

# Rewinds and J Windsor



Gianfranco Colangeli (Franco), and Gerry Downing of Rewinds and J Windsor with Andrew Savage of Mid Kent.

**Members of the AEMT were invited to visit the premises of Rewinds and J Windsor in Liverpool in December. The company was formed in 1946 by Mr. J.I. Windsor with its core business based around ship repairs, and also included the repair of electric motors. The business is still based opposite the redundant Trafalgar Dock. As repairs to the shipping declined, the company successfully refocused its work to land based industrial repairs. They expanded into an extra building on the other side of the Mersey in Wallasey, and more recently took over CH Rewinds in Manchester, and George Platt Ltd. based in Bolton.**

It is great credit to the company that after 60 years it is still a very substantial family company, with the sons and grandsons of the founder still involved in the company, and a staff of around 150. It has built up a good working relationship with international companies such as Cargill, Ford, ICI, Kodak, Toyota and Unilever.

The company is unusual in that it successfully runs each department as a separate entity, as well as being integrated with other departments. Each facility is a sizeable operation in its own right, but with its own delivery and access. Like many repair companies they operate 24 hours a day, 7 days a week. The departments are well equipped and the company as a whole has ISO 9001.

The electrical department operates from two large bays. The first bay is reserved for dismantling motors and generators on receipt. It has a large range of equipment to help dismantle any size motor; there are Burn Out ovens, Chemical stripping tanks, and a large Thumm extractor. They also design their own 100 tonne pulley extractor, and are able to make similar machines for other repair companies.

The electrical department of repairing any size of motor from the smallest fractional up to 5MW ship's power units, as well as pumps, generators, and transformer repairs. The varnish tank is sunk into the floor for maximum ease of use, and close to the doors of the large curing oven. They also have the Thumm trickle impregnation machine, and a

smaller 50 tonne pulley extractor also built by themselves. Their portable test facilities also include a Baker tester and a Core loss tester.

They have impressive test bed facilities capable of test running up to 6.6kV. They can also carry out full load and rotter tests on AC and DC machines. The company is at the forefront of technology and has added a new facility designed to test wind turbines before they are reinstalled. All of this adds up to one of the best equipped electrical workshops in the UK for the size of work handled.

In the electronics department they carry out repairs to drive cards and mother boards, I/O cards, controllers, PSU's, PCB's, and servo drives. They also carry out repairs to permanent magnet DC motors, Axem pancake motors, AC and DC brushless Servo motors, stepper motors, tacho generator, encoder and resolvers. The department has its own special test facilities for servo motors. They design, build and install Variable Speed Drive Panels, Control Gear panels. The company works closely with Control Techniques as an authorised distributor and approved repair centre and Mark Swayne, their projects manager works on projects to design energy efficient drive systems.

This department is complemented by the Wallasey works, now run by Luke Windsor, which carries out small to medium batch repair work. There is a special department handling high frequency stator rewinds and repairs for power tools, fettling grinders and frequency changes. Special machinery has been imported from Italy to weld on these commutators, and all completed repairs are vacuum impregnated to ensure reliability at high speeds. They have built up a large stock of spare stators and armatures for these machines. Wallasey also manufactures the matched speed Selsyn motors having purchased the manufacturing from GEC.

Whereas most members have good mechanical facilities, Rewinds and J



Michael Windsor and John Windsor with Ron Mitten, AEMT past president, at the AEMT AGM.



Specialist welding and fabrication in the mechanical workshop.



Mark Swayne with Lee Windsor in front of the purpose built servo motor test facility.

Windsor have mechanical ability, which has developed from the shipping days. They have a total of 10 turning lathes, mainly Harrison and Colchester, ranging from 6 metres between centres to a 4 metre swing. The boring machines are a Kearns Richards SG100 horizontal table and Webster Bennet 481N EV for vertical boring with a 54 inch swing. The Vertical milling have a 2m x 1m table size, and 3 Turret Milling machines. These are complemented by sawing, cutting, drilling, grinding, and lapping equipment, and three horizontal power presses up to 500 tonnes for dismantling.

There ability to repair rotating shafts majors on spiral welding with three semi automatic internal and external Spiral 300 to 650 amp IMG welding machines. The larger machines can handle 10 metres by 2 metres diameter, and the smallest from 20mm diameter. The final repair is as good as new, if not better than when new. This is the most common method of repairing warm shafts, although they can also use ceramic spraying, Eutectic Castolin and Rototec cold spray equipment, and Metadalic selective plating facilities.

Assembly of machinery and component parts is carried out in a dedicated "clean area." There inspection equipment includes Magneflux Magnetic Particle Impregnation testing, to detect hairline cracks or voids, and ultrascan portable ultrasonic testing facilities. For speed of turn round they carry an extensive stock of En series carbon steels and stainless steels up to 300mm diameter.

The mechanical department has a full fabrication facility including a Hydroform power bending machine, Guillotine, Power rollers, cut off and sawing equipment. There is a variety of Mig, MMA and TIG welding plants. The company is also able to design and manufacture fan impellers and casing.

The mechanical department is supported by one of the largest contract balancing facilities in the North of England at the Wallasey works. The multitude of Balancing machines range from a small Giesler balancing machine capable of handling 50 grams for the High Frequency repairs to a range of Schenk machines capable of handling up to 11 tonnes.

The company offer a full range of on site services. On the electrical side they

will remove, repair and reinstall motors, generators, pumps, and transformers. This is backed up by a full predictive maintenance ability to ensure that parts are properly aligned, and balanced, this greatly extends the life of equipment and ensures greater energy efficiency. Thermography is also used to find faulty switch gear, or motors and bearings "running hot."

Laser alignment is used for shafts, couplings and pulleys. One of the largest causes of premature failure of equipment is through misalignment, which also leads to substantial losses in efficiency before the equipment fails completely. On mechanical equipment geometric laser alignment can be used to ensure parallelism, flatness, and for perpendicular and concentricity measurement.

To link all this together Rewinds and J Windsor now offer customers a full motor management service. It forms an online asset tracking database designed to improve the repair and maintenance of electric motors in large industrial plants. It ensures that motors and spares are kept in stock for the replacement of critical components in an orderly fashion, and leads to fewer breakdowns. As the system is online, it means that work engineers and contractors can keep track of their equipment and access its repair history, so that vulnerable motors can be identified. They carry a large stock of new and second hand replacement motors and are an authorised repairer of Leroy Somer generators. They are distributors for Leroy Somer motors and UK agents for Anton Piller equipment.

All the Windsors seem to rise to a challenge, and the way the company has found special niches and excelled in them is impressive. The company leads in many fields, and by continuing to invest in new equipment and plant, will maintain its place as one of the leading repair companies in the North of England.



Delicate work in part of the electronic repair department.



A Kearns Richards SG100 horizontal type boring machine.



Staff using a Lexseco core tester in the rewind department.

#### Websites for Rewinds and J Windsor

[www.rjweng.com](http://www.rjweng.com)  
[www.chrewinds.com](http://www.chrewinds.com)  
[www.industrialmaintenance.co.uk](http://www.industrialmaintenance.co.uk)  
[www.georgeplatt.com](http://www.georgeplatt.com)