

# THE MASTERS OF LOW FRICTION

Millers Oils is one of those independent British technology companies that has won plaudits and awards for its revolutionary products. It is now putting some even more advanced lubricants on the market as **William Kimberley** discovered when he visited their head office in West Yorkshire

**W**HEN managing director Nevil Hall and technical director Martyn Mann received the Race Tech award for the Most Innovative New Motorsport Product at the 2009 World Motorsport Symposium, it was a dream come true for them. Having worked long and hard as a small independent British company battling against the odds, the fact that their revolutionary lubricant was being recognised in the motorsport world was the icing on the cake.

A family owned company celebrating its 125th anniversary this year, Millers Oils has always been located in Brighouse, West Yorkshire. Established in 1887 by John Watson Miller close to the site where the company currently resides, it started as a supplier to the textile industry with its weaving oils and also lubricants for steam engines but then shifting its focus as petrol and diesel fuels started to come onto the scene.

When one thinks of an oil company, the word multinational and thousands of employees around the world come to mind. In this case, nothing could be further from the truth. Millers Oils has always remained a relatively small business - it currently employs just 120 people. One thing has changed in the last few years, though, and that is it has turned from being a family-run business, although the family is still represented on the board with Andrew Miller as the non-executive chairman, into a streamlined company run

by professional managers.

One of these is Martyn Mann, who has been in the oil industry for more than three decades and has been instrumental in driving the business forward with some groundbreaking products, the nanotechnology lubricants in particular. However, he has been supported in his quest by joint managing directors Nevil Hall and Steve Woollven who between them have brought the company into the 21st century.

"It was in the black from the point of view of cash when I joined the company in 2002 but there had not been any investment in IT, for example, and so not many members of staff had a computer," says Hall. "Also, if you were paid monthly, you would have received a handwritten payslip written by the finance director! The family had built a strong, highly-regarded business that was ready for pastures new and they recognised that new, younger management was the way to get there."

Top priority was given to internal investment, not just in IT but in transforming the building itself while also ensuring that a great deal of resource was put Mann's way, which included the investment in a new R&D centre that came on stream in the earlier part of this year.

"Martyn had been investing in the laboratory more or less from the time I had started with at least one new piece of equipment a year with no upper limit on price," says Hall. "We could see that there

was a real benefit in this. There was also real potential in being independent especially with the trend of the multinationals pulling their R&D capabilities out of the UK. We were therefore careful to strengthen the technical department which has expanded over the years from five people to nine while over 90 per cent of what we sell is blended by us. We also knew that innovation was going to be our salvation which in turn led us to developing a motorsport brand. We had already been developing motorsport products for around two or three years before I joined and it was quite rightly regarded as a halo activity for our mainstream industrial business."

Half of Millers Oils' turnover is accounted for in the industrial world - supplying maintenance lubricants, general industrial oil and grease and engineering lubricants - while another 30 per cent is taken up by the commercial vehicle industry. The automotive industry accounts for the rest but is growing. "The business has grown from the £11.3 million turnover when I joined 10 years ago to well over £26 million this year," says Hall.

## THE 'BOUTIQUE' APPROACH

When it comes to exports, Millers Oils is still a small player with its export sales valued at around £2 million. "It's growing," maintains Hall, "and we have invested in distributors and people internally to support it and my colleague Steve Woollven also comes from ▶

**BELOW** The newly opened R&D centre





**ABOVE** Miller Oils' investment in motorsport continues with its sponsorship this year of the Czech Jipocar Racing Team in the World Rally Championship

an export background.

"Europe is a key market for us but after a couple of false starts we are now back on track. The other hot market for us is the Far East where China and Hong Kong, Malaysia and Taiwan have quite an appetite for British lubricants. I think it's historic but we fit the mould and their view of what a British lubricant should be like.

"There is also an opportunity in North America but we've got to get the marketing right and there are also insurance implications which have been offputting. However, what we've seen of the technology in the US suggests there are opportunities for a more sophisticated approach to lubrication.

"One thing, though, is that we will never compete on price. Our aim is to be the specialist 'boutique' lubricant manufacturer and that is where we have found our strengths – and it's largely being driven by our work in motorsport. The real benefit is that it's a jumping off point when we visit a number of other industries. If, for example, we talk about saving energy in motorsport, how that translates to a truck company is pounds and pence. A three per cent saving in fuel costs for a truck using our lubricants travelling over a million miles

is highly significant."

"As it's an act of faith when a customer buys oil, motorsport is also very useful in amplifying our message. When Martyn came up with the nanotechnology gear oils in 2008, it was something we could prove out and publicise with our involvement both with several teams in the British Touring Car Championship as well as our involvement in rallying.

