



## Innovation in Aerospace

As with other industries, the strength of the Sheffield region within the aerospace sector lies with the production of raw materials used for aircraft component manufacture.

Corus Engineering Steels with its headquarters in Rotherham is one of Europe's prime producers of engineering steels used in aerospace for applications such as aircraft landing gear and helicopter gearheads and rotors.

Sheffield is a centre for production of super alloys for use in aircraft structures and there are a number of quality machinists who act as product and supply integrators for the likes of Rolls Royce.

In addition, the Advanced Manufacturing Park (AMP) on the Sheffield-Rotherham border has become the UK centre for aerospace research and development organisations. The AMP is home to the Advanced Manufacturing Research Centre (AMRC) with Boeing who work extensively with Boeing's supply chain partners advancing manufacturing techniques.



## Supply chain strengths

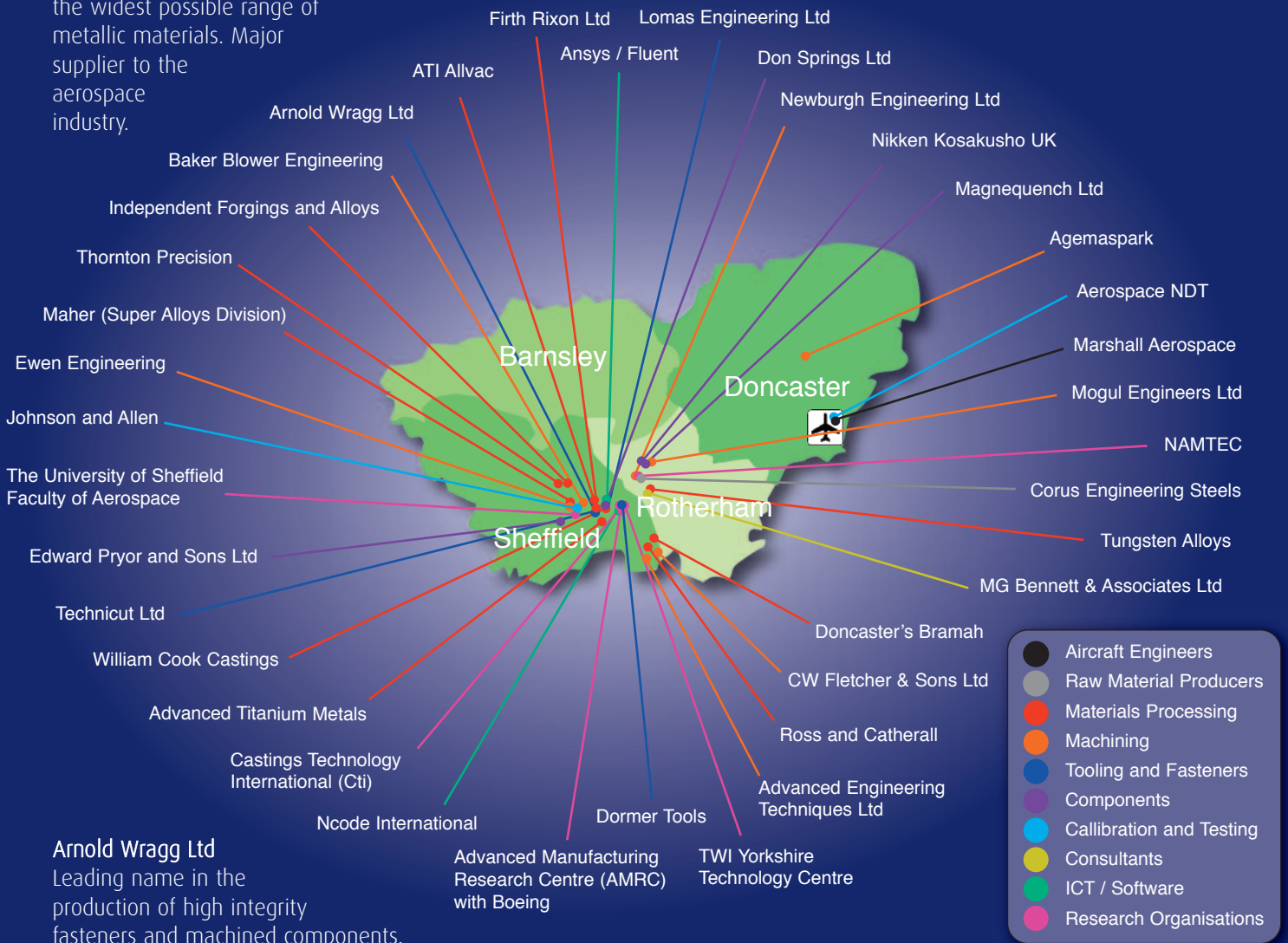
Here are just a selection of the companies operating within the aerospace sector in the region.

