Employer Insights from South Yorkshire's Aviation Sectors Research Report

May 2025

KNOWLEDGE AND SKILLS SERIES.

Contents

Management summary - headlines

One of the features of the South Yorkshire Local Skills Improvement Plan (LSIP) is the development of a portfolio of knowledge and skills insights offering up to date intelligence on employer needs. This is a summary of findings from the fourth in a series of five employer insights undertaken as part of this work focusing on aviation businesses in South Yorkshire.

This report looks at skills now and in the future with a view to informing the valuable work of providers and those involved in the development and delivery of skills and training in South Yorkshire. It concludes with a call to action for providers and partners to respond to the skills pipeline requirements in advance of new opportunities at Doncaster Sheffield Airport (DSA).

Background

In terms of the context the aviation industry needs to implement automation, digitalization, and efficient seamless processes to manage projected growth. In parallel Fly Net Zero is a commitment by airlines to achieve net zero carbon by 2050. The airport of the future will be one of new, emerging, and changing roles in response to customer demand, innovative technologies, and environmental considerations.

This sector has a diverse range of career opportunities comprising of both *airport services* and *airport operations* (see here). There are also wider supply chain opportunities at DSA associated with the sector including clean energy such as SMRs, Hydrogen and sustainable aviation fuel. This will impact the whole of South Yorkshire and beyond.

DSA is in Gateway East, one of the largest mixed-use sites in the North within the South Yorkshire Investment Zone. It has five complementary areas including the airport which expected to generate 5,000 direct jobs. Munich Airport International GmbH (MAI) will provide operational and management services to FlyDoncaster, the airport's operator a wholly owned City of Doncaster company. The aim is to provide a vibrant and thriving hub airport offering travel, trade, and economic growth opportunities for South Yorkshire. It will support decarbonisation in the industry, defence and security applications and reshoring opportunities. There will be opportunities in lightweighting for aircraft and there have been several exciting recent announcements in hybrid vehicles, hydrogen and nuclear.

Aviation outlook and technology adoption

- Most aviation businesses were 'person centred' and had a strong commitment to their workforce. In a customer facing industry this was important. Cost constraints held employers back and an overreliance on shift managers, a geographically dispersed workforce and quite distinct roles made promoting a strong workforce culture sometimes challenging. Any support to help embed people centred cultures needs to be flexibly delivered in what is often a complex, multi-site and highly regulated environment.
- Aviation businesses are impacted by geopolitical issues such as trade deals and global unrest as well as socio economic shocks including the UK's Exit from the EU, Covid-19, and energy costs. These have resulted in market volatility and disrupted staffing and income models. Local issues include the closure of DSA and wider concerns around sustainability.
- Despite these challenges businesses were looking to scale up and achieve growth through investment and workforce expansion. For some the decision to re-open DSA and announcements of new investment to support this has influenced their investment plans.

Several interviewees wanted to modernise outdated systems through digital transformation. Other priorities included talent retention and succession planning in response to an ageing workforce and sustainability and environmental leadership.

- Future skills and qualifications were varied given the nature of the aviation industry and were spread across generic, themed, and specific needs. Soft skills, particularly around people skills, were highly valued. Aviation businesses with many non-technical roles explained how practical experience was valued over formal qualifications.

- Given the breadth of, and variation within, the aviation industry the future skills needs and associated qualifications required were varied and cover generic, themed, and specific skills. You can enter the industry with L1 skills. For entry level ground handling jobs technical qualifications were not required and practical experience welcomed and on the job training given.

- The sector is host to a considerable number of more specialised roles. NVQ levels 3-5 are required for engineering professions, degree level qualifications for supervisor and management roles and industry specific certifications for environmental specialisms. More experienced and specialist roles require level 7 and 8 post graduate qualifications. For trainee pilots and trainers an extensive amount of flying experience is necessary.

- Engineers and technical talent across design, production, maintenance, and data was a priority for many employers' skills pipelines. These roles are in high demand and poor local supply is forcing some firms to look elsewhere. There needs to be investment in Maintenance, Repair, and Overhaul (MRO) skills development including maintenance engineers trained for specific aircraft types and propulsion systems.

- The aviation sector has seen significant adoption of digital systems and processes. Businesses recognised a need for continuous training and development for digital skills given the pace of technology development. Security, ground handling and airspace management have all witnessed increasing digitisation and automation. Employers sought generic rather than application specific digital literacy such as the ability to use Microsoft packages which underpin a lot of the broader operational processes. Specific software training was provided on the job.

- Core digital literacy is a requirement for entry level roles and tiered customised digital learning pathways that align with real-world tasks and software systems.

- There will be more autonomous systems, advanced sensors, security verification and increasing demand for cybersecurity requiring increasingly specialised digital skills, data handling and technology skills including an understanding of quantum and supercomputing capabilities. The integration of robotics or AI-driven automation will still require human engagement to ensure safety. Access to foundational AI and automation literacy and awareness courses alongside industry specific applications will give employers a broader understanding of how it can be safely and effectively integrated into operations.

- The focus on sustainability will create new demand for green skills including those around hydrogen, nuclear and aerospace supply chain technologies such as lightweighting. The transition from conventional fuel in the 2030's onwards will require new or adapted training or apprenticeship standards for maintenance, logistics and ground storage workers, health and safety workers and fire and rescue staff to deal with new risks. Employers are adopting green initiatives and technologies. Publicising sustainable aviation business practice training and support would be welcome.

Aviation skills and talent pipeline

- There is a growing recognition that apprenticeships can support the development of aviation skills, opening pathways for young people and contribute to long term workforce planning. In engineering and maintenance and for back-office roles apprenticeships are a natural fit.
- Employers working in regulated parts of aviation discussed the unsuitability of apprenticeships, some roles required years of prior experience meaning apprentices could not step into them easily. For those considering apprenticeships there is scope to partner with providers to ensure apprenticeships can meet their needs.
- Employers need help identifying suitable roles for apprenticeships, preparing for supervision, and setting realistic employee learning expectations. Stronger communication between providers and employers could help prevent early dropout and ensure a good fit. A lack of visibility around apprenticeship options, and limited understanding of how to make them work, contributed to amongst some hesitancy.
- Future occupations will result in new and adapted apprenticeships. These could include those resulting from technological advancements such as hydrogen, fully electric aircraft, or drones. A review of existing provision is required to ensure it is future proofed with clear progression pathways from technician to manager.
- It is important that any training offered feels relevant, reflects the daily reality of the job, and paced and pitched appropriately to accommodate distinct kinds of learning styles.
- A critical requirement will be securing air traffic controllers and young people appropriate STEM skills for tower control and radar control opportunities. DSA will need 14-15 air traffic control staff. Ground handing operations will be required by DSA and flight instructors as well as airport rescue and fire-fighting services (RFFS). Engineering and electrical engineering are the most difficult areas to recruit into.
- Employers take different recruitment routes, some take a more structured approach with anonymised CVs, others rely on networks and reputation, and several introduced practical assessments.
- Larger employers typically had structured induction programmes with regular performance reviews and appraisal processes whilst smaller businesses were still developing these formal processes. Employers could be supported to embed staff development practices that are flexible, meaningful, and inclusive or simple tools to support learning on the job.
- Flexible working is not common in aviation. Many roles require staff to be present onsite due and much of it is customer facing.
- Larger employers often had formalised wellbeing support through dedicated services with employers emphasising the importance of staff feeling involved in shaping what was available to them. Employee wellbeing for smaller employers was more focused on culture than policy, favouring personal gestures. There is an opportunity to share good practice and support employers by embedding wellbeing into leadership development and staff training offers and design affordable, relevant wellbeing strategies.

Training the employees of tomorrow and offering the skills for today

- Training methods vary widely across aviation employers. Larger firms demonstrate in-house capabilities. Smaller firms often relied on informal training processes, led by experienced team members, offering a tailored approach.

- Aviation businesses highlighted the importance of aligning training provision with future airport-related demand and employers were keen to partner with providers to develop tailored courses and proactively address skill gaps.
- Compliance and safety training are often outsourced, for example airport security awareness.
- For management positions in particular internal staff development was prioritised over hiring externally. Mentoring and practical training plays a key role in leadership development. Often leadership development occurred less formally though some employers identified the desire to invest more in formal training and qualifications.
- In Munich Airport the team have a dedicated airport training academy on-site that exposes people to what an airport is like offering apprenticeships and dual degree programmes. They also offer CPD, internships and trainee programmes and entry level positions with hands-on experience and an innovation lab for new start-ups and spin outs.
- All employers emphasised the importance of continuous training and upskilling especially in relation to maintaining industry standards for roles such as engineers and pilots. Upskilling and training are often built into career development pathways. Employers said it was important to find a balance between meeting industry standards and not overwhelming employees.
- Businesses were keen to work with colleges and providers to shape new courses linked to identified skills gaps and new opportunities. Short, practical training sessions are preferred over content rich courses.
- The aviation industry is ahead of many others in relation to on-the-job training using VR/AR immersive environments with many organisations using it for workforce training. Despite reservations, most businesses are open to adopting VR/AR training and would be interested in learning more about the adaptability of these resources and any potential financial support towards new equipment/software. Examples of where VR/AR training may be welcomed include flight simulations and bridge inspections. This training must be developed in line with industry regulations and standards.

