the Aulnoye plant, Enrick Legrand has been responsible for authoring the specifications that will enable the Technical Services to implement the process for CLEANWELL® application on VAM® thread connections. "In this document," he explains, "we have listed all quality, productivity, safety and cost requirements, along with the technical feasibility inherent in any manufacturing process. We then sought a spray system. Our final choice was for a "stan-

dard" machine to which we made significant alterations to bring it into line with the requirements for CLEANWELL®. This new lubricant is free of all solvents and sets at ambient temperature, and has a texture resembling solidified honey. We had to develop a device to keep it hot – and so liquid – throughout the entire circuit in the spray machine and when it hits the ambient air, before coming into contact with the connection. By limiting the distance between the nozzle and the substrate, also heated, we managed

Up to 10 screw/unscrew operations!

Developed by Condat, a French company specializing in industrial lubricants, from specifications compiled by V & M TUBES, CLEANWELL® is packaged in 20-liter steel drums that fit directly on the spray machines. Integrating an advanced chemical formula, it is applied very sparingly on the thread at the rate of about 20 to 40 g per m². This small quantity is enough to ensure the connection is protected against corrosion, and guarantee up to 10 screw/unscrew operations!

In the event of an incident...

Although applied in final form at the plant, and then protected under a cover through to its being screwed on a tube column, CLEANWELL® is not exempt from the risk of contamination from external agents, especially since it involves a change in rig working habits. Given this potential risk, V & M TUBES has developed a product called "Repair Kit" to allow specific operations (pressure testing, refurbishing).

to manufacture



Lubrifiilm spraying operation



Tubing 13% chromium: Pin field end

to obtain a film that is perfectly even, smooth and transparent, which makes it easier to check the thread visually on site.”

A COMPLETE LINE

Since June 2004, the Aulnoye plant has been in a position to manufacture dope-free VAM® connections on an industrial scale in compliance with the oil industry’s new ecological requirements, and customer quality performance specifications. “In the past few months,” explains Enrick Legrand, “we have delivered a number of tubing and

casing test orders. As the results have been very positive, we are now booking orders for much larger volumes. At the same time, with our R&D services, we are working on extending the CLEANWELL® line, especially for casing, so that later in the year we are in a position to offer a complete line including diameters above 13 3/8”. The success of the industrialisation of this new product is a result of solid team work, where each one plays a vital part so as to obtain maximum performance and customer satisfaction.

Key dates

- 2002: first tests
- Early 2003: Product characteristics defined
- End 2003: installation of manufacturing equipment
- July 2004: first significant volumes manufactured
- October 2004: successful experiment on K1A4 (Total)
- End 2004: major orders to a North Sea customer (tubing and casing)

Particularly ingenious protectors

The most ingenious ideas are often the simplest, as illustrated by the specific protectors developed for CLEANWELL®

Its slightly tacky texture is perhaps the only criticism that might be leveled against CLEANWELL®. It is perhaps also one of its main strengths, as it can be applied in very small quantities and adheres perfectly to the thread. It also means that it has to be protected, from the moment it leaves the production line through to being screwed together on site. Given that it must not be exposed to the atmosphere until this final stage, V & M TUBES’ s R & D teams had to find a way of preventing the risk of external pollution when pipe lengths are measured on the rig. The solution is as simple as it is ingenious: the specific CLEANWELL® protectors have an external marker indicating their depth making it easy to precisely measure the dimension without having to remove the protector... As simple as that!

Replacing protective grease with CLEANWELL® has led to one other major change. The grease used to form a crown preventing pollution from getting in between the connection and its protector. This crown has been replaced by a sealing joint at the open end and bearing on the tube’s external wall. Similarly, for applications requiring a check of the internal diameter (drift), a removable cap has been fitted so that the reading can be made without affecting the CLEANWELL®.

While the solutions developed so far have proven satisfactory, research on these protectors is ongoing. In partnership with its main suppliers – V & M TUBES is currently working on unique concepts that will provide even better solutions to the new requirements for CLEANWELL®, namely, protect the thread and the lubricant while facilitating on-site wear inspections.



VAM® Documents on the Internet

As of early 2005, companies holding a VAM License (there are now some 120 worldwide) to manufacture our premium threads now have a secure online access to technical documents.

“e-Dispatching” was first used with documents related to VAM® TOP, the new OCTG standard connection. It has now been extended to VAM® FJL, VAM® SLIJ-II, DINO VAM® and VAM® rotary connections (VAM® EIS and VAM® TAURUS). Very soon, documentation for the whole VAM® product line will be available.

