



## Concept car gets PBR touch | 3

### Inside this issue: (click on links below)

Braking new Territory	2	The long and short of it	5
Concept car gets PBR touch	3	AP business profile	5
Look what's new	4	Oz industry update	6
AP new business	4	Monash award	6
Sending waste water skyward	5	New appointments	6

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PBR design award 6

## Introduction



Grant Anderson  
President PBR International

Welcome to the latest edition of *On The Move*. As we move through 2004 it is pleasing to note the number of new PBR programs that will be making their way to market later in the year. We are very excited to be involved on new programs for Ford and DaimlerChrysler in North America and for the new Ford Territory in Australia.

In this edition of *On The Move* we take a look at our latest concept project, the brake system for Toyota Australia's radical Sportivo Coupe which was well received at the recent Melbourne Motor Show. Also featured is a summary of new programs for 2004 and a more detailed glimpse of the brake system for the new Ford Territory.

The Australian Automotive industry is very healthy at present with strong local sales

and increased overseas demand for Australian designed product. For those of you interested in monitoring the Australian industry we have added a new section to *On The Move* to help you stay in touch.

We are always keen to understand your thoughts about *On The Move* and our efforts to keep you, our key partners, up to date with our activities. I would encourage you to contact us on [newsroom@pbr.com.au](mailto:newsroom@pbr.com.au) with any comments you may have.

Thank you for allowing us to keep you informed.

Grant Anderson

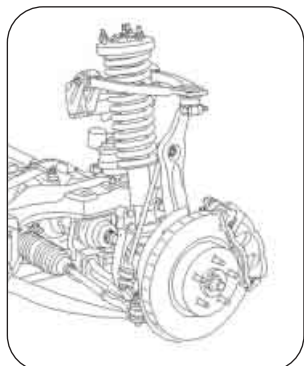
## Braking new Territory



develop a brake system for the Territory that would offer a new level of braking performance.

The Territory brake system incorporates PBR aluminium twin-piston front calipers, aluminium single-piston rear calipers, PBR pillar-vented front and rear disc rotors, single-shoe Banksia park brakes and upgraded actuation.

**“This very successful final result reinforces PBR’s capability to take full control of brake system design and development.”**



The release of the new Ford Territory in April 2004 will provide the Australian automotive industry with one of the most significant local market additions in recent times. The Territory, designed and developed by Ford Australia will be the company's first major release of a locally produced all-wheel-drive (AWD) model in Australia.

The new Territory has been developed by Ford in response to extensive market research designed to better understand and respond to the needs of today's consumers.

As the major supplier of brake systems into the Australian automotive industry, PBR Australia was called upon to

The combination of these elements forms a brake system designed to meet the very demanding performance criteria established by the design team at the commencement of the project. This very successful final result reinforces PBR's capability to take full control of brake system design and development.

Based on the reception already received at the various Australian motor shows the new Ford Territory looks set to be a winner.

# Toyota concept car gets PBR Performance touch



PBR's ePark system - brakes at the touch of a button

Toyota Australia has set car enthusiasts buzzing with the release of its latest concept car, the Sportivo Coupe, at the Melbourne Motor Show earlier this month.

The Sportivo Coupe is something of a showcase for Toyota Australia's Melbourne-based design, engineering and prototyping capabilities coupled with the latest technologies available from local suppliers.

The creative concept for the new car included input from 14 to 18 year olds, providing a unique insight into the personal mobility priorities of the next generation of car buyers.

"We wanted to develop a vehicle that was based on the locally manufactured Camry, but which focused more on younger people," Toyota Australia executive director sales and marketing Dave Buttner said while launching the car at the Melbourne Exhibition Centre.

"And we wanted to display to the world the capabilities of our local Toyota designers and engineers, as well as local suppliers, and to grow their expertise."

PBR was called upon to develop a high performance brake package that would compliment both the vehicle's higher level of performance and the emphasis on future technology.

The powerhouse behind the Sportivo Coupe is a turbocharged version of the 2.4 litre 2AZ-FE engine introduced with the Australian-built Camry launched in 2002. The result is a power output increase of 60 percent from 112kW to 180kW at 5500rpm and 305Nm torque at 4500rpm, an increase of 55 per cent over the standard engine's 218Nm.

The final PBR Performance brake package consists of massive 380mm diameter

**"PBR was called upon to develop a high performance brake package that would compliment both the vehicle's higher level of performance and the emphasis on future technology."**

ventilated and cross drilled rotors with six-piston aluminium monoblock calipers for the front and 355mm rotors and four-piston aluminium monoblock calipers for the rear.

In working with the car's design team PBR also contributed to enhancements in cabin design by developing a version of their "ePark" electronically actuated park brake system. The ePark system increases cabin design flexibility by replacing the awkward handbrake lever with a small button on the centre console.

