



Maintaining a world class  
commercial aerospace  
industry in the UK





## Contents:

Introduction	5
Commercial Aerospace Companies	6
Airbus	6
Rolls-Royce	6
Bombardier	7
Goodrich	7
GKN	7
Challenges and Opportunities for the Sector	8
Airbus	8
Rationalisation	8
Environmentment	8
Globalisation	9
Investment in research and development	10
Economic conditions	10
Exchange rates	10
Future Markets	10
Cape Town Treaty	11
Skills and Training	12
Power and Lift	12
Unite Recommendations	14

## Introduction:

The commercial aerospace sector is in a period of rapid industrial and technological change. Global restructuring of airline relationships, commercial and military convergence, globalization, unprecedented production rates and maturing technology make for an intense period of risk and opportunity.

The strategic players in the sector, Airbus, Rolls Royce, Bombardier and Goodrich have significant roles to play in designing, building and maintaining the products that make the UK commercial aerospace sector the envy of the world.

The last decade has seen dynamic change in the commercial aerospace sector and, to survive, companies and suppliers have felt the need to lower operating costs, implement new innovation capabilities and create a global supply base. To facilitate this, the need for a highly skilled, highly experienced workforce is paramount. Unite believes the workforce in the commercial aerospace sector is one of the reasons it has been so dynamic and successful over the past decade.

The long term structure of the industry indicates a further concentration of power with the commercial airlines. As such, the pressure is on supply companies to continuously innovate and increase investment in research and development. To remain competitive companies must become more strategic and increase productivity. Unite believes this can be achieved in a number of ways and these do not include out-sourcing or off-shoring.

Research shows that 2006 was an unprecedented year for the aerospace industry, with turnover increasing by 25% to £19.81 billion<sup>1</sup>. The sector employs over 124,000 people and supports a total of 276,000 jobs across the UK economy<sup>2</sup>. The industry provides high value, highly skilled work and has a strong commitment to the development of young people within the sector, employing 2,700 apprentices<sup>3</sup>.

Unite believes that with such a vibrant industrial base the future of the UK commercial aerospace sector is of vital importance to the industry, those who work in the sector and, more importantly to the future growth of the UK economy. It is for this reason that Unite continues to campaign for a greater recognition for its members employed within the sector and the vital contribution they make to the UK economy.



<sup>1</sup> SBAC - UK Aerospace Survey 2006

<sup>2</sup> ibid

<sup>3</sup> ibid

## Commercial Aerospace Companies

The sector is dominated by a small number of large companies. These include; Rolls Royce, Airbus, Goodrich, Bombardier and GKN. The sector also supports thousands of small and medium sized enterprises further down the supply chain.

### Airbus

Airbus is the civil aircraft manufacturing subsidiary of EADS N.V. a pan- European aerospace company. Airbus currently produces around half of the world's jet airliners and employs nearly 57,000 people at 16 sites across Europe. The company also has three subsidiaries, in the US, Japan and China. In the UK Airbus has two sites, Broughton in Wales employing 5,000 workers and Filton near Bristol employing 4,600 workers.

The wings for the A380 are made in the UK, while assembly takes place in France and Germany. The aircraft is powered by Rolls-Royce Trent 900 engines. Thales has developed and is supplying high format high resolution liquid crystal displays and is to provide the head up display.

Airbus is in continual competition with Boeing for aircraft orders. The A380 is seen as a larger alternative model for the Boeing 747 with a view that the A380 will reduce sales of the 747 thereby giving Airbus a greater share of the very large aircraft market.

### Rolls-Royce

Rolls-Royce is a world leading provider of power systems and services for use on land, sea and air. The company operates in a number of global markets including commercial aerospace. The company invests heavily in core technologies, products, people and capabilities to improve efficiency and productivity. The company also invests £2 billion per annum with suppliers<sup>4</sup>.

Rolls-Royce employs 40,000 people worldwide<sup>5</sup>. Annual sales total £7.4 billion<sup>6</sup>, of which 53% are services revenues. Rolls-Royce is established as the world's second largest engine maker in the world and the company provides the most comprehensive range of civil engines, providing engines for entry level business jets up to the latest wide bodied airliners.

Rolls-Royce predicts continued long term growth in all major segments of the commercial aircraft and jet engine market. The forecast over the next 20 years is for an estimated demand of 132,000 engines worth in excess of \$701 billion<sup>7</sup>. Markets within Asia, both short and long haul, will drive much of this growth. However, the mature markets in Europe and North America will also create demand for an estimated 6,000 new airliner deliveries to replace old or obsolete aircraft. This enables Rolls-Royce to take advantage of an aftermarket opportunity worth \$550 billion for services and parts.