Employer Engagement

- The extent to which employers engaged with those further from the labour market is limited given the regulatory nature of the sector. Security clearance requirements mean many positions for ex-offenders are not available. That said, there is some good practice in the engagement of veterans and service leavers who are well suited to roles requiring discipline, resilience, and teamwork. Support from providers on reasonable adjustments, role matching and regulation support may overcome barriers to recruitment.
- Increasing the visibility of aviation and STEM opportunities in schools and colleges is vital to inspiring to next generation. The sector is facing growing competition for attention from other sectors and digital media campaigns, and promotions are required. Consultees highlighted the importance of real-world engagement, taking young people into workplaces or bringing practical demonstrations into the classroom. The opportunity to talk about low carbon aviation or green technologies will attract values driven students.
- Providers have a critical role in bridging the awareness gap collaborating with employers to co-design outreach activities that illustrate the full range of aviation careers, challenge stereotypes, and connect with young people early on.
- Some employers felt there was a mismatch between education curriculums and the aviation industry, resulting in industry skills gaps. They would be willing to support curriculum advisors to respond to these.

- While collaborations across the sector for training exist and there are strong sector specific networks in place, there is still some reticence to collaborating amongst smaller and more specialist firms where engagement can be driven by a desire to maintain market presence.

Study Conclusions

As noted, the skills pipeline will need to support the 5,000 or so jobs required to sustain the reopening of DSA and adjacent sites. This will require generic, more specialist and tailored provision to support the upskilling of the sector's future workforce. To facilitate this the skills ecosystem needs to be mobilised. Training will need to be sequenced in parallel to employer and DSA opportunities as they emerge. The substantial opportunities in the wider sustainability field, and in clean energy and specialist manufacturing will necessitate a substantial volume of engineers.

This report has begun to identify areas of future demand with skills requirements from L1-L8. Partners need to mobilise around the skills pipeline opportunities afforded by DSA. This is likely to require workstreams around Maintenance and Repair Operation (MRO), engineering and ground opportunities and ancillary services.

It is recommended that more detailed work is undertaken to assess the likely ebbs and flows of skills needed overtime and an academy type approach to procuring skills development is considered. Activity focused on inspiring the next generation and attracting digital savvy apprentices and graduates is an important consideration. As the sector embeds advancements in technology and progresses beyond the need for fossil fuels into more sustainable energy sources, specialisms in engineering and sustainable aviation will increase employer demand for new recruits and retraining of employees to keep pace with the sector's development. The airport's reopening provides a once in a generation opportunity to support skills development around an exciting cluster of sustainable aviation at the Gateway East Strategic site and beyond.

Preface

Local Skills Improvement Plans (LSIP) place employers at the heart of local skills systems to help support and drive change. This change requires direct and dynamic insights and intelligence. This report is part of a portfolio of knowledge and skills activities designed to articulate and elevate the employer voice including podcasts, skills zones, and skills teach-ins.

South Yorkshire LSIP background

Doncaster Chamber is the Employer Representative Body (ERB) for the South Yorkshire LSIP. They are collaborating with the two other Chambers of Commerce in South Yorkshire (Sheffield, and Barnsley and Rotherham), as well as the South Yorkshire Mayoral Combined Authority, South Yorkshire College Group, universities, independent training providers, partner business support and sector organisations and employers. The current LSIP was created in 2023 and runs until 2026, building on the 2021 South Yorkshire Trailblazer. LSIP is a strategic document concluding with thirty-six recommendations to improve understanding of employer needs and better align and inform the provider offer. These reflect the fact that employers, training, and education providers have unique perspectives, but similar and complementary aims. This ensures post-16 education meets local employer priorities and demand. The Government's English Devolution white paper confirms that mayors will be given "joint ownership" of LSIPs alongside ERBs[1].

The Aviation Sector

This sector report covers the aviation sector and its wider supply chain. This sector has a truly diverse range of career opportunities comprising of both *airport services* and *airport operations*.

Airport services encompass the activities and operations essential for the safety and comfort of passengers, as well as the smooth running of the airport. These services include ground handling, security, retail, and catering. Aviation logistics comprises several areas including customer service operations, inventory management, warehousing and distribution, transportation and freight management, ground support operations, MRO complex maintenance, repair and operation and reverse logistics and security and staging.

Airport operations include aeronautical services for passengers and airlines, and non-aeronautical services like parking and ground transportation. This sub-sector includes airport retailing, airport maintenance, facilities management, surface infrastructure and maintenance, equipment and vehicles maintenance and key maintenance elements such as inspection, servicing, overhaul, and repair.

There are also wider supply chain opportunities associated with the sector including clean energy such as Small Modular Reactors (SMRs), Hydrogen and sustainable aviation fuels.

As highlighted above, the current aviation ecosystem is varied and complex and there is a difference between larger and small airports and different skills needed for both commercial and general aviation.

The aviation industry needs to implement automation, digitalization, and efficient seamless processes to manage projected growth. In parallel Fly Net Zero is a commitment by airlines

---

[1] See FE week here

to achieve net zero carbon by 2050. The airport of the future will be one of new, emerging, and changing roles in response to customer demand, innovative technologies, and environmental considerations.

Report purpose and approach

This report is the fourth in a series to gain employer knowledge and understanding of local skills priorities. This will ensure the LSIP continues to be evidence-based and actionable, and education and training is responsive to employer and local labour market needs. It will help inform and influence curriculum development and employer engagement. The reports on Manufacturing, Construction and Lifestyle, Leisure and Culture can be found [here](#).

This work has been a collective effort between South Yorkshire Chambers, employers and providers and business support organisations. They collectively road-tested the employer questionnaire and told the research team what questions and issues they would find most useful. The concept behind this employer insights series was to interview up to thirty employers across the sub-region per sector, nominated by the chamber, local authority partners and business support specialists. For this report, the insights of aviation firms were the focus. Eighteen employers listed in Annex one kindly contributed to this report during January to April 2025[2] and included a half day workshop with the new operator and aviation specialists. They do not represent the whole sector and can only offer a snapshot of their requirements. The findings should be read with this caveat in mind.

Gateway East

Gateway East is one of the largest mixed-use sites in the North. A key site within South Yorkshire Investment Zone it has five complementary areas including the airport which expected to generate 5,000 direct jobs. These include an Innovation Quarter (IQ), 126 acres of airside development land as well as new housing and a central town centre plaza. Munich Airport International GmbH (MAI) will provide operational and management services to FlyDoncaster, the airport's operator a wholly owned City of Doncaster company. The aim is to provide a vibrant and thriving hub airport offering travel, trade, and economic growth opportunities. Later sections of this report will draw comparisons to Munich's operating processes in relation to DSA's future opening.

There is an ambition to support the growth of sustainable aviation and the jet zero innovation and development in a cluster that will support decarbonisation in the industry, defence and security applications and reshoring opportunities. The Advanced Manufacturing Research Centre will be able to expand its activities for in lightweighting for aircraft and there have been some exciting recent announcements in hybrid vehicles, hydrogen and nuclear. Holtec has announced its intention to manufacture parts for SMRs.

Report Contents

There are four key parts to this report. The first part (Outlook, Chapter 1) looks at future priorities in light of changes to aviation such as digitisation, decarbonisation and automation. Chapter 2 assesses current skills including apprenticeships, recruitment, and skills gaps as well as the talent pipelines. Chapter 3 discusses training provision for both current and future employees. The final Chapter (4) reflects on employer engagement and collaboration and concludes with a summary of what more employers and providers might do to align, collaborate and work together.

---

[2] This round of engagement was slightly lower than that of previous sectoral reports due to the in depth look at Doncaster Sheffield Airport and the smaller pool of employers in comparison to larger sectors such as retail.

Aviation outlook and technology adoption

This chapter looks at why a people centred approach in the aviation industry is important. It considers future workforce skills and how might these affect employer investment in skills and their asks of providers. It concludes with a brief assessment of how Artificial Intelligence and Automation might affect skills acquisition and provision.

People centred businesses

How deeply do South Yorkshire aviation firms understand what their team members need to do their best work and feel they have a happy workplace culture? When asked 'are you a people centred business?" using a rating of one to ten, the majority of those who responded scored themselves an eight or higher. Only three respondents scored themselves lower all citing seven.

Aviation firms have a strong commitment to their staff and feel that people centric cultures are important in an industry which is customer facing. Businesses felt they promoted team cohesion. Many respondents aspired to improving internal relationships.

> *"Our entire business is centred around training people so we would rate ourselves close to ten. We are a pure service organisation…people are at the core of what we do."*

Despite this, employers acknowledged that there is still room for improvement and recognised that cultivation of strong workplace cultures was an ongoing process. Cost constraints held several employers back. An overreliance on shift managers, a geographically dispersed workforce and vastly distinct roles sometimes made alignment of company values challenging.

