



**NEWSLETTER 12**  
**A special Public Works edition**

# JICEY

## PRECISION SHIMS

### 2007, A LOOK BACK ON AN EVENTFUL YEAR

**2007 was an especially eventful year for Jicey. There have been plenty of changes and new projects to mark the company's sixtieth birthday.**

In early 2007, the company left its original premises in Viroflay and moved to a site at Houdan which has been totally custom-built to support our growth and help us meet the challenges of the future. Then there was the Bourget trade show in June which gave us a chance to welcome and meet our many French and international aeronautical customers. So throughout the year there have been new partnerships, others have been consolidated or maintained, and it is with their support that we can look calmly and ambitiously to the future.

In the spring, the audit held on our new site led to the AFAQ-AFNOR certification body renewing our ISO 9001 and EN 9100 certification, thus rewarding our huge efforts and investments.

As we at Jicey are handling an increasingly large volume of business, it is now important for us to make the most of these investments in order to allow an increasingly sustained growth in production (see our article on page 3).

As a result we will be able to draw fully on our excellent production capacity in 2008, offering an even better response to your needs.



# JICEY, THE ADJUSTMENT SHIM

## NEWS IN BRIEF

Jicey was there at the 47th Salon International de l'Aéronautique et de l'Espace (Paris Air Show) at Le Bourget in Paris held from 18th to 24th June 2007.

Once again the Le Bourget show beat the record set at the previous event, with more than 153,920 professional visits, which is 12% up on 2005. The 2007 show featured more than 2,000 exhibitors covering an area of more than 129,000 m2 of indoor exhibition space. The aeronautical sector accounts for more than a third of Jicey's turnover, which has been constantly growing for years, with high-prestige customers such as Hispano-Suiza, Microturbo, Thales, Snecma, Aircelle, Asco and many others.



At this event we presented our full range of adjusting shims (peel, separable, solid, extra-thin or bi-component); used on all leading civil or military programmes. The event gave us an opportunity to meet our customers and new partners and to tell them about both our move and our dual ISO9001 and EN9100 certification.

**A quality control system gives a company decisive added value. It is crucial to competitiveness and is a key strategic asset which helps to encourage customer loyalty and win over new markets.**

Its scope runs from sourcing right through to production and also includes technical and sales work. At Jicey we have developed strict quality procedures based on the ISO9001 standards, supplemented by the demands of the European EN9100 standard for the aeronautical, space and defence industry.

Since 2006, Jicey has obtained this dual certification, thus becoming the first manufacturer of adjusting shims in France to be recognised for its quality system across these two standards. We have always made every effort to maintain a dynamic of performance and continuous improvement of our products, our services and our manufacturing process. All of the pieces which come out of our manufacturing chains are produced with exemplary precision: quality and dimensional control are key to fulfilling all your requirements.

## In 2007, we built a modern enterprise in Houdan tailored to develop our growth and to meet the challenges of the future, giving us a new lease of life.

**S**ince 1946, Jicey had been based on the site of a former laundry, in a residential area in Viroflay, which

rather limited the company's industrial activity. So we decided to move to Houdan, an industrial development zone in the Yvelines area, sixty kilometres from Paris. This means a significant investment in a new production system so that we can confidently and ambitiously face the challenges of the future. It had become necessary for us to move first of all so that we could increase production still further, but also so that we could develop, rationalise and modernise the whole of our manufacturing chain.



So, in order to complete this project successfully, we needed totally custom-built premises. The size of our site has multiplied by six (the Houdan site covers a total area of 6500 m<sup>2</sup>), the production area has more than doubled to 2000 m<sup>2</sup>, with room for an additional 1000 m<sup>2</sup> of growth in the future. The administrative part has tripled (600 m<sup>2</sup>).



The changes on the new site are about far more than just area: we have also invested heavily in new production tools and machines which will

allow us to step up both production output and speed.

So five new presses have been installed on the site and there are four new polymerisation ovens which can operate together (whereas the two old ovens in Viroflay were unable to operate at the same time), a degreasing machine and a machine used to reformat the material on-the-fly. Another important point is that the plot of land in Houdan has allowed us to double our storage capacity. We can now store twice as much volume of material as before. The storage facilities are fully protected, enclosed and totally secure.

But a company's success also depends on its employees. The Sodepi group (Sodepi, Jicey, Atec) has welcomed eight new recruits who will essentially be reinforcing the group's production and sales teams.

We at Jicey would like to thank our customers and partners for showing such trust in us and for supporting us in this key stage throughout 2007.

So now we really are equipped to meet all your needs!



## FOCUS ON THE EXTRA-THIN SHIM

**J**icey has been the leader and specialist in the manufacturing of extra-thin shims for many, many years. We have developed this know-how using our ability to machine extremely thin materials (starting from 0.01 mm for stainless steel).



