

Technology and skills in Aerospace

UK aerospace sector is ranked second in the world with a global market share of 17%

Aerospace is a research and development - intensive industry with an annual spend of £1.4 billion

Sector employs 100,000 people and 130,000 supporting jobs in the aerospace supply chain

There is a forecasted demand for 27,000 new passenger aircraft by 2031 presenting a significant opportunity for the UK

Technologies in aerospace

Additive Manufacturing or 3D printing

The manufacture of products using **digitally-controlled** machine tools to build up components layer-by-layer

Global Additive Manufacturing sales predicted to be worth **\$3.7 billion** worldwide by 2015

12% growth in Additive Manufacturing in the last year

Additive Manufacturing key to achieving weight reduction and millions of pounds worth of **fuel savings** in aerospace sector

Composites

Consists of a bulk material **reinforced** with fibres, particles or flakes

Expected composites growth of **9% a year** on average in aerospace to 2015

Composite materials improve **strength, resistance and weight** of components in aerospace. Applications include fin, tail-plane, wing, fan, engine components

Plastic electronics

Plastic electronic techniques allow the creation of electronic devices on flexible surfaces.

Currently employs **3,000 people in the UK**. This is expected to increase to over **50,000 jobs roles by 2027** (across all sectors)

Potential aerospace applications include

- lightweight passenger displays
- passenger controls
- sensors embedded in seat textiles

Skills and jobs demand in Aerospace

Employers say there's a need for:

Skills:

- ✕ Design optimisation and CAD skills
- ✕ Finishing skills
- ✕ Understanding and experience of additive manufacturing, composites and plastic electronics technologies.

Jobs:

- ✕ R&D engineers
- ✕ Material engineers
- ✕ Project managers
- ✕ Quality assurers

SMEs

SMEs in these technology areas need extra help in raising their recruitment profile and in accessing training opportunities.

Big business (represented by a tall building icon)

SMEs (represented by a smaller building icon)

What next?

- Understanding the scale of activity relating to these technologies and assessing workforce development needs
- Tackling wide-ranging recruitment issues in Additive Manufacturing and Composites
- Demand exists for training across all three technologies
- Employer support expressed for Additive Manufacturing and Plastic Electronic Apprenticeship frameworks, to complement Composites Apprenticeship framework