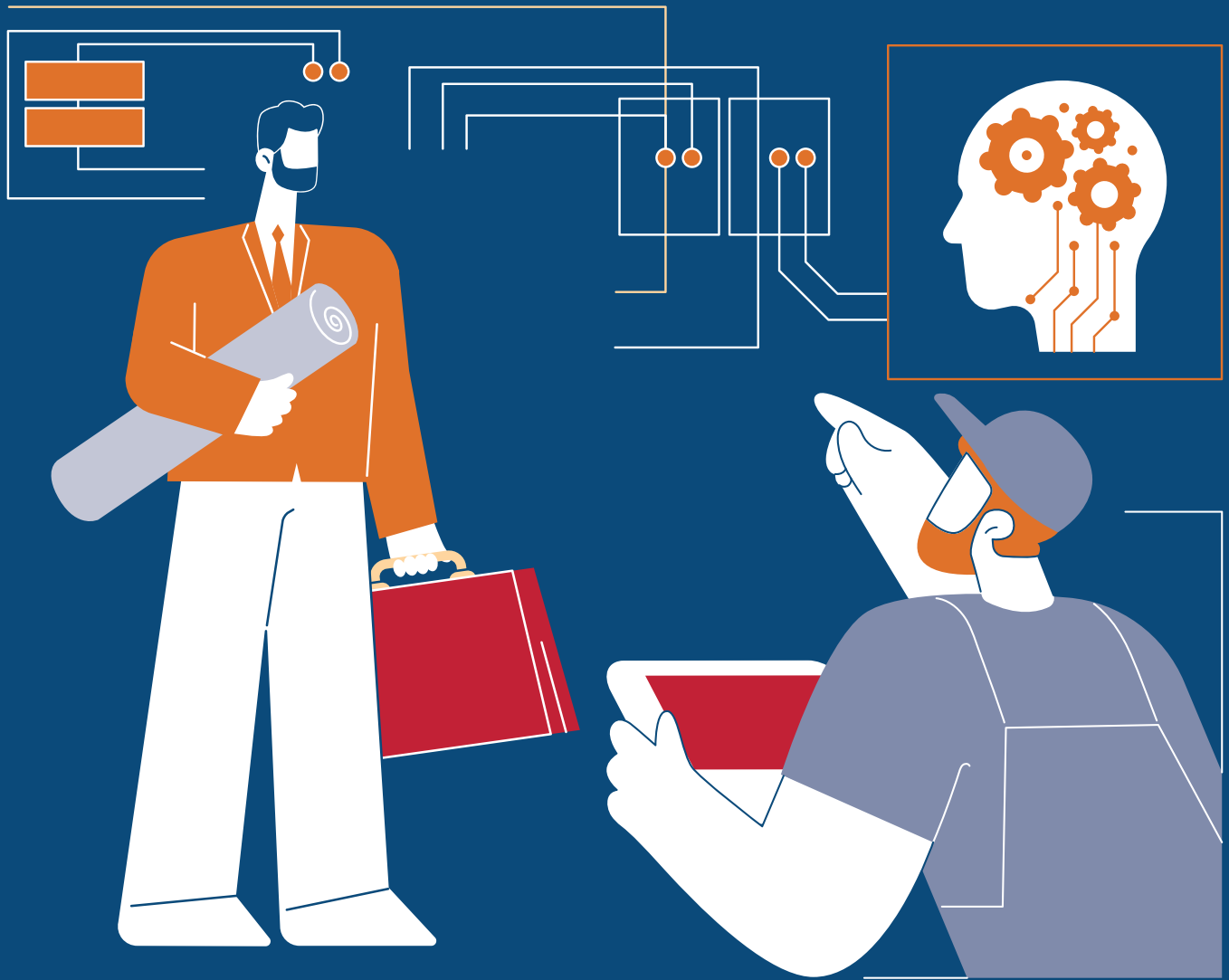




The Technician Opportunity: Skills, Growth, and Career Prospects

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Executive Summary

The UK employs over two million people in technician roles—skilled, practical jobs that sit at the heart of vital sectors including clean energy, defence, transport, digital infrastructure, construction and advanced manufacturing. These roles offer competitive wages, career progression, and long-term security, often without requiring a university degree.