> *"We're a business, you have to work to the bottom line and that comes with some constraints, you can't do all the things you'd love to do. We would love to give everybody in the company a full maternity and paternity package of, say, full pay for a year, but that is unaffordable. We would love to give everybody, 45 days holiday, but that is unaffordable. We would love to communicate better, but we are located over many sites. We have a very eclectic and diverse workforce from people who are engineers, design engineers, production engineers, or maintenance engineers…and keeping everybody on message is sometimes difficult."*

> *"There are things we can do better. Understanding what people want from the workplace. We rely heavily on our managers to bring that back to the central team and because we work a lot of different shifts, we often do not see as many of the employees as we could. There is not that kind of interaction on a frequent basis. We rely on a shift management team to have that interaction."*

> *"I think one of the things that gets missed is we cannot deliver as efficiently when we are all over the place as we can when we're under one place. The effect of that is, if you like, less customer satisfaction, therefore more stress on the business, therefore more stress on the individuals and a less happy workforce."*

Any support to help embed people centred cultures would need to be flexibly delivered in what is often a complex, multi-site and highly regulated environment.

Future business priorities

South Yorkshire's aviation sector has faced several challenges; global, national, and local. Current global geo-political issues such as UK-US trade deals and tariffs are a concern for aviation manufacturers in accessing materials. Nationally the impacts of Covid and the UK's Exit from the EU have resulted in market volatility and disrupted staffing and income models and compounded existing financial and workforce issues. Rising operating costs and difficulties in accessing funding streams have further inhibited growth.

"I think for everyone, obviously Covid was a particular challenge. We lost a many people and were operating a skeleton crew we were lucky to stay in business."

"The biggest challenge we face is securing funding. As a pre-revenue business, our priority is to obtain the last tranche of finance needed to establish our production facility in South Yorkshire. We have observed redundancies and business closures across the industry. Financial challenges are a universal issue, but as a pre-revenue business, our situation is quite unique."

Locally the closure of Doncaster Sheffield Airport (DSA) had significant impact for the sub-region both financially and in relation to skills supply and the workforce with fragmented teams resulting in reduced service quality.

Looking to the future many businesses were looking to scale up activity and grow through investment and workforce expansion. For some this was in response to the decision to re-open DSA. One firm was looking to secure funding and certification to become a major OEM, another was targeting the opening of new facilities and increasing their market presence whilst elsewhere building client relations and job creation were also cited.

"Over the next decade, we aim to become a fully established Original Equipment Manufacturer (OEM) with an integrated manufacturing, assembly, and testing operation. We anticipate significant workforce growth, with plans to create 1,200 skilled jobs across South Yorkshire and the UK supply chain."

Several interviewees wanted to modernise outdated systems through digital transformation. Digitisation is discussed further in [section 1.2](#)).

"Technology first - get the data reduced to a manageable size, coming off the vehicles and then start the analysis within the office."

Other priorities including talent retention, succession planning in response to an ageing workforce and sustainability and environmental leadership.

"We would like to be the first sustainable ground handling agent in the UK."

Future skills and qualifications

Firms were asked what future skills are important for their workforce and how might this affect their investment in skills and their requirements of providers.

1.1.1   Future Skills and Qualifications

Given the breadth of, and variation within, the aviation industry the future skills needs and associated qualifications required were varied and cover generic, themed and specific skills (see also [here](#)). Outside maintenance and operations for entry level ground handling jobs technical qualifications were not required and, on the job, training is offered to new recruits. Some firms sought GCSE levels as a basic benchmark, but employers felt they had

extensive knowledge within their organisation and developed training processes to upskill new employees and offer more complex training on the job.

"Not exceedingly high levels of education. It's GCSE level education, and then it's bespoke training, which usually an airport would provide in house. Airports develop training managers for security, and their job is then to train. It's similar with check in."

Given the customer facing nature of the sector soft skills and interpersonal competence were valued. The increasing use of technology in passenger interactions means employers also seek a degree of digital competency in new recruits. However, communication and passenger experience skills will still be required alongside the advancement of technology (it is less able to cope with these areas). This has been recognised as a hospitality type approach with skills including emotional intelligence, resilience, and the ability to relate to people.

"My main ones, which are non-negotiables, are pretty much communication, teamwork, and an ability to work under pressure…being tech savvy is preferred."

Practical experience was also commonly prioritised over more formal educational attainment. Real-world experience and previous exposure to the sector was useful as a well as technical knowledge. It was not always easy to replicate the practical application of this knowledge in a classroom environment. For instance, legacy equipment meant some employees had to think on their feet.

"What you need is that exposure to real-life… advanced degrees and all the rest of it, they're great for theory, but that practical application in real world scenarios [is what is needed]."

"We work on a lot of old equipment that doesn't have instruction manuals and it's problem solving and learning as you go."

The sector is host to a sizeable number of more specialised roles which do mandate qualifications. NVQ levels 3-5 are required for engineering professions, degree level qualifications for supervisor and management roles and industry specific certifications for environmental specialisms. Some experience and specialist roles require level 7 and 8 post graduate qualifications.

"Half of our workforce are engineers, from design engineers (highly specialized), through production and maintenance engineers, all well specialised. We have pilots, again, well specialised, assistance systems operators who are well specialized and we have a whole department of data analysts, also very well specialised."

For pilots and trainers within flight schools an extensive amount of experience is necessary. To become an airline pilot (ATPL), trainees need 1500 hours of flight time.

"Experience is the most critical factor. Training new pilots requires instructors with at least 30 years of flying experience."

Engineers and technical talent across design, production, maintenance, and data was a priority for many employers' skills pipelines. These roles are in high demand and poor local supply forcing some firms were forced to look elsewhere. This means there would need to be investment in Maintenance, Repair, and Overhaul (MRO) skills development. Maintenance

engineers are trained for specific aircraft types and propulsion systems and the skills needed are dictated by the licences the engineer holds and for the different aircraft they maintain[3].

"We are now trying to persuade some of our staff to move up to Doncaster…we couldn't find the technical knowledge and ability within South Yorkshire."

1.1.2   Digital Skills

The aviation sector has seen significant adoption of digital systems and processes. In 2023, airports and airlines invested heavily in IT, spending an estimated $10.8 billion and $34.5 billion, respectively[4]. Occupations across the sector have been transformed, for pilots, between 70-90% of tasks such as flight control, navigation and engine and system management are now automated[5]. Security, ground handling and airspace management have all witnessed increasing digitisation and automation. For firms within South Yorkshire's aviation sector, the transition to a digital-first process is very much underway. Businesses have already adopted many digital tools such as customs software to produce and manage manifests and shipping documents, machinery to support activities within cargo sheds and fully remote air traffic control towers. There is a move to paperless travel and digital identity technologies.

"There's a team in Liverpool using radar services on the ground and there's a lot of innovation whereby air traffic control towers can be remote and fully digital."

"We will adopt any technologies and acquire any tools that will make our staff more efficient. We have had new systems introduced over the years, and absolutely, there will be more of them coming."

In line with this shift in digital adoption, employers placed an emphasis on the need for digital skills across their teams. Digital adoption can result in efficiencies, increased speed, and fewer errors. Employers sought generic rather than application specific digital literacy skills such as the ability to use Microsoft packages. These underpin many broader operational processes. For more specific software, businesses had robust training processes to support new employees.

"You've absolutely got to be IT literate, excel spreadsheets, word documents…we're scanning a lot of things, we're producing a lot of manifests and shipping documents that are all done electronically. Customs software is already installed in within our systems and new recruits and employees are trained and upskilled when necessary."

The pace of digitisation across the sector does pose challenges, not least as requirement for continuous training and upskilling. Some firms highlighted generational gaps in digital skills, with older workers requiring additional training and newer recruits overestimating digital fluency. One firm also cited the impact of CAA regulation in limiting the extent to which digitisation can be incorporated within training packages and another interviewee referenced the cost limitations of digital infrastructure.

"I have been amazed about how many people have come in, particularly the youngsters, that don't know the simple parts of how to use Excel and Word."

"The pace of change is something that people are struggling to keep up with. There's a need for digital skills but as people are training and gaining those skills, because of the way

---

[3] https://assets.publishing.service.gov.uk/media/65379e7c1bf90d000dd844c7/dft-future-skills-strategy.pdf p23.
[4] Symphony Solutions, How Digital Transformation is Changing the Airline Industry, 2024
[5] Euro Control, Digitalisation of aviation: insights for experts, 2024

technology is evolving, people gain those skills, they've got them, then [by then] something else is coming to play."

The provision of core digital literacy and office software training packages for entry level roles and access to tiered customised digital learning pathways that align with real-world tasks and software systems are required to support upskilling and reskilling.