### Bombardier

Bombardier aerospace is a world leader in the design and manufacture of innovative aviation products and services for the business, regional and amphibious aircraft markets. Total revenue for 2006 amounted to \$14.8 billion<sup>8</sup> and around 27,000 people work for the company overall. The company has production sites in Canada, USA, Belfast and Mexico.

The Belfast site employs 5,000 workers. Key components such as wings and fuselage of the CRJ700 and 900 regional jets are produced at the Belfast site. 2007 saw a significant growth in the demand for Bombardier products creating a more stable working environment for the workers at the site.



### Goodrich

Goodrich is a global supplier of systems and services to the aerospace, defence and homeland security markets. The company's annual turnover is in excess of \$5.9 billion<sup>9</sup> and more than 23,000 people are employed in over 100 facilities across 16 countries. There are a number of sites across the UK employing around 3,000 people.

The company's prime manufacturing capability is based in England, with support and maintenance operations in the US, Asia and Europe. Goodrich is one of the world's largest aerospace companies and growth has been driven by strategic acquisitions and innovation. From aero structures, actuation systems and landing gear to engine control systems and sensor and safety systems. Goodrich products are to be found on nearly every aircraft flying today.

In 2001 a joint partnership was created with Thales to develop frequency power for the A380 aircraft. This successful partnership was extended in 2005 with the contract awarded by EADS to develop the variable frequency power generation system for the A400M aircraft.

### GKN

GKN aerospace is a global independent first tier supplier of structures, components, assemblies and engineering services to aircraft and aero engine manufacturers. The workforce has expertise in all specialist aerospace manufacturing and design processes in addition to supply chain and logistics capability.

The global GKN company has 21 centres of manufacturing excellence in Europe, the Americas and Australasia. The total workforce of GKN is over 40,000<sup>10</sup> people with 3,000 workers in the UK. In 2006 GKN achieved sales of £3.6 billion<sup>11</sup>.

Around 60% of revenue for GKN is derived from the defence sector but recent significant acquisitions have increased GKN's presence within the civil market where it is a supplier on all Airbus programmes including the new A380. The company also supplies products to the new Boeing 787 civil programme and to aircraft engine manufacturers such as Rolls-Royce, GE and Pratt & Whitney.

<sup>4</sup> Rolls-Royce Company Report 2006, page 12.

<sup>5</sup> Rolls-Royce Overview at [www.rolls-royce.com](http://www.rolls-royce.com)

<sup>6</sup> ibid

<sup>7</sup> Rolls-Royce Company Report 2006, page 4.

<sup>8</sup> Bombardier Company Profile at [www.bombardier.com](http://www.bombardier.com)

<sup>9</sup> Goodrich Company Information at [www.goodrich.com](http://www.goodrich.com)

<sup>10</sup> GKN Group Overview at [www.gknplc.com](http://www.gknplc.com)

<sup>11</sup> GKN Global Business at [www.gknplc.com](http://www.gknplc.com)

# Challenges and Opportunities for the Sector

## Airbus

In February 2007, Airbus announced it was cutting 10,000 jobs across its sites in Europe. Production problems with the giant A380 fleet have cost the company in excess of £3.4 billion. The joint ownership structure – Germany and France - of parent company EADS meant delays to an agreement on the size and location of the job cuts. The scale of the job losses across Europe was announced and a statement was made that the loss of 1600 jobs was planned for the UK.

In the UK Airbus has two sites; Filton in Bristol and Broughton in North Wales. These sites specialise in producing the wings for the Airbus aircraft. The company employs around 10,000 workers at the two sites. It is anticipated that the 1600 prospective job losses for these sites would not be manufacturing jobs but would be staff on temporary contracts and through natural wastage.

Since then Broughton has been reaffirmed as the wing manufacturing centre of excellence with significant work from the A350 being undertaken at the site, however, Unite was concerned to see some of the work content being lost to other European plants. It is now known that Filton will receive significant investment in the site and the workforce to build a new composites manufacturing facility to supply the new family of A350 jets.

## Rationalisation

The rationalisation that has happened in the sector over the past decade has created a positive and pragmatic environment for the sector to flourish. UK commercial aerospace companies are renowned the world over for the quality of their products and the technical expertise and design capabilities of their employees. However, Unite would not want to see further rationalisation with jobs, intellectual property and R&D moved abroad.