This report examines 47 technician occupations, from welders and engineering technicians to medical lab workers and IT support specialists. The analysis reveals that technician roles offer strong career prospects across multiple dimensions:

Competitive Compensation: Nine in ten technician occupations offer median salaries above the real living wage, and many exceed the UK median wage. In 2024, 74% of technician occupations saw above-inflation pay increases.

Career Progression: Nearly half of rail technicians are promoted within five years. IT operations technicians, one of the most common technician occupations, see promotion rates of 49% within five years.

Experience Over Education: In some pathways, practical experience outpaces formal education as a route to advancement. Non-graduates working as electrical service and maintenance mechanics are 4 percentage points more likely to be promoted than their graduate counterparts.

Management Opportunities: Among Telecoms installers and repairers—where over 80% of workers do not have a degree—non-graduates

are more likely to become managers than their graduate peers.

Job Security: Welding professionals show exceptional retention—48% remain in the role ten years after entry. The occupation also demonstrates low automation risk and average annual pay growth of more than 8% over recent years.

Automation Resilience: Technician roles demonstrate exceptional protection against AI-based displacement, with the most secure occupations—including rail repair, welding, and metal working—ranking within the lowest 15th percentile for automation risk. These hands-on roles requiring physical manipulation, spatial reasoning, and contextual problem-solving remain largely immune to current AI capabilities.

To further highlight job quality of technician roles, the report introduces the Technician Mobility Index, which ranks occupations across eight key metrics: pay, wage growth, promotion rates, management progression, career flexibility, automation resistance, skills shortages, and strategic industry alignment. It also examines where gender representation remains uneven, with women comprising less than 10% of workers in many high-paying, fast-growing occupations.

Drawing on comprehensive labour market data, this analysis demonstrates that technician careers represent a significant component of the UK's skilled workforce, offering pathways to economic security and professional advancement across multiple sectors.

Introduction

Technician roles represent a substantial and strategically important segment of the UK labour market. More than two million workers are employed in these skilled, hands-on positions that support critical national infrastructure—from maintaining wind turbines and rail networks to operating medical laboratories and digital systems.

These occupations span diverse sectors but share common characteristics: they typically require Level 3 qualifications (equivalent to A-levels), combine technical knowledge with practical application, and offer structured career progression. Many provide competitive compensation without requiring university degrees, and most demonstrate resilience to automation compared to desk-based roles.

This report provides a comprehensive analysis of 47 technician occupations identified by the Gatsby Foundation across engineering, healthcare, digital infrastructure, manufacturing, and other key sectors. The analysis examines these roles across multiple dimensions of job quality and career prospects, including compensation, progression opportunities, job security, and long-term viability.

The findings reveal significant variation within the technician workforce. Some occupations offer rapid advancement and high pay, while others provide stability and specialisation. Some demonstrate clear advantages for degree holders, while others show no correlation—or even negative correlation—between formal education and career outcomes.

Section 1. Defining Technician Roles

Technicians are skilled workers who apply technical knowledge to solve practical problems across a wide range of systems and industries. They maintain infrastructure, support innovation, and ensure the operational effectiveness of essential services and equipment.

The technician workforce encompasses diverse occupations including engineering technicians who design and maintain infrastructure, IT support specialists who manage digital systems, laboratory technicians who support medical and scientific research, and skilled tradespeople who build and repair physical systems.

Most technician positions require qualifications at Level 3 or above, combining STEM knowledge with hands-on skills. These roles typically involve problem-solving, system maintenance, and technical implementation rather than theoretical research or high-level strategic planning.

This analysis focuses on 47 technician occupations defined by the Gatsby Foundation, spanning sectors from science and healthcare to construction and creative industries. The complete list is presented in Table 1.