1.1.3   Green Skills and Hydrogen

There is an ambition for DSA to be a sustainable aviation hub supporting new developments in sustainable aviation fuels and aircraft with new propulsion systems including electric and hydrogen. The transition from conventional fuel in the 2030s onwards will result in a requirement for new skills. This will require new or adapted training or apprenticeship standards for maintenance, logistics and ground storage workers. Health and safety workers will be needed and fire and rescue staff to deal with new risks.

Employers are acutely aware of the sector's impact on the environment and are actively prioritising and embedding sustainability within their organisations. While regulation and client expectations play a part in sustainable practice, for many businesses it is a fundamental part of their operations.

"Number one priority, safety. Number two, decarbonisation."

"Sustainability is at the core of our business."

Employers are adopting green initiatives and technologies and increasing their sustainability through a variety of means. Some firms prioritised a digital approach, using carbon calculators, software, and modelling systems. Others were using sustainable fuel systems such as plant-based diesel alternatives and hydrogen fuel cells, and one firm specialised in the development of hybrid zero emission aircraft.

"Our IT guys wrote the carbon model for Department of Transport, and we've introduced that into our into our system."

"Our hybrid aircraft is designed to be a zero-emission aircraft in the future, transitioning from kerosene-fuelled engines to hydrogen fuel cell-powered engines."

Whilst there many cases of good practice across the sub-region and sustainability is at the forefront of the aviation agenda, employers acknowledged several transition challenges. Aligning green goals with current business practices, costs and economic pressures was hard. The pace of technological advancements and reliance on legacy gas fired industrial processes is not matching sustainability ambitions. The excessive cost of hydrogen fuel cells is a current significant barrier to their widespread adoption, making them less competitive than other energy sources, including fossil fuels.

"We're waiting for technology to catch up, and obviously, as an aviation company, the vast majority of our footprint, in all its forms, is burning fuel, and there's nothing we can do about that."

"Hydrogen at the moment, I think the airport can't afford to get into that yet."

Another firm referenced the mismatch between government targets and policy and the capabilities and demands of industry and the wider supply chain.

"You've got a mismatch with government targets for net zero by 2050, and then you've got industry…we as an industry recognise, we need to get to net zero. The industry wants the

cheapest possible steel, so they're still importing it from China, Brazil, and India, who are all using coal fired traditional steel because it's cheap. When you look at it from an ESG point of view and the whole life cycle of that, the carbon footprint is still massive."

As noted, adoption of sustainable practice is also weakened by potential skills gaps. New sustainable ways of working require new skill sets and awareness of where to access relevant training. This was highlighted as a barrier by some firms.

"When we did the initial scope and exercise of what do we need? Have we got the skills internally? It was a case of, no, there's a big gap. Then when we scoped out, can we bring people in? and we saw huge cost, I think it's something that is going to be the norm in the future...there is definitely a gap, and people need more support and training moving forwards."

Publicising sustainable aviation business practice training and support would be welcome. An example cited was the MSc in Sustainable Air Transport offered by the University of Salford and Airport Carbon Accreditation Level 5. There is a clearly an opportunity to inform and understand the implication of jet zero ambitions and future job roles are likely to require a greater understanding of the sector's transition.

Automation and AI

Artificial Intelligence (AI) and digital twins[6] means providers will need to focus on generic data and technology skills. There will be more autonomous systems, advanced sensors, security verification and an increasing demand for cybersecurity skills requiring quantum and supercomputing technologies to process data faster and quicker[7].

While digitisation has become prevalent across the sector, the automation of operations and the integration of AI is more varied. For some employers AI usage is limited to back-office functions such as the use of AI in marketing and data forecasting. Innovations like predictive analytics and omnichannel systems allow airlines to understand passenger behaviours, creating seamless, personalized journeys.

Others have innovated significantly. One firm had developed a 360-degree camera that runs through AI.

"We have a 360 camera that's like a Google Street View that runs through an artificial intelligence process to extract condition data, and it's now learning to extract inventory information."

The role of robotics has expanded in airports automating tasks such as baggage handling, aircraft towing and maintenance and customer interaction tools such as facial recognition and wayfinding apps. Here automation and AI are seen as tools to enhance productivity rather than replace jobs, streamlining tasks and ensuring teams operate more effectively.

"AI is not going to take away anybody's job. What it is going to do is it should make us more efficient and effective."

Others were more sceptical about its use and the viability of adoption. Hands on and high-risk roles were felt to require manual human engagement to ensure safety. One business in aviation manufacturing felt the complexity and low-volume nature of their processes did not

---

[6] A digital twin is a virtual representation of an object or system designed to reflect a physical object accurately. It spans the object's lifecycle, is updated from real-time data and uses simulation, machine learning and reasoning to help make decisions.
[7] DfT Future Skills Strategy 2023 p28

align with automation. The high level of regulation across the aviation industry was also perceived to be a barrier to the integration of robotics or AI-driven automation.

"The problem with AI, and it will come into aviation at some point, but the basic operation of cargo is, here's a pallet on there with a fork truck, put over it, weigh it, and put it onto the aircraft. If AI was to decide on any of that wrong, then you've got people's lives at stake."

"As a highly regulated industry, aviation does not easily integrate robotics or AI-driven automation. Instead, we will focus on improving efficiency through digital tools and training where necessary."

Access to foundational AI literacy and awareness courses along with industry specific applications may support South Yorkshire's aviation sector to develop a broader understanding of how AI and automation can be safely and effectively integrated in their operations.

Aviation skills and talent pipeline

This chapter looks at skills pipeline for the sector, exploring how employers are using apprenticeships and tailored training to address skills gaps. It highlights recruitment challenges in areas such as engineering and air traffic control. It also considers how flexible working; wellbeing support and staff recognition are helping to attract and retain a resilient aviation workforce.

Apprenticeships in the aviation sector

2.1.1   Using apprenticeships

Apprenticeships in South Yorkshire's aviation sector were provided in diverse ways reflecting each organisation's size, maturity, and priorities. While some businesses have established schemes, others are only beginning to explore their potential. What unites them is a growing recognition that apprenticeships can support the development of skills, open routes for young people to enter the industry and contribute to long term workforce planning.

In engineering and maintenance, apprenticeships are a natural fit. These roles involve practical skills that are best learned through direct experience. One business described a programme where young people join from the age of sixteen and are supported by more experienced staff throughout their apprenticeship training. The training is seen as effective in producing competent staff and fostering loyalty and commitment.

"You just breed this amazing group of professionals within our own organisation. They've grown up in the company. They're skilled and they're good people."

"We're currently recruiting three apprentices to start in engineering, maintenance, and testing. We've done more this year than in any other - attending fairs, improving our offer, and putting ourselves out there."

Businesses have also taken on apprentices in non-technical roles in administration, procurement, human resources, and facilities. One employer said they had tried out roles across several departments and found that "by and large, they've worked pretty well." Others mentioned opportunities in compliance and clerical work. These are essential parts of the aviation sector and are often well suited to apprentices looking to start a career and gain sector-specific knowledge.

"The admin work needs doing and it's crying out for young people… build that talent pipeline."

"I was an apprentice, and now I'm the General Manager. We've promoted others through to the projects team and the service desk."

For training providers, the message is clear, training support needs to be tailored to where each business is on its journey. This may mean helping to design programmes, offering recruitment support, or advising on apprenticeship funding. It is also important to promote the full range of roles where apprenticeships can add value, not just technical positions.

2.1.2   Barriers to apprenticeships

Employers shared mixed experiences with apprenticeships. One infrastructure provider found it was challenging introducing some apprentices to outdoor, hands-on roles. The work was physically demanding, and employer/learner expectations were not always aligned. Apprentices did not always want to start at the bottom or stay engaged with repetitive tasks. This made it difficult to build a solid foundation.

"They didn't like being on site in the wet and the wind… You've got to learn from the ground up. There are simple jobs that you need to do, but you need to do and understand them well."

A few employers experienced issues with commitment and reliability with some apprentices failing to attend regularly or lacking motivation to follow through on their training. One employer said the situation became disruptive, especially where team members were pulled away from their roles to manage disengaged learners. Others linked the breakdown to a lack of support from the training provider and weak coordination between all parties.

"Not many of them actually saw it through, and there wasn't the support there."

"We had people we wanted to develop, but they didn't show up or they were half-hearted. Then you've got people being pulled away from their own jobs just to deal with that."

Small and mid-sized businesses faced challenges. Employers said they often lacked the time or resource to run a placement well, even if they liked the idea in principle. Some described apprenticeships as only workable if there was a clear operational gap or plan to grow. Others felt the pressure of managing apprenticeships alongside day-to-day demands.

"We're a small team. Unless we're looking to bring another person into the team, I'm not sure that an apprentice would be a great way to do that… we're not ready for that."

Sector specific issues also played a role. Employers working in regulated parts of aviation said apprenticeships were not always suitable. Some roles required strict background checks or years of prior experience, which meant apprentices could not step into them easily. These employers tended to offer apprenticeship opportunities in administrative or back-office roles.

"We need someone who can step in with five years of clean background checks - sometimes apprenticeships don't align with what the job requires."