Other technology to be featured through the Sportivo Coupe includes a unique Friend-

Finder facility, integrated Bluetooth technology, a reconfigurable speedometer and driver's I.D. recognition which would replace the conventional licence plate.

PBR's involvement with Toyota and the Sportivo Coupe project extends a relationship focussed on concept vehicle design which commenced with the Toyota X-Runner vehicle launched at the 2003 Melbourne Motor Show.



# Look what's new in 2004



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Some new faces are set to hit the market in 2004 featuring PBR lightweight brake technology. Shown here are some of those faces as seen at the recent North American International Auto Show in Detroit.

Expanding PBR's business through Ford USA will see PBR brakes included on the Ford 500, Ford Freestyle and Mercury Montego. The Ford 500 and Mercury Montego are fresh new faces in the US midsize sedan market. With basic platforms stemming from Volvo's S80 and XC90 models, they bring to the market impressive advances on safety and structural rigidity. Both Ford sedans will be offered with the same 3.0 litre Duratec V6 rated at 200 horsepower with a standard six-speed automatic. They will also break some new ground for the category by including all-wheel drive.

The Ford Freestyle continues their assault on the SUV/Crossover segment. The Freestyle is a three-row-seat crossover with high levels of safety gear and plenty of room. It will come standard with a 200 horsepower V6 and optional front or all-wheel drive.



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DaimlerChrysler's first taste of PBR technology will come via the new Dodge Magnum and Chrysler 300 vehicles. The Dodge Magnum is a station wagon with attitude. Geared to the performance market, the Magnum is built on an all-new rear-wheel-drive Chrysler platform and features a Hemi V8 under the hood. With 20-inch wheels and a cockpit that boasts competition gauges and drilled aluminium pedals it will certainly turn some heads.

The 2005 Chrysler 300 ups the anti on a Chrysler classic that was reborn in the late 1990s. The new Chrysler 300 design is set to challenge the prestige end of the market with four models on offer. The flagship Chrysler 300C comes complete with a 5.7litre Hemi V8 and five-speed Mercedes-Benz transmission.

One face that's new, but very familiar to PBR, is the all-new 2005 Corvette. PBR has been stopping the Corvette since 1983 and is proud to continue that relationship with the latest release. The new C6 boasts a new base engine with 50 more horsepower, new suspension, new tires and a whole array of new electronic gadgets.



6.

1. Chrysler 300, 2. Mercury Montego, 3. Chevrolet Corvette, 4. Ford 500, 5. Ford Freestyle, 6. Dodge Magnum

# AP makes way for new business



AP Italia has recently opened a 5,000 square metre extension to its production facility in Cairo Montenotte, Italy.

This new addition follows the acquisition of 2.1 hectares of land adjoining the

premises in 2001 to cater for the company's long term growth plans in the European market.

The new facility will be used for the production of additional drum brakes and park brakes as a result of new contracts awarded through Fiat, which commence production in 2004. In addition, it will

also accommodate new contracts with Fiat, Ford, Land Rover, Opel, Renault and Toyota, all of which will commence production between now and 2006.

When all of this new business is in full production the plant will generate an additional 1.5 million drum and park brakes annually.



## Going Green

### SENDING WASTE WATER SKYWARD

The environmentally friendly treatment of waste water is a key consideration for all PBR's production facilities.

Recently the PBR Columbia site in South Carolina, USA, installed an evaporator unit for the evaporation of waste water. Evaporation was selected because this method of handling waste offered a far more reliable and cleaner control for reducing waste water over a traditional waste treatment process. Using

evaporative technology also allowed PBR Columbia to remain a hazardous chemical free site; where as under traditional waste treatment, strong acids and caustics for the treatment of the waste stream would be have been required.

The unit has now been in operation for approximately three months and has already returned 117,000 litres of clean, purified water to the environment.

The installation also eliminates the need to transport truck loads of waste water thus minimising fuel consumption, haulage costs and reducing vehicle emissions.

One of the side benefits of an evaporation unit is that there are no ongoing costs such, regulatory permits or specially licensed staff to operate or maintain it as there can be with traditional waste management systems.

## The long and short of it

One of the more specialised areas of PBR's business is the development and supply of brake systems to truck trailer manufacturers in the Australian heavy vehicle industry.

**"PBR's design team was set a number of challenges, including a timeline of just 3 weeks to design, test and fit the system ready for service."**

Over the years PBR has compiled a range of products designed to add value when fitting brakes to original equipment trailers. In what is a relatively competitive industry, PBR gains their edge by going the extra mile and

tackling jobs that many of their competitors see as too difficult.