Table 1

Occupation code	Job type
3111	Laboratory technicians
3112	Electrical and electronics technicians
3113	Engineering technicians
3114	Building and civil engineering technicians
3115	Quality assurance technicians
3116	Planning, process and production technicians
3119	Science, engineering and production technicians n.e.c.
3120	CAD, drawing and architectural technicians
3131	IT operations technicians
3132	IT user support technicians
3133	Database administrators and web content technicians
3211	Dispensing opticians
3212	Pharmaceutical technicians
3213	Medical and dental technicians
3240	Veterinary nurses
3417	Photographers, audio-visual and broadcasting equipment operators
3573	Information technology trainers
5112	Horticultural trades
5119	Agricultural and fishing trades n.e.c.
5211	Sheet metal workers
5212	Metal plate workers, smiths, moulders and related occupations
5213	Welding trades
5214	Pipe fitters
5221	Metal machining setters and setter-operators
5222	Tool makers, tool fitters and markers-out
5223	Metal working production and maintenance fitters
5224	Precision instrument makers and repairers
5225	Air-conditioning and refrigeration installers and repairers
5231	Vehicle technicians, mechanics and electricians
5232	Vehicle body builders and repairers
5233	Vehicle paint technicians
5234	Aircraft maintenance and related trades
5235	Boat and ship builders and repairers
5236	Rail and rolling stock builders and repairers
5241	Electricians and electrical fitters
5242	Telecoms and related network installers and repairers
5243	TV, video and audio servicers and repairers
5244	Computer system and equipment installers and servicers
5245	Security system installers and repairers
5246	Electrical service and maintenance mechanics and repairers
5249	Electrical and electronic trades n.e.c.
5250	Skilled metal, electrical and electronic trades supervisors
5315	Plumbers & heating and ventilating installers and repairers
5421	Pre-press technicians
5422	Printers
6121	Pest control officers
6129	Animal care services occupations n.e.c.

Section 2. Job Quality Metrics Across Technician Occupations

This section examines technician roles across several key dimensions of job quality: compensation, career progression, job security, management advancement, and educational

requirements. The analysis reveals substantial variation within the technician workforce and identifies occupations that perform particularly well on specific metrics.

2.1 Compensation Analysis

Compensation levels vary significantly across technician occupations. The highest-paying roles concentrate in sectors experiencing skills

shortages or operating in strategic industries with government investment.

Table 2. The 10 highest-paying technician occupations

Job title	Median wage
Rail and rolling stock builders and repairers	£56,984
Pipe fitters	£46,047
Electrical and electronic trades n.e.c.	£45,849
Aircraft maintenance and related trades	£44,966
Engineering technicians	£42,543
Skilled metal, electrical and electronic trades supervisors	£42,419
Air-conditioning and refrigeration installers and repairers	£41,056
Information technology trainers	£39,950
Electrical service and maintenance mechanics and repairers	£39,713
Electrical and electronics technicians	£39,288
UK overall	£37,430

Fourteen technician occupations exceed the UK median full-time salary of £37,430.¹ The highest paying roles—including rail and rolling stock repair, pipe fitters, and electrical trades—offer compensation exceeding that of many graduate-entry professions, including primary school teachers (£42,763) and midwives (£45,976).

Recent wage growth has been particularly strong across technician occupations. In 2024, 74% experienced above-inflation increases,

with notable growth across recent years in computer systems installation (+14.5%), aircraft maintenance (+9.5%), and rail and rolling stock repair (+7.8%).

Many technician roles concentrated in strategic sectors identified by UK industrial strategy have seen sustained wage growth, reflecting both skills shortages and government investment priorities in defence, clean energy, advanced manufacturing, and digital infrastructure.

¹ Office for National Statistics. “Employee earnings in the UK: 2024.” Office for National Statistics, 29 Oct. 2024, <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2024>

2.2 Career Progression Rates

Career progression varies significantly across technician occupations. The analysis examined promotion rates within five years of entry,

measuring both internal advancement and external moves to higher-level positions.

Table 3. Technician roles with highest 5-year promotion rates

Role	Promotion Rate (5 years)	% with Degree	Median wage	Annual Pay Growth
Planning, process and production technicians	51%	25%	£34,796	3.8%
IT user support technicians	49%	39%	£32,984	3.7%
Computer system and equipment installers and servicers	49%	38%	£35,146	14.5%
IT operations technicians	49%	34%	£35,235	5.7%
Rail and rolling stock builders and repairers	48%	18%	£56,984	7.8%
Quality assurance technicians	47%	32%	£31,340	4.8%
Aircraft maintenance and related trades	46%	13%	£44,966	9.5%
Electrical service and maintenance mechanics and repairers	46%	9%	£39,713	5.3%
Database administrators and web content technicians	46%	59%	£34,611	5.3%
Building and civil engineering technicians	46%	41%	£32,111	2.2%

Several high-progression roles demonstrate minimal correlation between degree attainment and advancement. Indeed, the likes of electrical

service and maintenance and computer system installers show a slight advantage for non-graduates.