"Some roles are better suited to experienced professionals because of the risk involved. Apprenticeships just aren't always the right fit."

Others noted practical barriers such as travel and site access. In some cases, it was difficult to see how apprentices could fit into the flow of the business at all. A lack of visibility around apprenticeship options, and limited understanding of how to make them work, also contributed to hesitancy.

Training providers can help make apprenticeships more viable by offering clearer guidance and hands on support. Employers need help identifying suitable roles, preparing for supervision, and setting realistic expectations for learners. Stronger communication between providers and employers could help prevent early dropout and ensure apprenticeships are a

good fit for both sides. Where security and compliance are barriers, providers should collaborate with employers to map out alternative pathways into the sector. Mentoring, workplace readiness training and tailored onboarding support would also make a difference especially for smaller businesses with limited time or resource.

It is important that aviation apprenticeship standards are sufficiently versatile and pre-emptive of the knowledge and skills required for future occupations at DSA. This could include new roles as a consequence of technological advancements such as hydrogen or fully electric aircraft or drone engineers or maintenance operatives. A review of existing provision will ensure it is future proofed with clear progression pathways from, for example, level 2 (L2) technicians, to L4 supervisors and managers at L6.

Recruitment and skills gaps
2.2.1   Key training and skills sought
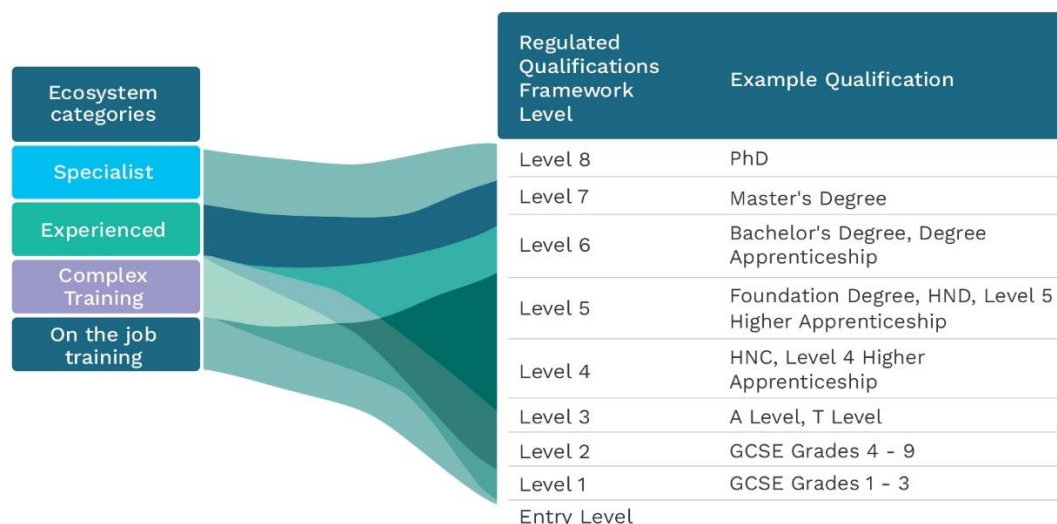
Source: Current Skills Pathways, Future Aviation Skills Strategy, Engagement Report - Skills needs in Aviation, July 2023, p25

The training and skills requirements for different aviation roles typically fall under four non-exclusive categories (see illustration):

- On the Job Training (OJT) is provided by employers during onboarding and often no formal qualification or training is required to work in the role.
- More complex training roles requiring a licence or assessment. Onboarding or pre-role training requires complex training.
- Experienced roles requiring a degree or equivalent / substantial experience and specific knowledge or skills but not to a specialist level.
- Specialist roles require a degree and potentially post graduate study with substantial experience.

2.2.2   Effective change management strategies

Some employers described employees hesitant or slow to engage with new systems, digital tools, or workplace processes. It was often linked to uncertainty, old habits, or low confidence. Several employers said even capable experienced staff sometimes found the pace of technological change overwhelming or difficult to navigate and feared being left behind unable to keep up.

"The resistance is not to change, but the world is changing rapidly, and I'm not sure that people want to keep up with it... people are resistant to anything that feels like it's imposing on their privacy."

"People aren't resistant to training about cyber security. That's okay. But they don't want software on their personal phones... They just don't like the intrusion."

Change was sometimes shaped by a person's career stage or position within the organisation. Some employees were enthusiastic about development, while others were comfortable where they were and didn't see the need to progress. In these cases, supportive employers build confidence through gentle encouragement and staff felt supported and more receptive to learning.

"It's not replacing you. We still need you… What I can do is spend time with you, teaching how to use Word, Excel, PowerPoint. For me, that's an investment."

Some operational staff did not oppose training but instead prioritised day-to-day tasks. If training was not clearly linked to their immediate role, it was more likely to be postponed.

"They don't see the importance… it just keeps getting put on the back burner."

"Some people that have been here for quite a long time and have done things a certain way… it's very much accepted rather than challenged."

It is important that any training offered feels relevant, reflects the daily reality of the job, and paced and pitched appropriately to accommodate distinct kinds of learning styles. Equally line managers need the tools and confidence to lead change from within with upskilling making jobs easier, safer, or more rewarding. Creating space for staff to ask questions and express concerns, without judgement, was found to build trust and improve uptake.

2.2.3   Hard to fill vacancies

A critical requirement and one of the biggest threats will be securing air traffic controllers and young people with the right STEM skills for tower control and radar control opportunities. It is estimated that DSA will need some 14-15 air traffic control staff. Some controllers retired early after Covid and there is a national shortage which is taking a long time to replenish. South Yorkshire will need to grapple with this opportunity now so in three years' time supply will match demand. This is a critical part of the facility and described as a 'red flag' in terms of planning urgency. There are also national pilots' shortages. DSA will require the provision of airport rescue and fire-fighting services (RFFS) too with adequate equipment, fire-extinguishing agents, and professionally trained personnel to respond to emergencies efficiently. Bournemouth has offered an in-house RFFS training model.

Ground handing operations will also be required. They are an integral part of the aviation system, directly contributing to flight and aerodrome safety[8]. In Munich they rely on staff from Eastern Europe to fill ground handling shortages working on 3-6 month contracts during holiday seasons. They are offered affordable staff housing and language training as park of the package.

Employers across the sector consistently pointed to engineering and electrical engineering as the most difficult areas to recruit into. These roles were described as both highly specialised and increasingly scarce. The shortage is not new, but many felt it had become more acute in recent years, especially with the loss of experienced staff. When senior engineers leave, employers said they are not just losing a skilled worker, but also someone capable of mentoring others. This has made recruitment and succession planning more difficult, particularly in areas like metallurgy and advanced maintenance where few local workers have relevant experience.

"We used to refer to it as a grey tsunami. People getting into their mid-fifties and then thinking I have not got a mortgage anymore. Kids have left home. Do I need to be standing in an aircraft hangar?"

"Engineering in particular. And again, technical roles. Simply because the type of metallurgy that we do is different to other people. Very few companies in this area. People do not come with that experience."

The flight schools we spoke to also noted early-stage shortages in some essential roles including helicopter instructors. This is an area where closer collaboration with education partners could help build supply pipelines.

Beyond technical roles, employers also flagged difficulties in recruiting to business development, dispatch, and other operational positions requiring a mix of technical understanding and commercial skills. These roles often span departments and client-facing work and many candidates were seen as lacking the right mix of experience. In some cases, employers said the challenge was due to higher pay being offered in other sectors. In other roles had changed over time. This was especially the case since the pandemic, and it was becoming harder to find people who matched current expectations.

"Retaining pilots and then recruiting pilots can also be particularly challenging. The gas and oil sector especially up north is paying in some cases almost double the salaries that any onshore pilot would get."

"We are trying to find a northern business development manager that can serve a number of areas. Now we are finding that difficult to fill. That role has disappeared since Covid. People do not do it the same way anymore."

---

[8] Roles include Ground Administration and Supervision, Passenger Handling, Baggage Handling, Freight and Mail Handling, Ramp Handling, Aircraft Services, Fuel and Oil Handling, Aircraft Maintenance, Flight Operations and Crew Administration, Surface Transport and Catering Services.

Training Pathways

Employers would welcome clearer pathways into engineering and technical roles, focusing on early opportunities to experience the sector, hands on learning, and career progression. For hybrid roles, modular or cross functional training could help widen the pool of candidates.

2.2.4   Recruitment processes

Some businesses had clearly structured recruitment processes with clear stages, anonymised CVs, and diverse interview panels to reduce bias and ensure consistency. These employers emphasised the importance of values and cultural fit.

"We anonymise CVs and ensure diverse interview panels to promote inclusive hiring."

Elsewhere, recruitment was far more informal, relying on networks, reputation, and trust. This was especially common in smaller businesses or those with strong industry ties. These employers said experience mattered more than processes and hiring often took place through word of mouth or personal referrals.

"There is no formal process. Recruitment is based on networking, experience, and trust within the industry."

