



Planes, Trains and Automobiles Research

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Executive Summary

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LIMITATION

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1. EXECUTIVE SUMMARY

1.1. Introduction

Derby has a strong industrial base across three complementary transport sectors, namely; Aerospace, Automotive and Rail. Within these sectors are a small number of world-renowned employers. Current strategic planning at city and regional level was formulated before the recent economic downturn. The recession has affected different industrial sectors to a varying degree. In the short term there are major decisions that have to be made, which could potentially have an enormous impact on the local economy and these three sectors.

URS Corporation were commissioned to; quantify the scale and impact of the three sectors and their supply chains; assess the strengths, weaknesses, opportunities and threats; assess the linkages and interrelationships between sectors; and make recommendations on specific local interventions.

1.2. Context and importance of the sectors

The following is a summary of the scale and significance of the three sectors. It is important to note that the report explores the three sectors in slightly varying geographies based on the total share of employment. This is discussed in more detail in the main report. In short the analysis of the aerospace and rail sectors relate to the local authority boundary of Derby with the automotive sector extended to Derbyshire.

1.2.1. Planes

The UK has the second largest aerospace market in the world, with the Midlands home to one of the largest clusters of aerospace companies in Europe. There are over 700 companies in the aerospace supply chain in the Midlands employing approximately 45,000 highly skilled workers. Over half of these firms are located in the East Midlands cluster.

Rolls Royce in Derby is the driving force behind the success of this sector in the region. The company supports many supply chain firms in Derby and 75% of the 700 supply chain firms in the Midlands are directly connected to Rolls Royce. The importance of this sector to the local, regional and national economy cannot be overstated. The following summary demonstrates this:

- The aerospace sector in Derby **contributes £4.6bn of economic output**¹ to the local economy – this is 27% of the total output generated in the City and is the largest contributor to output in Derby of all 123 sectors;²

¹ Including direct, indirect and induced outputs.

² Source: ONS, Supply and Use Tables, 2007 and URS calculations, 2009

- In 2007, the sector **directly employed approximately 10,338 people** within Derby, with a **total of 15,600 jobs supported** locally, including indirect and induced employment. The latter figure equates to 12.2% of all employment locally and 6% of all aerospace related jobs within the UK.³
- Employment in aerospace has **8.3 times the concentration** in Derby than the East Midlands and **8.2 times the concentration** than nationally;³
- Derby is **home to Rolls Royce, a major global brand**. The company has been established in the city for 100 years and is the largest single employer in the City with 12,500 employees, the majority of which are employed in the aerospace sector. It is the world's number two engine manufacturer overall and market leader for commercial jet engines. It currently supplies over 600 airlines and 160 defence customers and has over 54,000 gas turbines in service worldwide;
- **Other major regional assets** in the sector include; Goodrich Corporation (leading global supplier of systems and services to aerospace and defence sectors), Alcoa Inc (worlds largest manufacturer of aluminium goods), Dunlop Aerospace (providing braking systems), HS Marston (heat transferee and fluid management), Roxel (design propulsion systems) and Timet (Titanium and metals corporation). Also the Midlands Aerospace Alliance (supports and represents the aerospace industry across the Midlands), East Midlands Airport, and the University of Nottingham, and Loughborough University.

1.2.2. Trains

The East Midlands is the rail capital of the UK and is Europe's densest cluster of rail engineering companies. Similarly to the aerospace sector, the rail sector has a large positive impact on the local economy. The following bullets illustrate this:

- The rail sector in Derby **contributes £2.6bn of economic output**⁴ to the local economy – this is 16.6% of the total output generated in the City and is the 3rd largest industrial sector contributor.⁵
- In 2007, the sector **directly employed approximately 5,010 people** within Derby, with a **total of 8,500 jobs supported** locally, including indirect and induced employment - this equates 7% of all employment locally and 13% of all rail related jobs within the UK.⁶
- Employment in rail has 8 times the concentration in Derby than the East Midlands and 8.8 times the concentration than nationally.⁶

³ Source: ONS, Annual Business Inquiry, 2007 and URS calculations, 2009

⁴ Including direct, indirect and induced outputs.

⁵ Source: ONS, Supply and Use Tables, 2007 and URS calculations, 2009

⁶ Source: ONS, Annual Business Inquiry, 2007 and URS calculations, 2009

- Derby is **home to a number of major global brands**. This includes; Bombardier - the UK's only major rolling stock manufacturer, East Midlands Trains – one of the UK's major passenger train companies and Network Rail who provide the UK's rail infrastructure;
- **Other major assets** in the region in relation to this sector include; DeltaRail (a specialist software and technology provider), Interfleet Technology (an international rail technology consultancy group), Atkins Rail (global experts in both the mass transit and heavy rail markets), Universities of Nottingham and Loughborough (partners of Rail Research UK) and Derby & Derbyshire Rail Forum (promotes the area as a world class centre of rail excellence).

