Case Study: **How SKF helped award winning fan manufacturer achieve success**

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Daniels Fans, based in Llanelli, South Wales is a privately owned company manufacturing a comprehensive range of high temperature industrial fans operating up to 1150 ° C.

Founded in 1977 by Neville Daniels, the company is now a leading supplier to aluminium and steel heat treatment furnace manufacturers world wide. While maintaining its workforce of 35 skilled employees, export sales increased by 93% in 3 years and now account for over 80% of annual turnover. This achievement was recognised in 2004 when the Company received the Queen's Award for Enterprise in International Trade.

This small innovative engineering company has achieved its leading market position by applying leading edge new technology and equipment to ensure their products continue to excel in terms of performance, reliability, and quality.

This has involved a continuous programme of product development and research into materials capable of withstanding the stresses in high speed impellers, weighing up to 2 tons, operating at temperatures up to 1150C and working closely with clients to help them improve furnace performance. Maintaining such an enviable position in an increasingly competitive world market requires Daniels Fans to continually improve manufacturing efficiency and continue to respond to the special needs of their customers.

Innovative product design has enabled Daniels Fans to deliver value in a number of ways to customers, such as eliminating water cooling below 1000C and the need for high maintenance V-belt drives, using standard ‘off the shelf’ bearings that can be changed in situ, and minimising furnace assembly time and cost through designing the fan module as an integral part of furnace roof.

Every fan produced has its own individual comprehensive material, manufacture and tests record. The final test requires a check of vibration levels to ensure the impellor and fan are within dynamic balance limits using a unique and modular vibration instrument from SKF Condition Monitoring Centre (Livingston) Ltd.

In addition, Daniels Fans supports customers world-wide with a quick response and highly trained customer support service. This includes the provision of a computerised fan selection programme that calculates fan speed, impellor stresses and selects optimum material of construction and dimensions. This is supported by using production technology to produce small batches while ensuring reliable delivery times of 6-8 weeks.

An important aspect of the customer support offered is provided by their skilled service engineers, who can go anywhere in the world to provide installation, supervision, commissioning or maintenance services. The engineer has access to the individual records of the many thousands of fans supplied over the last thirty years that allows them to quickly identify and resolve customer support issues anywhere in the world.

If a high speed fan ‘goes out of balance’, it will start to vibrate and require prompt attention before serious damage to bearings or other components occurs.

The travelling service engineer carries a specialist tool kit to help quickly analyse and solve customer problems to ensure furnace downtime is minimised.

The Daniels Fans service engineers have for many years been forced to carry ‘big and bulky’ portable instruments around the world to carry out the dynamic balancing process.

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This equipment had to be stowed in the aircraft hold, inevitably suffering periodic damage on long flights and resulting in added costs.

With a need to find something more compact, rugged and effective, the team searched for a replacement. And they found it in the Microlog MX, a leading edge high performance instrument from SKF Condition Monitoring Centre (Livingston) Ltd, based in Scotland. In addition to being truly hand portable and extremely rugged, the new device offers a combination of performance and flexibility unmatched by other products currently on the market. For the service engineers, it proved the ideal tool for the job, enabling fans to be checked both before shipping and on-site if required.

Neville Daniels, director and founder of Daniels Fans, commented: "Not only did the Microlog MX prove to be an ideal tool for on-site inspection, maintenance, and balancing, but we are also able to use it as part of our in-house quality system by checking each fan before we ship it. This gives us a comprehensive printed record of each fan during its lifecycle, and helps us quickly solve customer problems once the fan is installed."

Daniels concluded, saying "Furthermore, by adding the analyser and bump test modules, we now have a single powerful multi purpose tool that also lets us analyse the vibration of a fan, as well as balance it if need be. That way we make sure that the customer receives a quality product ready to install and commission!"

The additional vibration diagnostic techniques provided by this powerful new instrument are now being used to benefit both Daniels Fans and their customers.

As a result the company service engineers have attended the Noise and Vibration in Industry Seminars run by SKF Condition Monitoring Centre (Livingston) Ltd, which give a comprehensive introduction to the world of vibration analysis for beginners and intermediate engineers.

Further information on both the Microlog MX and the Noise and Vibration in Industry Seminars can be found on www.skf.com, or by contacting SKF directly.

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Overview of the SKF

SKF is the world's largest supplier of bearings, seals, housings, machine tool spindles, by-wire systems for brakes and steering and a wide range of linear motion products. The company also manufactures and markets lubrication and condition monitoring systems for mobile and stationary industrial applications.

With research facilities in the Netherlands and the United States, SKF - the Knowledge engineering company offers customers a wide range of design, NHV (Noise, Vibration and Harshness) and failure analysis services. In addition, the company offers customers complete plant asset assessment and management programs to improve plant efficiency and reduce maintenance costs.

With over 100 production facilities world wide and sales offices in over 160 countries, SKF employs over 40,000 people.