Unite believes that the UK government needs to acknowledge this capability and ensure that everything is done to encourage overseas companies to buy UK commercial aerospace products. UK aerospace companies cover each and every aspect of the total aero-power train, not just for the UK designed and built engines, but for models across the world.

At a time when other countries have been leaving the aero power market as a result of fierce competition, the UK has not only maintained its position, but has strengthened its strategic place as a global competitor. The UK's capabilities in aerospace power allow it to be a supplier, provider and partner of choice in the world, both now and in the foreseeable future.

## Environment

The UK aerospace industry recognises its environmental responsibilities and is committed to helping to deliver a more sustainable aviation sector. The UK is the only country in the world to have a national strategy for sustainable aviation.

Environmental bodies have targeted aviation and its role in the climate change debate by suggesting that aviation could be responsible for up to 25% of greenhouse gas emissions. The Stern report has confirmed that aviation currently contributes less than 2% of total greenhouse emissions. However, global growth will see this level of emissions increase, and action by Government, industry and other nation states will be needed to contain and reduce its impact on the environment.



The inclusion of aviation in the EU Emissions Trading Scheme and the introduction of improved air traffic management will lead to significant improvements, but the sector is well aware that new, cleaner technology will be the key to delivering sustainable development. This can only be achieved by aerospace companies investing in research and technology programmes to deliver the improvements needed to reduce aviation's impact on the environment.

Over the past two years, manufacturers have responded to tough targets set by the Advisory Council for Aeronautical Research in Europe (ACARE) to reduce the environmental impact of air transport, including the need to reduce fuel consumption by 50% and NOx emissions by 80% for all new aircraft entering into service by 2020, compared with their 2000 equivalents.

In the drive towards more radical solutions to environmental impact, airframe manufacturers are looking seriously at new designs such as blended wing body aircraft. Engine makers are working on ways to incorporate open rotor and aft fans into their products. These initiatives are driven by research and development investment.

## Globalisation

The UK aerospace sector has become a major global industry. Many of the companies in the sector are multi-nationals, owning and operating facilities world wide. This has benefits and disadvantages for UK workers. On the one hand the unprecedented inward investment into these companies' means there is substantial investment coming into manufacturing in the UK and jobs are retained for UK workers.

On the other hand, multi-national companies are constantly looking to reduce costs and improve productivity. Because the UK has the most flexible workforce in Europe it is much easier to close sites in the UK and transfer work to other sites in Europe. Unite has campaigned tirelessly to address this issue. It is also clear that some multi-nationals are moving production to the USA to take advantage of the home market for their products and to mitigate the impact of dollarisation.

There is also evidence that some foreign owned new entrants into the aerospace market have access to significant funding from their governments to help them to develop their internal aerospace industry, including new commercial aircraft systems. Unite believes that the UK government must support and invest in the UK commercial aerospace sector if its strategic presence in the global aerospace market is to continue.

China and India are both areas with growing commercial aerospace industries. The lower cost of labour in these countries means they have a comparative advantage over workers in the UK. With significant growth estimated in both countries all stakeholders in the UK, Government, companies, the workforce and the unions must ensure they are doing all they can to keep jobs in the UK and also to retain the R&D and intellectual property within the UK.

## Investment in research and development

Unite recognises that one of the key requirements for growth in manufacturing output and the UK economy is investment in research and development and technology. Unite has widely promoted the importance of research and development investment to the sustainability of the sector to the present government.

However, there are still concerns at the current complexity of government research and development investment in the UK. It is clear that the current system is too slow, too complex and often involves working with various government departments, many of whom seem to have no rigorous forms of communication. What is required is a coherent, simplified strategy with overall control for decisions resting with one department.

Unite understands that all stakeholders within the sector would like to see a simplified application process and a more rigorous and transparent approach for the draw down of investment funds. An example of the problems currently happening is where a company applied for investment funds to develop more environmentally friendly processes and systems. The company had to apply to six different government departments, it took two years for the initial approval for the granting of the funds and there is still a delay in the receipt of the funds. This is not acceptable and can have a profound effect on the sustainability of the sector within the UK.

## Economic conditions

Fluctuations in the world economy and its impact on UK manufacturing and GDP cannot be underestimated. The recent credit crunch in the USA has had a serious impact on the US economy and the commercial aerospace sector. With the global nature of the aerospace industry there could be a significant impact on the sector around the world if the downturn in economic conditions is not contained. The cost of oil is also having an economic impact on the sector. With oil currently at \$90 per barrel, the profitability of aircraft operators, aircraft manufacturers and the supply chain is crucially linked with any shift towards rising inflation and recession.