1.2.3. Automobiles

There is a strong presence of automotive businesses in the East Midlands. Employment is concentrated in a few areas of the region, where Derbyshire accounts for an impressive percentage share of the market. The automotive sector makes significant contributions to the local and regional economy:

- In Derbyshire it **contributes £3.1bn of economic output**⁷ to the sub regional economy.
- In 2007, the sector **directly employed approximately 17,000 people** within Derbyshire, with a **total of 22,100 jobs supported** locally, including indirect and induced employment - direct employment equates to 4.2% of total employment in the sub region.
- Derbyshire is home to **Toyota, a major global car manufacturer**. They are located just outside the City of Derby, currently supporting 3,540 jobs which account for approximately a fifth of the automotive workforce in Derbyshire. Also in the region, major players in the automotive sector include – JCB, Caterpillar and global German production company ZF.
- A high percentage of those businesses in the automotive sector in Derby belong to car **dealerships, repair and leasing companies**. They account for 92.6% of those automotive businesses in Derby compared to 75.8% regionally and 75.5% nationally.
- Recent public sector investments decisions from the UK government have assisted the automotive sector throughout the recession with varying effects across the industry, **significant investment has recently been announced by Toyota** to a produce a 'green' vehicle at its Derbyshire plant.
- Neighbouring region, the **West Midlands**, has a strong automotive cluster in the UK – accounting for more than 40% of car production and therefore a stronger

⁷ Including direct, indirect and induced outputs.

manufacturing base than the East Midlands. There is an opportunity here to make stronger links with the automotive sector in the neighbouring region.

- The **Motorsport** industry is an important sub sector and the East Midlands is home to Donington Park, Rockingham Speedway and Silverstone race tracks.

1.3. Output and employment contributions of the sectors

The following highlights the economic output and employment contribution of the three sectors across Derby.

Industry Description	Economic output ('07)		Employment ('07)	
	£m	% of Derby	No.	% of Derby
Planes, Trains and Automobiles (core)*	6,986	44.3	32,388	25.3
Aerospace (core)	3,055	19.4	10,399	8.1
Automotive (core)*	2,389	15.2	16,979	13.2
Rail (core)	1,542	9.8	5,100	3.9
Aerospace inc. supply chain	4,583	29.1	15,599	12.2
Automotive inc. supply chain*	3,106	19.7	22,072	17.2
Rail inc. supply chain	2,622	16.6	8,517	6.6

Source: ONS Supply and Use Tables, 2004-2007, Annual Business Inquiry, 2007 and URS calculations

** The automotive output figure relates to Derbyshire, but is shown as a proportion of Derby output and is therefore not strictly comparable*

1.4. SWOT analysis summary tables

PLANES	TRAINS	AUTOMOBILES
Strengths		
Rolls Royce Barriers to entry Established supply chain Skilled workforce Long lead-in time Long term growth High demand Aftercare market	Bombardier Established local supply chain International reputation/ history Highly skilled workforce Innovation and research centre Strong link with universities Expertise within DDRF Proximity to related clusters The sector is seen as green Large, long term contracts	Toyota Engineering heritage Skilled workforce Flexibility to market demand Links with rest of the world Transferable skills sets Proximity to West Midlands Vehicle Scrappage Scheme Highly desired consumable
Opportunities		
Environmental pressure Civil aviation Defence aviation Healthy backlog Supply chain development Perceptions Emerging markets Investment	Future Government investment Highly skilled workforce Willingness to work locally Sustainability agenda Work with local public sector Opportunity for R&D Exploit foreign markets Hitachi moving to region	Skilled workforce Environmentally friendly cars Lessons learnt from recession Scrappage Scheme Sustainability agenda Work with local public sector Motorsport industry
Weaknesses		
Reliance on Rolls Royce Reliance on civil aerospace Continued investment in R&D Negative perceptions Potential skills gap Susceptible to global shocks Global competition Barriers to entry	Over reliance on Bombardier Dependant on Govt investment Lack of graduates Uneven international competition field Low confidence for short-term Lack of some specialist professionals Inward looking Cyclical nature of sector Difficulties for new businesses Negative public perception Engaging with SMEs is difficult	Badly hit in recession Low consumer confidence High level of redundancies Lack of local cluster High levels of imports Used car market Limited opportunities Limited opportunities High fixed manufacturing costs
Threats		
Environmental pressure Global shocks Global fuel prices Global competition Composite Materials Reduction in supply chain Ageing workforce Reduced investment in R&D	Not winning Thameslink contract Losing more work internationally Current economic climate Cuts in Public spending Banks not lending Ageing workforce Poor image	Lack of opportunities Current economic climate Cuts in public spending Banks not lending Environmental restrictions Poor media image Losing work internationally