Extra-thin shims are solid shims which can be used to fill gaps which are often less than 1/10th of a millimetre. They are engineered and may be made of steel, aluminium, stainless steel or polymer (Mylar, Kapton). We can make them in thicknesses of 0.025, 0.05, 0.10 or 0.20 mm. The shim is machined rather than cut in order to guarantee a highly accurate piece with no burring, irrespective of its shape.

We also insist that our suppliers of raw material offer this guaranteed accuracy, with very precise specifications allowing us to produce strips with tolerances that are tighter than the usual standards. The most important customers for

our extra-thin shims operate in the aeronautical industry. But this solid experience is also drawn upon in all other industrial fields.

We at Jicey will work together with your own engineering departments to design the best adjustment solution. Please do not hesitate to ask us about this!



## NEWS IN BRIEF

Did you know?

**The Airbus A380 is a long haul four-jet engine civil aircraft built by Airbus.**

The largest carrier in the world first took off on 27th April 2005 and obtained its airworthiness certificate on 12th December 2006.



We are very proud of the part we have played in this extraordinary adventure, indeed no fewer than 65 of our peel, solid or extra-thin shims can be found in the cockpit, the landing gear, the doors, aero brakes, reactors, etc. We at Jicey have always been able to provide our products with the quality and precision which are essential to major aeronautical projects.

The figure **+ 30 %**

**This is the percentage increase in our production volume since we moved to the Houdan site.** Indeed the investment in new machines and tools and the rationalisation of our production chain are helping us to step up production in terms of both speed and output but without taking any less care taken over quality.



## Jicey has more than forty years' expertise working for Caterpillar worldwide.

**Caterpillar Belgium is a Belgian company incorporated in 1965 and the second largest subsidiary of the Caterpillar group.** Caterpillar is an American multinational set up by the "HOLT Manufacturing Company" and the "Cl Best Tractor Co" in 1925 and is the leading producer of civil engineering machines, diesel engines and gas turbines.

The company is also heavily involved in the mining industry and also in the construction, demolition, equipment handling and road repair sectors.

Caterpillar offers more than 500 different machine models, manufactured in 115 factories worldwide. The company has been involved in building infrastructures all over the planet for more than 80 years.

Working in close collaboration with its worldwide network of dealers, it also contributes to positive, sustainable development all over the world.

"Caterpillar EAME Operations" is the group in charge of the factories which are mainly located in Europe. It is based in Geneva and its territory stretches from Europe (where one machine out of every four is sold by Caterpillar) to Africa, also including the Middle East and the Community of Independent States. The main characteristic of the Europe / Africa / Middle East market is an enormous geographical diversity which

determines highly varied requirements on the part of their customers and amounts to turnover of 10.66 thousand million dollars.

Caterpillar Belgium products include 14 to 30-tonne wheel type loaders, 23 to 85-tonne hydraulic shovels and components offering real added value such as 110 to 575 HP diesel engines. The company is based in Gosselies near Charleroi and invests an average of 35 million euros in modernising its production systems every year.

It is also very environmentally aware and spends 2.5 million euros on protecting the environment.



The partnership between Caterpillar and Jicey focuses essentially on Shimpack separable shims. These shims offer a practical solution wedging, designed to suit difficult climatic and environmental conditions. This

shim is made up of a stack of elementary sheets, joined together by adhesive dots on the edges. The advantage of the Shimpack is that it can be peeled off by hand, in total safety. The Shimpack is cheap and effective; once removed, each sheet can be reused as a single wedge for another assembly, irrespective of the original size and thickness of the part.

Caterpillar uses Shimpack shims on the drive shafts on their vehicles worldwide, the major advantage for the group is that our shims can be used on all Caterpillar machines worldwide.

## JICEY, MICROTURBO'S FAVOURED SUPPLIER

**Microturbo Limited, Jicey's aeronautical partner of choice, was set up in 1973.**

Microturbo Limited is part of the Safran group, which has subsidiaries in more than 30 countries worldwide, employing more than 60,000 people.

Microturbo is a subsidiary of Turbomeca and these two companies are the main manufacturers of small and medium-sized turboshaft engines. Microturbo Limited specialises particularly in the manufacturing of complex mechanical assemblies for the aerospace industry and general maintenance of small and medium-sized gas turbines. This division of Microturbo, along with its manufacturing centres,

supports Turbomeca in terms of supplying spare parts and follow-up.

Microturbo Limited stands out from the rest of the market because of the company's activity as a provider of services and after-sales support.

Their strategy is to provide "an excellent service, tailored to the customer's needs" which means that they encourage the quality of the partnership approach on a given market, in order to understand the customer's needs in terms of quality, cost, delivery and reliability of the responses.

They also focus both on the manufacturing processes and on

the supply chain in order to meet requirements in full and also in order to develop their own staff's qualifications so that they can offer the best possible delivery conditions. These – along with the company's unique experience in the field – are



the main reasons why Microturbo Limited has chosen to work with Jicey. The relations between Microturbo Limited and Jicey began in 1991. Jicey solid shims are thus essentially used in hydraulic pumps and in rotors, for

helicopters and aircraft (PUMA, TIGER, etc.)