## Exchange rates

The civil aerospace market is based on the dollar, however the costs for European manufacturers are mainly sterling or the Euro. As a consequence the slide in value of the dollar is having a significantly detrimental impact on aerospace company's profitability and competitiveness in the global market. For example, for every 1cent shift downwards in the value of the dollar, Rolls-Royce loses around £10 million in profit.

As a consequence of this some companies have already announced that they intend to reduce the risk of foreign exchange rate fluctuations by locating more work in the USA and others are investing heavily in hedge funds to try to mitigate some of the effects of this situation.

## Future Markets

Air travel is an integral part of life in the 21st century. More people fly now than ever before and the industry has evolved and grown considerable over the past three decades. As a consequence the industry is attracting new entrants in a variety of sectors from low cost airlines to low cost manufacturers. The challenge for UK manufacturers is to achieve the balance between securing orders for new aircraft in countries such as China who want to develop the manufacturing capabilities of their own workforce and ensuring that intellectual property and R&D remain in the UK.

Unite believes that the commercial aerospace sector is a booming growth area and the future holds even further growth with a diverse range of emerging markets. These are predominantly in India, China, the Far East and the Middle East. It is estimated that demand in the Asia-Pacific region will overtake the USA in leading the continued growth in air travel<sup>12</sup>.

New operators and owners are changing the way the market buys and uses commercial aircraft. The regional jet market is emerging as a clearly defined sector and external influences will affect the cost and nature of air travel leading to significant investment in the sector. All of these indicators will have a crucial effect on the growth and sustained viability of the sector. It has been estimated that the economic impact of air transportation will reach \$1.8 trillion per year by 2010, generating over 31 million jobs around the world<sup>13</sup>.

## Cape Town Treaty

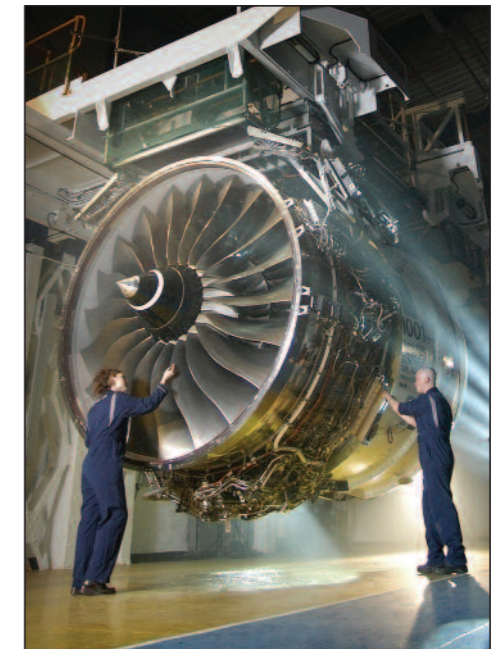
The Cape Town Convention was designed to provide a progressive framework for the financing of aircraft and engines. The agreement received widespread UK government support during its negotiation. The Treaty provides a clear legal framework for the recovery of assets in the case of a default. The Treaty also increases the availability of and reduces the cost of aviation credit.

The terms of the convention hold out enormous benefits to the UK aerospace industry by opening up overseas markets that are currently deemed too risky by financial institutions and broadening the range of commercial financing initiatives available to support the unprecedented demand for new aircraft in China, India and the Middle East.

The Treaty is now being dealt with by the European Commission. The so-called 'Gibraltar hold' has now been lifted after agreement with Spain on a lot of issues. The Commission have yet to decide whether the EU will ratify it, which would allow the UK to ratify under the European Act, or whether it will ask member states to ratify individually, which may mean finding time in the Parliamentary calendar for primary legislation.

Any further delay places UK companies at a competitive disadvantage, particularly because major competitor countries such as the USA have already signed up to the agreement.

Unite is hoping that there may be political pressure from the French during their turn at the EU Presidency in January – June 2009 to move this issue forward.



<sup>12</sup> PriceWaterhouseCoopers, Civil Aerospace in the 21st Century, page 3.  
<sup>13</sup> ibid, page 5.

## Skills and Training

It is clear that the commercial aerospace sector is one where the employees are highly qualified and highly skilled. A number of key reports however have indicated that a shortage of skilled employees may be hampering growth in manufacturing industry as well as limiting the potential for any changes in highly technical operational processes.

