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INDUSTRIAL INFO-TAINMENT

The Rockford Group

Making harnesses & assemblies with military precision

Rockford Group is the UK's largest independent manufacturer of military wiring harnesses and cable assemblies. It has been addressing the requirements of the military market for many years and, in this high reliability and

increasingly competitive marketplace, has been involved in many of the largest and most prestigious military contracts let over the last decade.

Wholly owned by the working directors, it comprises three companies serving predominantly the military but also some specialist commercial industry requirements for cable assemblies, wiring harnesses and associated sub-assemblies - including mains distribution and PLC controlled systems. The Rockford cable assembly and specialist wiring workshops are complemented by its quality sheet metal fabricating business and in-house finishing facility to offer a complete assembly service, from ISO 9001 design to finished assemblies, manufactured and tested to defence standards. The company also operates a thriving connector distribution business, is a Franchised Distributor for AB and TEC military connectors and maintains a varied stock holding in excess of 12 million units.

The Rockford story began back in 1978, when Rockford Marks was formed

In the military aerospace field, its work in high specification harnessing and assemblies extends to the building of complete avionics test sets and includes systems for Merlin, Sea King, Tornado and Harrier aircraft. "In addition to our extensive manufacturing expertise, considerable investment in state-of-the-art software technologies is responsible for keeping us at the forefront of cable assembly design" added Steve, "Our design capability gets us into projects at an early stage and enables us to add value to our contribution."

This is clearly visible in the extensive design office where ISO 9001 design and post-design services for cable assemblies and associated mechanical sub-assemblies is undertaken from no fewer than five CAD positions. The design team specialise in interconnection systems, using the latest AUTO-CAD 2000 software, complemented by Visio Technical 2000 and overlaid with Raychem HarnWare software. Recent projects include the Merlin helicopter MATS test sets, harnesses and cable assemblies which it manufactured for Serco Test Systems, the placement of a range of cable harnesses at a BNFL nuclear power station and a complete 19" rack and MMI assembly built to withstand extreme mechanical conditions and with full EMC screening. All drawings can be printed in-house up to A0 size on the latest inkjet plotters and colour printers.



Photo shows a section of the cable assembly and specialist wiring workshops at Rockford Group.

For a company renowned for its expertise in military harness assemblies, Rockford Group's newly acquired premises could hardly be more appropriate. In June this year, it completed a move into a 64,000 sq ft building on the site of the former RAF Bentwaters USAF air-base in Suffolk, which served as the Mission Support Centre during its occupation by the US Air Force 81st Tactical Fighter Wing. This move enabled the company to consolidate the business activities of all three of its factories under one roof - with room to accommodate future planned expansion.

From here, the company works with many of the world's frontline defence

to specialise in the manufacture of military cable assemblies and wiring harnesses. This company grew steadily within its own financial resources and, in 1984, opened a sister company, Rockford Components, to supply connectors to major OEMs.



Photograph shows Rockford Group's new premises. The building was formerly the Mission Support Centre for the USAF 81st Tactical Fighter Wing at RAF Bentwaters.

During the 1990s the Rockford businesses continued to flourish. As the harnessing and assembly business necessitated the holding of extensive connector stocks, it was a logical progression to become a distributor for these items and Rockford is now a Franchise Distributor for the specialist military connectors of ABB and Litton-Veam (TEC). A series of shrewd acquisitions expanded the company's capabilities and, with the purchase of Wiremek, it added mains distribution panel manufacture and building management systems, using PLC controllers, to its area of expertise. In 1998 the group bought the sheet-metal fabrication and PCB assembly divisions of the electronics company IEL. With the sheet-metal fabrication business came a Weidemann twenty-two station CNC controlled punch and a 100 ton, 5 axis Amada CNC controlled press brake, enabling the company to produce a wide range of frames, racks and enclosures in most common materials ranging in thickness from 0.5mm to 6mm. The acquisition of the PCB assembly business has added conventional and surface mount PCB boards, manufactured to customers' design and specification, to the product offering. "The bringing together of all these capabilities enables us to offer customers a one-stop-shop for system design and build programmes" explained Commercial Director, Steve Hayter.

He continued, "Our complete engineering solutions encompass design, manufacture and supply of cable assemblies and wiring harnesses, manufacture of PCB assemblies and supply of a complete package of ancilliary equipment and services including metal fabrications, precision turned components, paint finishing and silk screening – and all from within Rockford's own facilities."

For land forces these included a part of the largest military cable assembly contract in the 90's, producing hull harnesses for the Challenger 2 main

equipment suppliers. Although the military market accounts for some 80% of the business activity, the company also manufactures harness systems for industrial applications. In a recent design and install project for the nuclear industry it rewired the reactor catenary, supplying fuelling equipment at Wylfa Power Station for Magnox Generation and is currently producing rail rolling stock cable harnesses for Pullman Design & Fabrication Ltd.

The comprehensive service offered on interconnection systems embraces small development batch work through to full scale production runs across a wide scope of manufacture, including:

- Aircraft and associated wiring looms
- RF and microwave flexible and rigid assemblies
- Extendable coiled cable assemblies
- EMC assemblies with knitted braid screening
- High temperature engine harnesses and conduit assemblies
- Intervehicle cable assemblies
- Injection moulded connector cable assemblies

The specialist, high specification nature of Rockford's business is clearly demonstrated by the fact that 25% of its 120 workforce is employed in project management and inspection.

Electrical testing of finished product is computer aided on automatic test equipment, learning from proven assemblies and providing print out data to meet the customer requirement. Phase matching, VSWR and insertion losses of coaxial cable assemblies are calculated using sophisticated network analysers. The company has Thermatron chambers for environmental and burn-in cycle testing from -85°C to +150°C.

Throughout its history Rockford Group has looked to add additional in-house capabilities to its portfolio and the benefits of this policy are today more evident than ever. The pressure on OEMs to constantly review and reduce their internal overheads has led to a significant market increase in the outsourcing of complete system manufacture.

Rockford has also been a specialist in worldwide component sourcing for many years, with its own US based procurement division able to locate and supply even the most difficult to find items. This procurement service also assists in meeting the demand for reduced supplier numbers, by enabling customers to obtain all their passive components, semi-conductors and circular, square, multi-pin and coaxial connectors for military and industrial applications from a single source. Several major OEMs have appointed Rockford Group as their sole source of supply for this category of material.

This remarkable independent company has come a long way since its beginnings 23 years ago, but it has lost none of its early drive and ambition. It has a commitment to quality, service and value for money and continues to expand its capabilities to offer its customers expertise in an ever-wider range of complementary disciplines.

battle tank and followed by the design and manufacture of turret harnesses for the recent European Challenger 2E upgrade.

The Company is currently producing wiring harnesses and driver instrument panels for the Piranha, 8-wheel armoured vehicle and working on prototype harness design and build for MRAV, the multi role armoured vehicle due to enter service in 2005. On a project for Bosch Rexroth and Williams Fairey Engineering, Rockford not only designed and built the cable harnesses but also manufactured all the enclosures for the HDSB Heavy Dry Support Bridge deployment vehicle for the American D.o.D.

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Photograph shows an operative wiring up an interface adaptor for the Merlin avionics test set (MATS), which Rockford manufactured for Serco Test Systems.