These shims are made up of a strictly custom-made compact material, available in a very wide range of dimensions, thicknesses, hardnesses and materials (carbon steel, stainless steel, special aeronautical steel, aluminium, titanium, etc.) They are mainly used under extreme conditions (vibration, traction, etc.)

Because Jicey has provided such high quality precision work, the relationship between Microturbo and Jicey is built on trust and has been constantly developing for sixteen years.



# THE JICEY FORMULA ONE

## In the previous edition we told you how a young Belgian driver bought the first Jicey single-seater directly from the Viroflay-based company, directed by its inventor, Jean Caillas. And yet...

**W**e must remember the role played by a clever, indefatigable and totally fearless mechanic by the name of René Foiret.

In 1946, René Foiret was 34 and had a solid grounding as a mechanic working on small capacity racing cars such as Amilcar, Darmont and other Cyclecars - he sometimes even drove them himself.

He had actually also rounded off his experience by working on 12-cylinder engines at the Hispano-Suiza factory for 4 years. One day he went to the Lépine competition where he met up with two old friends on a certain Jicey stand which was selling the new seals invented by the engineer Jean Caillas.

The latter told him that he was planning to develop a racing car and that he was looking for a mechanic. René Foiret took the job right then and there and went on to take part in building the two Jicey single-seaters.

When we went to meet him he was still full of enthusiasm and delighted to share his memories with us: "I was living in the Place de la Convention in Paris and I used to catch the train early in the morning to go to the Viroflay workshop. We worked so hard that I didn't use to get home until around 11 p.m."

"I loved it because I was born with a passion for all things mechanical. It's a gift I was born with. The single-seater had been drawn life-size on the wall in a corner of the workshop and first of all we fitted a Peugeot Darlmat engine which Georges Berger had blown up on the Monthléry speed track. We later replaced it with a 6-cylinder, 2-litre BMW." "Now that was a great engine!"

Georges Berger was a young Belgian driver, the son of an industrialist from Brussels who operated an enormous scrap metal and demolition

company, an area of business which was booming after the war. This talented young driver bought the first Jicey and recruited the person who knew it best, in other words René Foiret, to help out during the race and get the car ready. So René and his family went and lived in Brussels from 1948 to 1951 and he travelled around every track in Europe assisting his boss Georges Berger who drove the famous Jicey. At the time it was often pretty tough going.

### A Jicey with "Nitrobenzene"



René Foiret transported the Jicey single-seater on a platform towed in theory by a large American saloon and Georges Berger joined him at the track by air.

He often used to have comical adventures during these expeditions but one of the most epic of these was surely the one which took place at the Avus track in Berlin in 1951. René Foiret had left Brussels with a Renault Primaquatre towing the trailer with the Jicey on it but this was right in the middle of the "Cold War". In order to travel through the Soviet zone, the single-seater was placed into a sealed wagon and made the journey by rail whilst its mechanic travelled in an old pre-war aircraft which vibrated all over!

Before the race, he was assigned to a Mercedes garage in the American zone of Berlin. The tests had taught everyone a lot and the Jicey's unusual technical features had helped to give us an advantage over the other competitors.

There was actually a "funnel" type of passage at the Avus track where the track had a steep lateral slope. This configuration led to the crushing of the car's left suspensions and made the oil pans touch so that they cracked or burst on contact with the ground.

The Jicey managed to avoid this major drawback

with its suspension system with multiple bungees, all they had to do was harden the left-hand system to make sure that the chassis did not get crushed under the effect of the centrifugal force. So everything was going really well. On the night when he was getting the Jicey ready and making the final adjustments to the suspension, a team of German mechanics came over to visit René Foiret bringing bottles of "Schnapps" which were emptied in a euphoric celebration of renewed Franco-German friendship.

The rather tipsy Mercedes mechanics told René Foiret that they were putting a top-secret special mixture of "nitrobenzene" into their racing car's fuel tank. René Foiret thought he would try putting some into the Jicey in order to boost the 6-cylinder BMW engine.

His new mechanic mates got hold of some for him, discreetly accompanied by a bottle of Schnapps to keep René Foiret's spirits up, and he remembers it to this day. The final tests were astonishing. Georges Berger could not believe it. The engine picked up 1,000 extra revs, reaching 7,000 rpm, and the car reached a speed of 250 km/h (155 mph) instead of 220 (135 mph). On the day of the race, after excellent time trials, the engine block exploded at full speed, shooting crank arms, pistons, valves and cam shafts out like fireworks.

The race was over for Georges Berger who flew home "but there were still a few hiccups in store for me". Indeed, in order to get home to Brussels, René Foiret used the same means of transport as on the outward trip and sixty or so miles from the Belgian capital it was the turn of the engine of the Renault Primaquatre to explode. He was given a Cadillac to finish the journey and the poor Primaquatre was simply abandoned to its fate on the side of the motorway. The expedition lasted for 10 days. René Foiret immediately fitted a new engine to the Jicey and Georges Berger set off again, for another adventure this time.

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