"We'd been in the BTCC for a year before we launched the nanotechnology gear oils and the teams using it found that they were getting three race weekends out of the gearbox compared to the one they were getting before," continues Hall. "At the end of the second race they were taking the gearbox apart but still finding it in spec and so managed to get another race weekend out of it. This not only meant a reduction in cost but also in time.

"Another factor is that it reduced the risk element. Every time something is taken apart, there is always the danger that it can be misassembled and something like a circlip put back the wrong way round. If this process can be eliminated, so much the better."

Hall then gives rally driver Callum Black as

an example. "Last year we sponsored Callum who told me that where he would normally expect to rebuild his gearbox at least twice during the season, last year it just wasn't necessary. This year we are fully supporting him again as he contests the British Rally Championship."

#### **A LUBRICANT IS A LUBRICANT?**

When it comes to lubrication, though, both Hall and Mann acknowledge that there is still a great deal of work to do as the general perception is that a lubricant is a lubricant. What has astonished them is the number of times they have visited even high-end engineering companies in different industries that put a huge amount of effort into developing a new product but then fail to see the value of ensuring that it is complemented with an appropriate lubricant rather than an off-the-shelf product.

"It's really quite extraordinary how some engineering companies spend a great deal of time designing and developing an engine or gearbox but then, say, use an off-the-shelf lubricant from a local DIY store," says Hall. "However, this is where the research undertaken by Martyn and his ▶

team pays dividends as we can show customers a methodical test process that validates our claims."

To illustrate the advances in low-friction technology being developed by his company, Mann showed Race Tech one of their test stations where a Formula One transmission oil was being evaluated. As he explains: "For example, in one test – a ball on a reciprocating plate that can be loaded up to four gigapascals (GPa), which is about double a Formula One transmission, we ramp the temperature up from a base of 40°C by three degrees a minute to reach 160°C. The coefficient of friction, which in this case is 0.17 as it's a standard engine oil, is displayed across the bottom while the film between two components is measured by electrical resistivity that in this instance shows an average film strength of 84 per cent over the test period.

"If we then look at a racing oil from another manufacturer, it shows that the coefficient of friction drops to around 0.11 and has a film strength average of around 75 per cent. In testing a leading competition



brand, we see in our tests that the coefficient of friction drops below 0.1 while the film strength is all over the place but averaging 34 per cent. On another race oil, the coefficient of friction can be seen to drop away when the temperature goes higher than 140°C, which means that it's quite extreme before any benefit can be seen.

"Our current triple ester CFS oils have a good coefficient of friction figure and a film strength of 98 per cent but what we've come up with in our new range is the coefficient of friction starts to drop away at around 75°C and goes down to 0.06, which

is the lowest we've achieved while the film strength is 98 per cent. This means that we've achieved almost half the friction but retained the oil film."

Having won the award for its nanotechnology oils, Millers Oils has now taken a further step in this direction with its new CFS NT Nanodrive engine oils that it launched at the Autosport International show in January. Until now its triple ester CFS engine oils have been available in viscosities from 5w40 up to 10w60 but the new Nanodrive oils are available in a wider range of viscosities with the addition of 0w20 and 0w30 oils designed for shorter duration or qualification races. The whole range is designed to reduce friction, especially at higher temperatures and loads.

#### GREAT EXPECTATIONS

"The sort of feedback we are getting so far exceeds our expectations," says Hall quoting a test undertaken by EB Motorsport which conducted a back to back test with a 1973 Porsche 911 RSR that compared Millers Oils CFS 10w60 with the new CFS 10w60 NT Nanodrive. The engine was prepared by Tuthill Porsche of Wardington, Oxfordshire, UK and the rolling-road test was independently conducted by Bob Watson Engineering.

The first test, running with CFS 10w60 showed a normalised power output (DIN 70020) of 268 bhp. After changing the oil for the new CFS 10w60 NT and running the engine fully up to operating temperature, the second power test showed a normalised power output (DIN 70020) of 283 bhp. Peak torque of 307 Nm showed an increase over 295 Nm as measured at 5340 rpm. Changing to the new CFS 10w60 NT Nanodrive engine oil saw a 5.6 per cent increase in power and 4 per cent increase in torque.

"Up to that point we had been seeing anything from two and a half to three per cent which we thought was pretty good," says Hall, "but if the 5.6 per cent increase is the sign of things to come, then it's very interesting technology.

"The issue now for us is to get this technology out into the mainstream. We want to become known as the masters of low friction, a term coined by Chris Aylett, CEO of the Motorsport Industry Association, and these products will help us achieve that ambition." **RT**



**ABOVE** Millers Oils directors: Martyn Mann (above), Steve Woolvenn (right) and Nevil Hall (left)