Entry level or administrative jobs were usually advertised on sites like Indeed or LinkedIn. For more specialist or senior roles, employers turned to headhunting or sector-specific recruiters.

"When it comes to specific jobs like design engineers, we headhunt because they are very difficult to find."

Some introduced practical assessments or informal previews of the role to help judge likely candidate fit. For hands on or operational jobs, candidates were asked to complete a task or visit the workplace before being offered a role.

"We want to see them do a task… it gives us something to talk about in the interview."

"We also understand that this environment, heavy industry, doesn't suit everybody… you might not realise it until you're in it."

There was also concern that traditional interviews and competency questions could exclude people with strong practical skills but weaker academic backgrounds. Some employers were adjusting their recruitment process to allow candidates to demonstrate different strengths. Prospective trainees should be supported to prepare for a range of recruitment processes from formal interviews to practical tests, and informal chats. Employers could be supported to design tasks that reflect the real demands of the job and make recruitment more inclusive. By bridging the gap between candidate readiness and employer expectations, intermediaries could help improving recruitment outcomes across the sector.

Staff development and career pathways

Staff development across South Yorkshire's aviation sector ranged from formal appraisal systems to more informal, on-the-job learning. Larger or more established organisations typically had structured induction programmes, regular performance reviews, and appraisal processes in place. However, even in these settings, engagement varied. Some employees

embraced the opportunity to learn and progress, while others were more reluctant. Staff motivation played a key role in how well systems were used.

"Some of them don't want to be assessed... you've got 20 percent who are super keen, 20 percent who couldn't give a hoot, and 60 percent who are in the middle."

In smaller or growing businesses, formal processes were often still developing. But there were still opportunities for staff progression particularly through exposure to different teams and responsibilities. In many cases, employees were encouraged to take on a range of tasks across departments building skills through experience rather than structured planning.

Some employers used competency frameworks and structured inductions to support early development, particularly in safety-critical roles. Longer term progression, however, was often shaped through regular one to ones or open conversations. Staff were invited to share what they needed or where they wanted to grow, making development more collaborative.

"We incorporate it as part of their reviews and take their feedback... where they feel they'd like to develop that way, they're automatically engaged."

Leadership style played a key role in how development tools were experienced. Supportive managers used appraisals to build confidence, while others described poor leadership as a barrier to meaningful progression.

"It gives them a good feeling, like, actually yeah, I can do that... it's confidence building as well."

"It depends how honest the leadership are about what they're using them for… I've seen it done well where it's motivating… and I've seen it used as a battering ram."

Employers could be supported to embed staff development practices that are flexible, meaningful, and inclusive. This includes offering tools to map progression pathways, training line managers to hold productive development conversations, and ensuring that appraisals are used to motivate rather than manage performance. Where formal frameworks do not exist, providers or business advisors could help employers make the most of informal development by offering conversation guides, mentoring structures, or simple tools to support learning on the job.

"If somebody joins you as an admin assistant but they have aspirations to be head of department… what does that route look like?"

Flexible and hybrid working

Flexible and hybrid working arrangements vary significantly across South Yorkshire's aviation sector, shaped by the nature of roles, company culture and operational demands. For businesses in engineering, logistics and aircraft handling, the physical nature of work means flexibility often cannot include working from home. Many roles require staff to be present onsite, with organisations describing clock-in systems and shift structures as a necessary part of safe and efficient operations. However, even in these settings, there is often scope for flexibility in start times, compressed hours or accommodating personal circumstances.

"If you fly a plane, you physically have to be there. If you fix a plane, you physically have to be there. But we would encourage… output based, flexible working."

Some employers offer hybrid working for corporate, administrative, and project-based staff. In these cases, a pattern of two or three office days per week is common, with the remainder worked remotely. Employers described how this model helped improve recruitment and retention, especially in post Covid labour markets. However, many still encourage regular in-person time to maintain team cohesion, informal problem-solving and shared knowledge. Others emphasised the need to protect business integrity and security, with remote access limited by regulatory standards and cyber protection measures.

"Employees work one or two days in the office and the rest remotely… we will adapt our policies as we expand into production roles."

"To work from home, you've got to have company equipment… we've had to put so many extra layers in."

"One of my colleagues… he works at home in his bedroom when he lives in Newcastle, and he's been at home all the time… he's able to cope with that, but I've been conscious he's missed out on things."

In smaller firms, flexibility is often managed informally. Adjustments are made case by case to accommodate childcare, medical needs or travel issues. Compressed hours and time-off-in-lieu are used to manage workloads, with the emphasis on trust and output rather than fixed hours. One employer explained how employees could request short notice time off or shift their schedules without formal processes. However, others reported a tightening of policies, particularly in larger charities or regulated environments, where flexible working had been scaled back in favour of clearer rules.

"If you want to do 40 hours Monday to Thursday, have a long weekend, then yeah, that's no problem to me."

"Previously, they used to be a lot more relaxed about flexible working… but there's been a significant change across the executive, and they're tightening up on that."

Training provision needs to typically accommodate different working patterns across the sector. For onsite ground staff roles, digital learning with flexible modules allows remote access around fixed shift schedules would support uptake. As hybrid working becomes a recruitment differentiator, providers also have a role in helping employers think through the culture and communication tools that make it work. There may be employer demand to assist managers to develop internal policies and balance flexibility in the workplace with performance, especially where teams are split between remote and onsite work.

Employee wellbeing and celebrating success

For larger businesses, wellbeing support was often formalised through dedicated services, mental health first aiders, and private health schemes. One employer described a multilayered offer including private insurance, an Employee Assistance Programme, and a confidential peer support network for air crew. Another noted that take up of healthcare schemes was driven by employee choice:

"We polled all the staff... we had a budget... and 100% went for the healthcare package as they get access to a doctor and pharmacy straight away. That was really important."

"It's been highly successful because it gives the employees a voice… whether it's a cycle to work scheme or electric car charging points… people value it."

The emphasis in these organisations was not only on availability of resources but also ensuring that staff felt involved in shaping what was offered.

Elsewhere, wellbeing support emerged through culture rather than policy. In smaller or more local companies, leaders described open door practices, flexibility around time off, and a readiness to respond to personal challenges. One manager explained,

"There was no written policy. It was just a case of come to me if you need something. If someone needed anything at all, they could have it. We were a local company, small team. You didn't need a procedure for kindness."

"30 years ago, you might have said 'pull yourself together'. Now we put an arm around them, and if needed, we'll get them a counsellor and pay for the sessions."

Some recognised the need to do more. One employer was keen to build on existing mental health support by introducing wellbeing events and targeted health checks.

"We've talked about doing something simple, like drop in blood pressure checks... or having a HR person trained as a mental health responder who can be referred cases if a manager has concerns."

A preoccupation with performance metrics or lack of resource in small teams held some organisations back. Despite this there was wide recognition that wellbeing was linked to staff retention, motivation, and productivity.

"If you ignore how people tick, you won't get the best from them. But if you listen, adjust and make space for difference, you can build loyalty and resilience."

When it comes to celebrating success, smaller businesses often favour personal and informal gestures, from handwritten thank you notes to spontaneous team outings. In some workplaces, individual managers are empowered to reward excellent work with small tokens like gift vouchers or a meal out. These actions may seem modest but were seen by staff as meaningful, particularly in organisations without large HR departments. The key, employers said, is making staff feel seen and valued for their efforts whether through a Friday breakfast shout out or a well-timed word of thanks. Some firms are starting to introduce more structured approaches, such as feedback systems linked directly into team communication platforms or reflection sessions in team meetings. But many emphasised that recognition works best when it is timely, authentic, and shaped by the culture of the team.

"Sometimes it's just a little thing, like someone saying, 'Well done, you kept people safe today,' and giving a voucher or a letter from the MD. It's not about the money - it's the moment of saying thank you that really counts."

There is an opportunity to share good practice and support employers by embedding wellbeing into leadership development and staff training offers. This could include helping managers understand mental health signals, offering guidance on building inclusive cultures, or providing workshops on communication styles and emotional intelligence. Training can also help SMEs design affordable wellbeing strategies relevant to their context.

"There are few people who can do the same thing every day without getting bored. It's about understanding what makes people tick... sometimes there is a way to square the circle."

Training the employees of tomorrow and offering the skills for today

This chapter looks at employer approaches to training and leadership development and offers some insights for providers on training provision. Aviation employers are developing their workforces in preparation for the reopening of Doncaster Sheffield Airport. It highlights how businesses are identifying and addressing skills gaps and working with providers to shape tailored training solutions. Training delivery is explored including immersive technologies like VR/AR.

Training models and provider engagement

3.1.1   Training models

Training models varied widely across aviation employers, reflecting their specific operational focus, compliance obligations and internal capacity. Many delivered much of their training in-house, particularly for operational or job-specific learning. Onboarding often involved shadowing, task-based observation, and live demonstrations. These were sometimes supported by structured training packs or competency checklists.

"We have a clear induction plan... within operations we have competencies, and they form a pack. During probation, they go through these. It's kind of 'show me, tell me,' and then they get signed off."