Unite is keen to see that companies within the sector do not become complacent about training their existing workforce. It is vital for workers to continue their training and development while in work and it is the employer's responsibility to ensure that the workforce has this opportunity. Skills gaps can become a serious issue within manufacturing companies and as such could seriously affect productivity.

The present government has made it clear that they want to see a highly educated and highly skilled workforce for the future growth and prosperity of the UK economy. There are two key factors driving demand for skills within this sector.

- Replacement demand – where job opportunities are created by retirement, occupational mobility and where there are skills shortages within the sector.
- Structural change driven by international competition – the important role of skills in improving productivity relative to international competitors cannot be underestimated. Structural change within the sector, such as the need to drive forward the environmental agenda, is broadening the types of skills required within the sector.

Unite believes that ensuring strong workforce skills is a matter of shared responsibility between government, employers, unions and individuals. Unite believes the government needs to take action to ensure that employers do train their staff and the only way of ensuring this happens is through the introduction of a statutory training levy. It is clear that trade unions have played a pivotal role in encouraging workers and employers to participate fully in the learning agenda, this role can now be extended to include on the job training and skills development for all workers.

Unite has consistently commented on the low profile that manufacturing has as a career option in schools. It is imperative that government, schools and colleges 'market' manufacturing as a dynamic career option for young people and especially young women, who are grossly under-represented in the sector.

## Power and lift

The UK aerospace industry is at the cutting-edge of aerospace power at all levels, from the largest new generation engines, right down to the provision of the smallest precision components. The UK industry is led by Rolls-Royce and has the strongest commercial position outside of the USA. Over 500 commercial airlines operate with UK made engines.

The strength of the UK aero power industry is in its depth. To make a complete engine for any type of aircraft, there are a host of different elements that all require the highest technology to deliver the final result. UK aerospace companies cover each and every aspect of the total aero powertrain, not just for UK designed and built engines, but for models from across the world.

Since the 1970s, the UK has been home to the centre of excellence of wing production for the Airbus consortium. This was as a result of the heritage that the UK possessed in wing technology that stretched back to the earliest days of flight. This background laid the foundations of setting up such a centre of excellence in the UK and the capabilities presently based in the UK around wing technology are not replicated anywhere else in Europe.

The creation of a wing centre of excellence has allowed longer-term investments to be made in support of the industrial effort. These investments have also been backed by the UK government to further the sustainability of wing capability in the UK and aid further expansion within the sector. This initial investment has created a very positive outcome; by attracting more companies with similar interests to re-locate to the UK and also for buyers to purchase products designed and made by UK workers.

The wing centre of excellence has also allowed investments in one technology area to be transferred, as appropriate to other areas. It has also meant that the UK supply chain in this sector has grown exponentially to keep pace with the change in technologies and production values. This also means that UK suppliers of wing sub-systems and sub-assemblies have been able to win business on other European aerospace programmes for such items as commuter aircraft, as well as on platforms from Canada, Brazil and the large USA programmes.

Unite believes that to facilitate the continued growth in the commercial aerospace sector it would be prudent for the government and other stakeholders to devise an industrial strategy for the commercial sector. This would enable companies to plan strategically and invest in the research and development required for future growth. The strategy should also include a commitment to invest in workforce training and development.

Unite also believes that the current manufacturing strategy needs to be revisited and updated, with clear objectives for manufacturing including the commercial aerospace sector.



# Unite Recommendations

- The UK government must ensure that UK workers have a 'level playing field' similar to that of other European countries.
- Unite would like to see the UK government produce an industrial strategy for the commercial aerospace sector, similar to that of the Defence Industrial Strategy.
- Unite believes the UK government should provide incentives for commercial aerospace companies to pursue and adopt a more environmentally friendly approach, by investing in the research and development of products that will assist this process.
- The commercial aerospace sector has a strong commitment to developing young people via the apprenticeship scheme. Unite would like to see this scheme extended to include adults.
- The long term productivity of the sector requires a commitment by all the stakeholders involved to invest in new skills, personal development and training for the existing workforce. If needed, a statutory training levy for employers would ensure this investment happened.
- The UK government must bring pressure to bear on the European Union to ratify the Cape Town Treaty.
- Government must ensure that any public investment in company research and development results in maintaining and creating jobs for UK workers.
- Unite welcomes the UK government's commitment to revisit and re-draft the existing manufacturing strategy and calls for full consultation with unions representing the commercial aerospace industry.
- There needs to be a leaner and more transparent strategy for investment in research and development from government.