1.5. Future prospects of the sectors

There are a number of major investment decisions that will influence future activity in each sector. These could have a significant impact upon employment and economic output in Derby. We have presented three alternative scenarios of the possible impact of these activities over the next ten years. Employment scenarios were based on our consultations with key stakeholders by assessing the potential employment impacts of the opportunities and threats coming to fruition along with a review of historic trends. The scenarios cover optimistic, reference and worst-case scenarios. Economic output has also been forecast based on current output per employee calculations. Therefore the same percentage change is demonstrated as with employment. It is unlikely that employment and output would change at the same rate but the latter is shown for illustrative purposes. These are explored (including the definitions) in more depth in the [SWOT Analysis Section](#) of the full report.

Table 1 below presents a summary of the employment and economic output projections. The Rail sector demonstrates the greatest volatility of all the sectors with capability for the greatest percentage growth but also if not supported the greatest potential loss of employment.

Table 1: Employment and Output Scenario Estimates for 2009 and 2019

Scenarios	Employment			Economic output (£m)		
	2009*	2019	% change	2009*	2019	% change
Planes						
Optimistic	15,567	20,921	34.4	4,574	6,147	34.4
Reference	15,567	15,035	-3.4	4,574	4,417	-3.4
Worst case	15,567	10,089	-35.2	4,574	2,964	-35.2
Trains						
Optimistic	8,517	14,136	66.0	2,622	4,352	66.0
Reference	8,517	9,309	9.3	2,622	2,866	9.3
Worst case	8,517	1,716	-79.9	2,622	528	-79.9
Automobiles						
Optimistic	21,970	26,785	21.9	2,785	3,395	21.9
Reference	21,970	23,271	5.9	2,785	2,950	5.9
Worst case	21,970	17,680	-19.5	2,785	2,241	-19.5
* 2009 figures have been estimated using known employment and output figures for 2007, from ABI, and most recent JSA Claimant figures with the exception of rail which is taken from the Transport iNet database						

Source: ONS, Annual Business Inquiry, 1998 to 2007 and URS Calculations, 2009

1.6. Summary of key qualitative findings

The main issues, opportunities and threats that have been highlighted by the research are illustrated below. The main section of the report suggests a series of recommendations for addressing these. The key issues fall into the following areas:

1.6.1. Skills

These sectors generally suffer a poor image and are seen as “oily rag” trades. This is having a negative impact on the recruitment of graduates to work in the aerospace, automotive and rail sectors. This is despite local businesses in all three sectors identifying that there is a variety of good long-term career prospects within these sectors that people are not aware of. This again stems from an outdated and negative perception of work within these specific sectors and manufacturing more generally.

A substantial number of firms in these sectors suggest an ageing workforce and a loss of skilled employment due to retirement. They also suffer from a large number of skills gaps and consequently hard to fill vacancies. Ensuring that the existing workforce receives the appropriate training to fill these gaps and preparing, educating and training the future manufacturing workforce to address skill shortages is a critical element in supporting these sectors and wider manufacturing in Derby and the region.

1.6.2. Business support

The larger employers involved in the research process felt that the existing work and investment from public sector bodies to support the sector was of good quality and targeted in the right areas. However there are a number of issues and concerns that were raised that relate specifically to SMEs in these sectors. A number of smaller businesses that were consulted felt that public sector support and intervention was geared more towards larger organisations. SMEs also report a level of confusion and a general lack of awareness of targeted and specialist business support.

Another difficulty SMEs face is the lack of credit offered by banks in the current economic climate. Deposits for goods and services are increasingly needed up front, an area where small businesses struggle generally but is accentuated in current economic conditions. This is still an issue even where companies have orders guaranteed in advance.

1.6.3. Market intelligence, influence and collaboration

The central purpose of this research has been to gain a better understanding of the economic contribution that the three sectors make to the Derby economy. This improved intelligence can be used in a number of ways to support the sector in the future. The critical point here is that emda, Derby City Council and Chamber of Commerce can demonstrate a better understanding of the key sectors in the local economy to investors and government to help deliver further growth and support. This is a particular concern in relation to the rail sector in Derby where a significant number of jobs are reliant on a single manufacturer securing government contracts. This makes future business planning

more difficult and increases the risks of job loss and wider impacts on the Derby economy.

The evidence suggests that there is only limited interaction between the supply chains of the three sectors. Whilst there are some examples of collaboration between the larger employers this could be improved and awareness of new networks and organisations that have been developed for this purpose increased.