"We do classroom and physical - they go on the ramp, or they go to the check-in desks and observe, and then they have a trial."

Blended learning was commonly used, with online training modules covering mandatory or compliance content such as health and safety, dangerous goods handling, or general security training. These were then reinforced through practical application or supervised on-the-job activities.

"For me, my training model will be a blend of all that stuff. I would hate for a staff member I know could thrive, but they're not processing it through PowerPoint. When I take them on the ramp... they're absolutely thriving."

"We've got it quite well covered - it's a mix. Some is done through online systems and logged, some is done on the job, and some with external providers."

Regulatory and accredited learning such as fire safety, first aid, or general security awareness training (GSAT) was typically procured externally, while routine operational skills remained in-house.

"If you took pilot training, for example, a lot of that is done internally. If you took fire, we might do that externally. If you took dangerous goods training, you might do that externally... there's not one training program that fits all."

Smaller organisations often relied on experienced team members or managers to deliver training in a less formalised way. This allowed for a tailored and responsive approach, often building broad capability and encouraging staff to learn across multiple functions.

"The most useful days have been short, sharp, and snappy... a practical session. When it's too in-depth, people start switching off."

In more technical roles such as X-ray screening or aircraft loading, training was hands-on, often involving repetition, supervision, and continuous evaluation.

"Some people become brilliant at loading the aircraft. So, there's training on that side as well... admin training, X-ray, the ramp, machinery, all of it."

"We're teaching them how explosives are made and how to detect them. That's the level of detail into which you must get into."

In Munich Airport the team have a dedicated airport training academy on-site that exposes people to what an airport is like and accelerator lab campus with Lufthansa with four small start-ups on site. The lab offers a hub and contemporary setting for aviation innovation and an incubator for the local community. The academy offers twenty-three apprenticeships. They taught 236 students in 2024 including real estate, ground operations and HR and dual degree programmes in partnership with universities and offered over 40,000 training days. They provide a mix of training for their own team and companies linked to the airport including CPD and formal training. They also have internships and trainee programmes and entry level positions and offer a very hands-on experience with trainees working in every department.

3.1.2 Communicating training requirements and skill needs

As the aviation sector in South Yorkshire grows stronger due to the development of DSA, businesses highlighted the importance of engaging in conversations with training providers to ensure that provision will meet the emerging needs. This will help fill key skills gaps and ensure residents access to employment opportunities. Training providers will be able to act as strategic partners to aviation businesses operating in and around DSA, helping them to embed themselves in the cluster as the aviation sector grows and the Gateway East ambitions are realised.

"We were involved a lot in conversations, both about our site, but also [about] supporting others in inward investment and supply chains across the sub-region."

Companies procured external specialists to undertake skills audits, collating intelligence on skills gaps and employee aspirations, and informing the provision of appropriate training.

"We had an external company come in called [X] and they sat and did an hour's meeting with each employee to find out where they want to go and stuff like that. And then she came in and compiled all this evidence."

Businesses were keen to work with colleges and providers to help shape new courses linked to identified skills gaps and new opportunities. This would increase recruits with appropriate skills reducing the reliance on in-house training.

"Our concept could very well be that with the UTC we could say we need to train people in X, and we can build a course with the UTC where [people are] trained through them to build on those gaps before we start training them in house."

New and intermediate leadership

Internal promotion was often prioritised above hiring externally for management positions. It enables employees to see a clear progression route ensuring new managers are familiar with company processes and operations.

"You create a far better environment if you're getting people that can come into your work and learn and know that they can go further rather than just bringing somebody in from outside. … I think personal development in that way works a lot better, because there's always more skills you can take on."

Training packages in management processes and leadership (such as ILM Levels 3-7) are offered to staff who are likely to receive a promotion or who have additional day-to-day responsibilities that may require new learning. Key management skills required included confidence and conflict resolution. Some felt formal leadership qualifications could be too theoretical. One business developed their own practical, in-house management training. Munich Airport offer management training short courses, typically over five days, covering sustainability, quality management and business models and they have operational courses too covering warehouse and customer service operative as well as cyber security and airport security.

"Managers are expected to go through the managing safety programmes, they're expected to go through managing the difficult conversations, discipline, grievance, looking at investigations. We have recently had some of our managers pass on the ILM to Level 3 training as well."

Mentoring was commonly to pass on knowledge to early career employees and aspiring managers. This helps to ensure that valuable knowledge is not lost following retirement and upcoming leaders are well equipped to maintain standards. There was an aspiration to support more *"homegrown"* directors and managers at DSA.

"As we grow, we will require skilled managerial staff. We are already fostering leadership development through coaching and mentorship programs, which will be expanded as we scale. "Mentoring is up there for me … [the] younger and older generation, they can really work together."

"It's an opportunity for DSA where we can have, in say 10 years' time, homegrown MDs of airlines coming through … there might be not an aviation UTC per se, but they could be supported through the colleges … there's good progression opportunities in the sector."

Fewer business had formal progression pathways in place, with promotion sometimes based on manager discretion. However, some businesses talked about scaling up their leadership skills development and investing in more formal leadership training and qualifications.

"One or two members of staff have either joined us from outside and come in and [we've] got one or two members of staff have done [training] off their own back. But we don't now, sponsor or support that, although that could be something that will be introduced soon."

How training providers can meet firms needs

Ensuring that training content is fit for purpose and aligns directly with industry needs was important. This could include developing specialised courses relating to ground or maintenance operations. Tailored management courses would be welcome. The scenarios an aviation manager might face are quite unique. The ability to customise content would be appreciated so training can be adapted for employees at various levels.

"It'd be great to see kind of some training that is directly related to heavy industry and heavy machinery."

"It's got to be something that's engaging and relevant to all middle managers. When it's too in depth, people start switching off. Often it is the practical side people relate to."

One business felt that the provision of mock equipment, such as a software system or engine procured specifically for training purposes, could support employees to gain hands-on experience without the risk of damage or extensive time constraints. Another mentioned the potential of virtual learning environments (discussed later).

"If there was somebody who had a load of equipment that could be messed around with that didn't affect anything - like if they could have fake [IT equipment] and come in and do a hands-on training that would be useful."

Businesses highlighted the importance of training content at a variety of levels and price points. A one-size-fits-all approach could exclude some from being able to access training due to a lack of time or lack of finances. Employers would appreciate greater autonomy to tailor training and remove unnecessary modules and the ability to negotiate a cost reflecting the volume of content require.

"[In relation to what providers could offer] A specific training package that's tailored to your company, both in terms of price and content and time."

Upskilling

All companies emphasised the importance of continuous training and upskilling. For instance, ensuring pilots and engineers keep industry standards, can evidence mandatory skills such as health and safety training or specialised compliance training.

"Pilots and engineers must do regular training. It's mandated. They're always doing training, which means we're over a barrel. We can't not do it."

"It is in the context of our approach to training and development and the fact that we are a regulated industry. There are different types of training required - whether it is compliance, a holistic approach to individual development, or to match our values."

New skills and mandatory training are often built into career development pathways. Some businesses also offer optional training, often developed in line with requests employees have made. Sometimes this was accredited. Examples included Storage Equipment Manufacturers Association (SEMA) qualifications and a Consignment Security Certificate (CSC) qualification.

"There's no real limit on training. If someone comes and says, 'I want to do [training],' we absolutely do it…. We put a lot of people through their finance exams, through their AAT and their SEMA qualifications."

Short, practical training sessions are preferred over content rich courses. Whilst e-resources can be helpful to understand the 'theory,' hands-on training run over the course of a working week was seen to be more engaging and result in greater employee participation. Finding a balance between ensuring employees are supported to reach industry standards without overwhelming them with out-of-hours training on top of their full-time work is a challenge for those looking to upskill their employees.

"Feedback from people is they don't learn by death by PowerPoint, and then all the long, lengthy assignments which people ended up going to do in their own time, because trying to work full time, but then also do all these assignments, it just wasn't right."

On the job training and VR/AR immersive environments

This sector is ahead of many others in this area. Many organisations have already adopted VR, AR, or immersive workforce training. Immersive environments and simulation-based training is especially common in relation to emergency preparedness such as exit drills for cabin crew and pilots. They provide realistic and interactive experiences, giving staff the opportunity to develop their skills in a safe and controlled environment.

"We did a simulator on exiting an aircraft, and it is full of smoke. The younger generation, they are all up for it. If I could get as many training resources as possible [in] virtual reality, practical videos, guest speakers, whatever resource I can use that will benefit my company."

Companies have also adopted or considered AR/VR to train employees on aircraft inspection, saving the costs of procuring a plane or hanger for training purposes. This allowed newer engineering and maintenance staff to build their confidence and competencies before moving on to service the planes in operation. AR and VR was highlighted as a cost-effective way to deliver training to newer staff.

"When it comes to future operations - the ground operations and the pilot training, how you take off in the aircraft, how you demonstrate the aircraft - there have been conversations around using virtual reality in the simulation process, where people can see the scenario in virtual reality and they can learn from it, react to stimuli, and train in that environment."