Depending on their type of Licence and qualifications, users receive certain rights providing them with access to a specific area online, their OpenPortal area.

In comparison with the old diffusion system through DHL, e-Dispatching presents several clear advantages:

- **e-Dispatching is fast**

Product drawings, thread profiles, and gauging procedures are available instantly after publication. No loss of time in standard mail delivery.

- **e-Dispatching never stops**

OpenPortal is available 24 hours a day, 7 days a week. If Licensees request documentation on Sunday night, they will get what they need on Sunday night.

- **e-Dispatching prevents Licensees from using obsolete documents**

When we put online a new revision for a drawing or anything else, every user who has the previous revision will receive an automatic e-mail notification of the existence of the new document.

- **e-Dispatching allows for traceability**

All documents downloaded by a Licensee contain a watermark which indicates the Licensee name, VAM® License number, date and time of download.

At any given time, VAM® Services knows which of the



Licensees are working on a given document and which documents have been used by a given Licensee.

- **e-Dispatching protects confidentiality**

To access their OpenPortal and download VAM® documents, Licensees must plug their VAM® USB iKey into their computer and type in their PIN code. Documents are in Acrobat PDF format; only printing is authorized.



- **e-Dispatching is cost effective**

1 publication on the Internet saves making 120 copies and 120 diffusions via DHL.

Less paper, less usage of the copy machine, less DHL, fewer human resources expended...

In 2004, we sent approximately 50,000 documents via DHL, and invoices for DHL reached 15,000€. Thus, this investment will pay for itself in less than 4 years.

- **e-Dispatching makes document management easy for Licensees**

Licensees no longer have to devote their time to managing VAM® documents. They no longer have to store VAM® drawings and profiles. Each time they receive a VAM® job, they go on the Internet and simply download and print the documents required. When the job is over, they can destroy both the files and the paper. They can then return back to OpenPortal for the next VAM® job.

Meet V & M TUBES at the Offshore Europe 2005 – Oil & Gas Exhibition & Conference



V & M TUBES will be present at the OE2005 exhibition in Aberdeen from September 6th to 9th (Stand 563). Offshore Europe is the eastern hemisphere's largest E&P event. With a record of accomplishment spanning more than 30 years,

Offshore Europe has proven itself to be one of the most influential, vibrant and significant events in the petroleum industry calendar.

In 2003, 26,337 key industry visitors from 104 countries visited Offshore Europe over four exciting days and the event featured more

than 1,400 exhibitors from 34 countries. V & M TUBES will be pleased to welcome you at stand 563, where we will be showing the most innovative solutions and the latest in advanced product technology such as VAM® TOP - the industry reference for Premium Connections, CLEANWELL® - a dopefree solution applied on some newly developed threads of the VAM® family, VAM® ET, Riser products and many others... Moreover, we will focus on particular areas and application solutions through conferences.

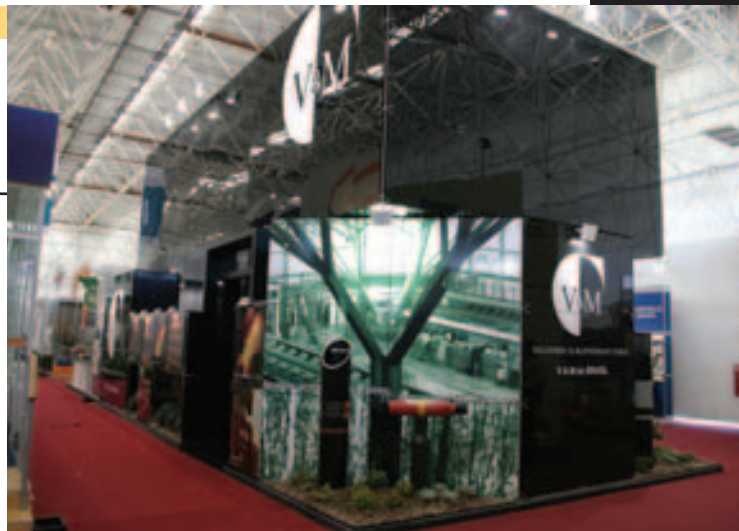
We look forward to meeting you!