### ATI Allvac

Provides industry with one reliable source for a large proportion of its high performance metals requirement. It offers a full range of speciality metals and alloys, which include stainless steel, nickel based super alloys, titanium and titanium based alloys in most product forms.

### Independent Forgings & Alloys

Specialist open die forging and ring manufacturer, producing forgings up to 10 tonnes in the widest possible range of metallic materials. Major supplier to the aerospace industry.



### Arnold Wragg Ltd

Leading name in the production of high integrity fasteners and machined components.

### Lomas Engineering Limited

Specialises in engineering and manufacturing of a comprehensive range of special cutting tools for the aerospace, defence, automotive and general engineering industries.

### Technicut Ltd

The UK market leader in the design, manufacture and supply of specialist rotary cutting tools for the High Speed (HS) and High Performance (HP) machining of aerospace alloys and composite materials. Industries supplied include; aerospace, aero engine, Formula 1 and medical industries.

### Doncaster's Bramah

Specialisms include precision casting, forging, fabrication, machining and production of super alloys. Key products include airfoils, structures, casings, rings, exhausts and combustion components for gas turbine applications, aero structures and components for airframe applications.

### Maher (Super Alloys Division)

Maher is an International supplier of superalloys, nickel and cobalt alloys, titanium, maraging and special stainless steels and copper alloys in bars, plate, wire and forgings. It also offers in-house cutting, heat treatment, testing and CNC machining facilities.

### Mogul Engineers Ltd

One of the leading precision engineers and machinists in the UK. Working with many of the UK's top blue chip companies

### Ansys / Fluent

Fluent has grown into the largest commercial CFD software supplier in the world and has established a broad client base in the aerospace and defence Industries.

### Aerospace NDT

Supplies Non Destructive Testing services and personnel to the aerospace industry.

### Agemaspark

High precision subcontract machining company. Long-term experience in gas turbine engine component machining and instrumentation. Collaborative partners with TWI on laser deposition welding for blade repair and tool repair or modification.

### Baker Blower Engineering

General engineering company providing CNC machining, turning fabrication and diamond grinding services. Specialising in machining to the aerospace industry. Major customers include Rolls Royce.

### Newburgh Engineering Ltd

Premier contract manufacturing company supplying high precision components for the aerospace, automotive and general engineering markets. Specialising in CNC machining fabrications and assembly in manufacturing cells. Major customers include MBDA, Lucas Aerospace and BAE Systems.

### Nikken Kosakusho UK

Nikken's product range encompasses CNC rotary tables, tilting tables, tooling systems and measuring devices. All quality products and services are used by engineers around the world including those involved in aerospace.

### Magnequench Ltd

Manufactures and supplies rare earth magnets and magnetic assemblies for actuators to several industries including aerospace and automotive. The company, a UK subsidiary of an American parent, has a range of aerospace technologies under development.

### The University of Sheffield Faculty of Aerospace Engineering

Aerospace Engineering at the University of Sheffield is at the forefront of innovative multidisciplinary research and teaching within the Faculty of Engineering. There are five contributing departments:

- Automatic Control and Systems
- Engineering Computer Science
- Electronic and Electrical Engineering
- Engineering Materials
- Mechanical Engineering

All five departments have an international research reputation, are renowned for their excellence in both research and teaching and have strong, long-standing links with the aerospace and related industries, nationally and internationally.



## Doncaster-Sheffield Airport

Located 15 minutes from J3 of the M18, formerly RAF Finningley, Robin Hood Airport Doncaster Sheffield is the UK's newest airport with the capability to reach destinations all over the world. The first flight was on the 28th April 2005, and the aim for the airport is to carry 2.33 million passengers and 62,000 tonnes of freight by 2014.

The airport has serious aspirations for the development of the freight and cargo product, and has already handled numerous ad hoc freighters including B747, DC8, AN74, A300, Bae146 operations. Diverse payloads have included high tech electronics, pharmaceuticals, wine and race horses.