However, even though AR and VR does have immense potential to train and upskill employees, the cost of adoption was prohibitively expensive for some. Updating and maintaining technology can be expensive and there is a risk training virtual training material could quickly become out of date. It is also important that providers ensure that VR training is customisable and applicable to the needs of a specific company and able to reflect real-world scenarios.

"There are talks about it. Obviously, it comes with a cost, so we will need to see if and when this is going to be adopted, but it is certainly being explored."

Despite some reservations most businesses are open to adopting VR/AR training. They would be interested in learning more about its applicability and any potential financial support towards new equipment/software. Examples of where VR/AR training may be welcomed include flight simulations and bridge inspections though it needs to be developed in line with industry regulations and standards.

"We're developing some VR for inspections of bridges and remote areas. It will form part of our training. We teach learners the defects they are looking for. Training in an office location would be good."

Employer Engagement

This last chapter looks at how the South Yorkshire aviation firms are inspiring the next generation and working with those further from the labour market. It considers how they are partnering with providers and what more could be done.

Talent Pipeline

4.1.1   Working with those further from the labour market

The extent to which South Yorkshire's aviation sector engaged with those further from the labour market, such as ex-offenders, long-term unemployed, or those returning from illness or military service varied. For many, regulations and security requirements limited engagement with some cohorts. Employers highlighted the legal requirement for a clean criminal record and for candidates to pass five-year background checks. These rules are not employer developed policies, but industry standards enforced through aviation regulation.

"Nobody can apply who has a criminal record or who cannot prove where they've been for at least the last two years. You won't be allowed on site until you've been approved."

"We need someone who can step in with five years of clean background checks… it's not about being selective it's just the rule."

Even where employers were open in principle to recruiting those further from the labour market, these regulations created practical barriers such as lengthy delays in reference checking, especially for applicants from retail or hospitality. Outside of aviation security roles there was more openness. Some employers had taken on staff with previous addiction dependencies or extended periods of unemployment. Others were exploring partnerships with organisations supporting veterans or returners. However, cost and capacity often shaped what was possible. Employers noted that while people from these groups could be excellent workers, they sometimes required extra support, which smaller businesses struggled to provide.

"We've taken people on those programmes before. Some were brilliant. But if they're coming in their late thirties or forties, they expect a certain salary, and we can't always meet that upfront…. Nobody wants to be on ten grand more than the person next to them just to be trained. If there was a subsidy, we'd do more."

Several employers had links to the Armed Forces Covenant or attended military transition events and utilised veterans specifically for roles requiring discipline, resilience, and teamwork. However, others pointed out that certain aviation jobs such as ramp or ground handling might not be suitable for those with physical limitations or PTSD. Matching the right role to the right individual was seen as key.

"They're more than welcome, but I would have to put them in a department that's suitable - say, customer service, not ground handling."

While most employers expressed a willingness to consider candidates further removed from the labour market, there was caution around risk and reputation particularly in safety critical roles. For some, the reputational or operational risks were seen as too great to justify taking on ex-offenders, regardless of personal circumstances.

"Prison leavers is an instant no for me. I wish them all the best, but not in this industry. It's too much of a high risk."

Providers can support inclusive recruitment by helping employers identify which roles are viable for different cohorts and navigating the limits imposed by regulation. For example, supporting employers to build links with veteran transition programmes or returner networks could create safer entry points into the sector. Providers can also offer advice on reasonable adjustments and role matching, ensuring people are placed in environments where they can thrive. Where extra support may be needed such as mentoring, salary subsidies or job coaching providers can help employers understand what is available regionally and nationally.

4.1.2   Inspiring the next generation

Employers were open to engaging young people, but many acknowledged that this could only be meaningful if the sector itself offered visible, long-term opportunities. The sudden closure of DSA had left a mark on the local community. Employers spoke of a lingering sense of mistrust that would take time and investment to repair.

"People need reassurance more than anything. That there's a future to be had at the airport. When Peel Group closed it overnight, it shook people's belief in the sector. If you want the next generation to commit, they need to believe it's worth committing to. That takes more than a school visit, it takes jobs, leadership, investment, and consistency."

Outreach and education activity was happening, but not always consistently. Several employers were working with local schools, colleges and UTCs to promote aviation and STEM careers. Some said the work was rewarding but demanding. They stressed the importance of real-world engagement taking young people into workplaces or bringing practical demonstrations into the classroom.

"For me, you have to touch it, see it, smell it to really understand the industry. PowerPoint slides don't cut it. Outreach only works if it sparks something and that means being there in person, showing them how things work."

Employers with strong sustainability goals said this often resonated with younger audiences. The opportunity to talk about low carbon aviation or green technologies was seen as a hook for more values driven students. At the same time, there was a shared view that careers education did not always provide an honest or rounded picture of the roles on offer.

"It's great when students say they want to work in travel or be cabin crew, but some think it's glamorous, and it's not. It's physically hard, it's emotionally draining, and you're constantly on your feet. Some students have no idea what the job involves, and they're not being told the full truth at college."

Traditional industries were facing growing competition for attention from tech, creative, and digital sectors. One employer said that roles in aerospace engineering could feel invisible to the TikTok generation unless actively promoted. Some were using early outreach to engage even younger audiences. One described a youth club style initiative aimed at primary aged children, using digital media and activities to build early interest.

"I ask my nieces and nephews what they want to be, and they say YouTubers. No one says aerospace manufacturer. Even though the jobs we offer are fascinating, technical, skilled - it's hard to make them attractive to young people unless their parents already worked here."

"It's called The Crew. It's a platform for kids - videos, facts, games. They're signing up to learn about the emergency services. There's 2,000 of them now. We're trying to create a spark early and show them that they belong in these sectors."

Providers have a critical role in bridging the awareness gap. This means working with employers to co design outreach that shows the full range of aviation careers, challenges stereotypes, and connects with young people early. Support should extend to teachers and careers advisers, ensuring they can explain routes into aviation beyond traditional university pathways. Providers can also help develop sector wide messaging and employer toolkits to promote practical, meaningful engagement across the region.

4.1.3   Partnering with education and skills providers

Partnerships between employers and education and skills providers are common across the sector, although the level of maturity and strategic planning varies. Some organisations partner with education providers to showcase the opportunities available in the aviation sector to younger generations. They aim to raise awareness of the industry and inspire young people to consider careers in aviation.

"Whether it's attracting talent into the area…or whether its retaining talent in the region."

"Last year our school teams reached about 65,000 students, so there's a huge amount of engagement on that side."

Those without such partnerships in place, demonstrated a willingness to engage with schools and education providers in the future. Some referenced the barriers including a lack of strategic coordination and current outreach activities being delivered on an ad hoc basis. Employers also felt there was a mismatch between education curriculums and the aviation industry, resulting in industry skills gaps. Certain careers like quality assurance, logistics planning, or control room operations (careers essential to aviation) were invisible in mainstream careers advice. The pressures schools face including Ofsted requirements and budget constraints seen as barriers to engaging with industry in non-curricular activities.

"No one leaves school saying they want to be a quality manager, because they've never heard of one. That's a failure of the system. The only jobs students know about are the ones they've seen on TV, on TikTok, or on a careers wall that hasn't been updated in five years."

The sub-region's lack of a developed aviation ecosystem with industry linked pathways contributes to a lack of local talent pipelines. A DSA skills offer could provide an industry specific curriculum and a bespoke training addressing skills gaps.

"Doncaster can reinvent itself as an Aviation Centre of Excellence."

4.1.4   Sectoral and supply chain collaborations

Some organisations cited active collaborations and long-term relationships with large international companies.

"We've got this long-standing partnership…we will always be saying to them these are the kind of people that we need in our industry."

Sector specific networks within the aviation industry are strong. With an *"established network of aviation companies that will offer training."* Aviation procurement companies cited working closely with providers, supporting, and attending training courses and sharing knowledge of industry challenges including skills gaps and hard to fill vacancies and discussing

collaboration opportunities. Smaller niche companies simply have less opportunities to collaboration.

"There is only one competitor for us in the UK…so there isn't a lot of discussions between the two because we're competitors."

Some referenced a hesitation to collaborate unless it offered a clear benefit to the company. One firm identified that collaboration simply was not a priority under their current five-year plan. While participation in sector-specific networking events was common, it was driven more by the need for market presence than an intention for collaborative engagement. Reflecting a low level of strategic collaboration through industry events. Strategic facilitation may help encourage engagement and collaboration and unlock regional value in the sector.

Appendix one: consultees

- 2Excel
- Anglo World Cargo
- Children's Air Ambulance
- Chris Cain
- Chris Harcombe
- Danum Fulfilment
- Dolphin ICT
- First Aviation
- FP Airports
- Hybrid Air Vehicles
- Mo The Airport Guy
- Munich Airport
- SCC Steel Construction
- Special Metal Products
- The Aviation Ground School
- TransGlobal
- Travelmaster
- Xais PTS