V & M do BRASIL participation at the “Brasil Offshore 2005 Show” in Macaé

V & M do BRASIL S.A. was present at the Brasil Offshore 2005 Show in Macaé. Macaé is considered as the Brazilian Oil Capital, representing more than 80% of the country's production. It is one of the city where V & M do BRASIL S.A. has a base to attend Petrobras for the Star Alliance contract.

This is the second largest petroleum show in Brazil. This year, 33,000 people visited this exhibition over three days and the event featured 508 exhibitors, in a total area of 24,515 m².

All the main Majors and Independents oil companies, as well as Petrobras have participated as exhibitors. The show was considered as a success.



“Recovering and Recycling America’s Resources”

The recycling waste streams policy at VAM® PTS is crucial in the frame of our ISO 14001 certification process. Our success in this endeavor has already resulted in environmental protection and reduced our disposal costs. We currently recycle more than 50% of the waste items generated:

1 - PAPER CARDBOARD AND OTHER PAPER

The recovered paper accounts for 37% of the raw material used to make new paper and paperboard packaging products. Every ton of paper recycled saves more than 3.3 cubic yards of landfill space.

2 - SANDBLAST MEDIA

The sandblast media produced at VAM® PTS is currently reused by the Texas Department of Transportation for building highways and interstate system.

3 - OILY FILTERS, OILY RAGS, ABSORBENTS, BRUSHES, GLOVES ETC.

The process used to recycle these items is a closed-loop shredding process that keeps in commerce three materials found in these items (Steel, Oil and Paper). The STEEL is separated out, blended and sent to steel mills for new steel products manufacturing. The OIL is filtered, treated and reused as industrial boiler fuel. The PAPER MEDIA is reused as an alternative fuel for cement manufacturing.

4. SOLVENTS

The petroleum naphtha generated at VAM® PTS are collected and reused in the production of roof lapping compounds.

5. BATTERIES

The lead-acid batteries used at VAM® PTS (such as automotive, industrial lift truck, golf carts, etc.) are recycled to make new batteries and other products.

6. COOLANTS

The used coolants are sent to a qualified recycling company to undergo a distillation, filtration process and a corrosion inhibitor treatment which transform them into recycled products.

7. AEROSOL CANS

Aerosol cans are depressurized and recycled as scrap metal.

VAM® Licensees Awards 2004

VAM® Services is pleased to reward, as we used to do every year, 5 VAM® Licensees in recognition of their outstanding contribution and the high quality achieved in the manufacture of VAM® Products according to VAM® Services standards. For the year 2004, the winner are:

- **The best overall licensee within the network**

Baker Hughes Ltd, Scotland
At East Kilbride plant

- **The licensee who has made the best progress in quality for the year**

CAMCO Schlumberger WCP, USA
At Houston plant

- **The best new comer licensee of the year**

Caspian Downhole Services LLP, Kazakhstan
At Atyrau plant

- **The best licensee within the threading facilities**

Vallourec Mannesmann Oil & Gas UK Ltd,
Scotland
At Clydesdale plant

- **The special jury prize**

Wasco Oil Service Company (Nigeria) Ltd,
Nigeria
At Port Harcourt plant

VAM® SERVICES and all the V & M TUBES teams convey their congratulation to you one and all!



DEEPLY ROOTED IN INNOVATION

The world of Oil & Gas exploration and production is full of technical challenge. Our mission within V & M TUBES is to develop the most innovative and competitive solutions to our customers' challenges.

DEEP SEA

V & M TUBES has developed a full range of cost effective threaded and coupled solutions for all your drilling and production riser applications, with excellent fatigue performance of materials and connections.

HP-HT

V & M TUBES has continually demonstrated its leadership and expertise in the highest profile "High Pressure-High Temperature" projects around the world. V & M TUBES offers comprehensive solutions including "tailor-made" heavy wall pipes with unsurpassed Sour Service performance and industry leading VAM Premium connections.

EXPANDABLE TUBULARS

V & M TUBES metallurgical know-how and recognized premium connections expertise: a winning combination for expandable casing. VAM® ET: the only field proven 13%Cr gas-tight connection is at the cutting edge of Solid Expandable Technology.

CLEANWELL®

The Environment is our future! V & M TUBES has developed a complementary technology for VAM® TOP connections that improves not only Storage of OCTG, Safety and Rig Efficiency, but also minimises Waste. With CLEANWELL®, no thread compound is ever required!



VALLOUREC & MANNESMANN TUBES
OCTG Division

WORLD LEADER IN PREMIUM CONNECTIONS

www.vamservices.com