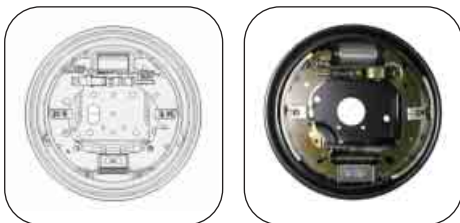
One such project was the recent fitment of a brake system to an extendable trailer that shifted between 14.6 and 40 metres in length. The trailer was purpose built to carry lengthy sections of roof sheeting and needed to be flexible enough to gain easy access to building sites.

PBR's design team was set a number of challenges, including a timeline of just 3 weeks to design, test and fit the system ready for service. The unique design of the telescopic rail sections and the huge variation in trailer length required the team to develop an innovative solution to the final design.

Tony Pumpa of Pumpa Engineering, who were managing a large part of the trailer's construction, commented on how easy the final system was to fit up.



## AP Italia business profile



The acquisition of AP Italia in 2003 has presented PBR International with a strong base for growth in the European market. AP Italia was originally spun off from Fiat in 1984 and since that time has undergone a significant transformation through cost reduction and increased efficiency initiatives.

The business today is considered a European market leader in the supply of drum brakes

**"The company is entering a phase of significant growth between now and 2007."**

and park brakes to many leading vehicle manufacturers such as Fiat, Renault/Nissan and Ford/Mazda. The company also has licensee arrangements with Continental Teves in Brazil, Nisshinbo in Japan and Hema in Turkey.

One of AP Italia's key focuses is adding value for their customers, which is reflected in their product range. The products they offer include; drum-in-disc park brakes, single-shot-adjuster drum brakes and incremental-adjuster drum brakes. Additional features available for these products include automatic snap on

cable mechanisms and the use of aluminium wheel cylinders to keep product weight to a minimum.

AP Italia currently employs approximately 350 people and produces in excess of 3 million drum and park brakes annually. The company is entering a phase of significant growth between now and 2007 which will see production volumes increase by 50% based on new contracts currently awarded.





## Oz industry update

The Australian automotive industry enjoyed a boom year in 2003 with a record 909,811 vehicles sold. The previous record was set in 2002 with sales of 824,309 vehicles. That's just over 10% growth during a year when much of the world's economy was considered a little shaky.

Can the industry continue to grow at that rate?

Industry analysts are predicting that 2004 will fall just short of 2003 sales at approximately 900,000 vehicles. Sales for the first two months would suggest the market is on track to meet or possibly exceed that target with both January and February sales ahead of the same time last year.

The market leader at present is Toyota continuing their overall leadership in 2003.

Following closely, by 2.0 market share points, is Holden.

In the passenger car market most market segments are showing growth over the same time last year with the exception of large cars (-3.5%), sports cars (-37.8%) and people movers (-0.1%).

The SUV market is running 15.6% ahead of 2003 and the light truck market is 20.4% ahead.

## Monash doubles up on PBR design award

Monash University has proven themselves as a brake system design force after winning the PBR Brake System Design Award at the 2003 Formula SAE event for the second year running.

But whilst their brakes were running hot, the rest of their car was running hotter. Following a slightly disappointing start to the event in the static categories of design, cost, presentation and technical inspection the team set a record track time of 47.42 seconds in the autocross event.

**“But whilst their brakes were running hot, the rest of their car was running hotter.”**

Morale was on a high when the team headed into the major category on the program, the endurance event, ready to demonstrate what the car could really do. With its distinctive wings in full flight the



Alistair McVean and Charles Sanderson collect their award

Monash car took to the track with tremendous speed, lapping both RMIT and Wollongong. Then disaster struck.

An oil leak ignited on the exhaust generating flames and a black flag from officials. Not to be deterred the crew fixed the problem and got the car back on the track only to have a second fire flare up, this time destroying vital components in the engine bay.

Failure to finish the endurance event meant a less than satisfying result for the team. Despite what they considered to be an immaculate preparation for the competition they now understand just how much impact luck can have in motorsport.



## Senior appointments



Mr Grant Anderson



Mr Adrian Boden

The PBR International executive management team has undergone recent changes with the appointment of Mr Grant Anderson to the position of President PBR International and Mr Adrian Boden to the position of Vice President Product Engineering.

Mr Anderson joined PBR in June 2003 as President PBR Australia/Asia following his role as Regional Managing Director – Asian Rim for Schefenacker, a German automotive

components company. In his broader association with the Australian automotive industry, Mr Anderson was recently elected to the position of President of the Federation of Automotive Products Manufacturers (Australia).

Mr Boden has a strong product engineering background having worked as Managing Director Brembo Engineering in the UK and Italy and with companies such as Siebe Automotive Europe and Allied Signal Automotive in the US, France and the UK. More recently he has been actively involved in a business development role with Pacifica Group Technologies.