The airport has a 62 acre business park, benefiting from planning consent for almost two million square foot of development. The site is dedicated to aviation-related uses, and opportunities exist for new build office and industrial/distribution units ranging from 7,500 sq. ft. to 260,000 sq. ft.

### Directions Finningley

Directions Finningley has undertaken the refurbishment of Hangar 3 at the Airport in order to create the UK's most comprehensive Aviation Training Academy. The Academy's facilities, which represent an investment of over £10 million by Yorkshire Forward, came on stream in April 2007 and offer accommodation for professional courses in aircraft engineering qualifications and other aviation skills. Within the Academy, there is an integrated maintenance capacity comprising Maintenance Repair and Overhaul (MRO) accommodation. The Academy also contains managed business units, adding to the role of the site as an incubator for new business creation. Directions Finningley has recently established a partnership with Marshall Aerospace, a major aviation engineering contractor, who supplies services to both the civilian and military sectors.

#### Key Facts:

- Robin Hood Airport Doncaster Sheffield is the UK's newest purpose built airport, situated on the site of the former RAF Finningley.
- The runway at the airport is 3000 metres long and 60 metres wide, which is 15 metres wider than runways at the majority of other UK airports.
- Situated just 7 miles from Doncaster and 25 miles from Sheffield, Robin Hood Airport currently handles in excess of 1 million passengers per year flying to over 40 destinations across the globe.



## Advanced Manufacturing Park

### Advanced Manufacturing Research Centre (AMRC) with Boeing

The Advanced Manufacturing Research Centre (AMRC) with Boeing is a world-class global research facility developing innovative and advanced technology solutions for advanced materials forming. Building upon Sheffield's historic and indigenous expertise in metal development and processing, the University, Boeing and the AMRC are also keen to now build upon their internationally acknowledged research into other materials such as composites. Novel and new materials will form an integral part within the development of Boeing's new generation planes.

### AMRC Composite Centre

The Centre is a research, design, manufacturing and technology transfer centre for composites developed for general manufacturing and aerospace applications. Building on the existing collaboration between Boeing and Sheffield University, the Centre will create a range of commercial openings for partner companies, including SMEs, in a market for composites where demand is expected to exceed supply in under two years.

### TWI Yorkshire Technology Centre

TWI is one of the world's foremost independent research and technology organisations, providing industry with engineering solutions in structures incorporating joining and associated technologies (surfacing, coating, packaging, cutting, etc). It is the only single source of expertise in every aspect of joining technology for engineering materials - metals, plastics, ceramics, composites and electronic assemblies.

The two main technologies housed within the Centre are laser processing and friction stir welding, operating one of the most powerful friction stir welding machines in the world.

### Castings Technology International (Cti)

is the world's leading centre of excellence dedicated to providing independent R&D, technical support and consultancy services to the castings and metal related industry. It opened its new headquarters on the AMP in March 2006.

Areas of expertise include the design of castings, materials selection, specifications, manufacture, quality control, inspection and testing, and component performance. It has a wide range of expertise, facilities and resources geared towards practical development work. They include comprehensive solid modelling, stress analysis, casting simulation and computer-aided machining software facilities.

## Advanced Manufacturing Sheffield Region

For further information, contact:

Richard Keates

AMM Project Co-ordinator

email: richard.keates@rido.org.uk

tel: +44 (0) 1709 372 099

## A great location

The Sheffield region is located at the heart of the UK. It has excellent road connections across the country. Mainline rail connections mean that London can be reached within two hours, and other major cities are easily accessible by fast intercity railway services. There are five international airports within a 90 minute drive, including Manchester International Airport with flights to over 200 global destinations. The region offers vibrant, friendly, safe cities and towns surrounded by some of the most breathtaking countryside in the country. It certainly offers a cost effective yet excellent quality of life.

## Investor support

We offer a comprehensive range of support services to investors including; expert assistance identifying and accessing all potential sources of grant and, if appropriate, commercial funding; assistance with recruitment and training of staff; relocation support for key staff moving to the area; and other support and facilitation wherever required. This is all provided through a dedicated Investment Manager – a single point of contact for all your needs relating to the project.



Part financed by the European Union.  
European Regional Development Fund

Supported by



The Region's  
Development Agency

Advanced Manufacturing Sheffield Region  
is a project on behalf of Yorkshire  
Forward and Invest South Yorkshire