2.3 Educational Requirements and Outcomes

The relationship between formal education and career outcomes varies substantially across technician occupations. Many demonstrate minimal correlation between degree attainment and career success, while others show modest advantages for graduates.

In the following tables, 'Degree Advantage' represents the advantage degree holders have

over non-graduates. Where these are negative, it means that non-graduates hold an advantage over graduates. For example, Table 4 indicates that among Electrical service & maintenance mechanics, non-graduates are 4.2 percentage points more likely to gain a promotion within five years than degree holders.

Table 4. How technician role outcomes vary for non-graduates vs. graduates

Role	Degree Advantage (Promotion)	% with Degree	Median Wage
Electrical service and maintenance mechanics and repairers	-4.2%	9%	£39,713
Computer system and equipment installers and servicers	-4.2%	38%	£35,146
Agricultural and fishing trades n.e.c.	-2.7%	22%	£28,000
Tool makers, tool fitters and markers-out	-1.2%	4%	£38,409
Horticultural trades	-0.6%	29%	£25,752
Vehicle body builders and repairers	0.1%	5%	£33,301
Aircraft maintenance and related trades	0.3%	13%	£44,966
Quality assurance technicians	0.5%	32%	£31,340
Vehicle paint technicians	0.6%	9%	£33,265
Plumbers & heating and ventilating installers and repairers	1.1%	7%	£38,099

We also examined which technician roles see no management advantage for degree-holders. In the roles featured below, degree-holders are no

more likely—or sometimes even less likely—to move into management within 10 years.

Table 5. How technician role management opportunities vary for non-graduates vs. graduates

Role	Degree Advantage for Management Roles	Median wage	% with degree
Tool makers, tool fitters and markers-out	-14.4%	£38,409	4%
Skilled metal, electrical and electronic trades supervisors	-8.3%	£42,419	9%
Horticultural trades	-2.3%	£25,752	29%
Telecoms and related network installers and repairers	-1.9%	£36,722	19%
IT operations technicians	-1.0%	£35,235	34%
Electrical and electronic trades n.e.c.	-0.9%	£45,849	37%
Computer system and equipment installers and servicers	-0.7%	£35,146	38%
Pharmaceutical technicians	-0.5%	£30,232	19%
Dispensing opticians	-0.3%	£27,540	23%
Database administrators and web content technicians	-0.3%	£34,611	59%
Medical and dental technicians	-0.1%	£27,734	44%
Agricultural and fishing trades n.e.c.	-0.1%	£28,000	22%
Information technology trainers	0.0%	£39,950	58%

These data demonstrate that practical experience and technical competency often outweigh formal educational credentials

in determining career advancement within technician occupations.

2.4 Management Advancement

Long-term analysis reveals which technician roles most frequently lead to managerial positions within ten years of entry, as well as the roles for which having a degree is associated with advancement. This progression pathway represents a significant career advancement opportunity within technician careers.

Table 6. Technician roles with the highest management advancement rates

Role	In manager role within 10 years (%)	Degree advantage	% with Degree	Median wage
Planning, process and production technicians	36.1%	5.3%	25.0%	£34,796
Information technology trainers	26.8%	0.0%	57.5%	£39,950
Quality assurance technicians	25.9%	2.7%	32%	£31,340
CAD, drawing and architectural technicians	25.2%	2.0%	48.8%	£33,793
Metal plate workers, smiths, moulders and related occupations	23.2%	4.4%	32.0%	£36,685
Pest control officers	22.5%	5.5%	Not available	£30,733
Air-conditioning and refrigeration installers and repairers	22.4%	12.2%	Not available	£41,056
Pre-press technicians	22.2%	1.2%	19.4%	£26,175
Rail and rolling stock builders and repairers	22.0%	4.4%	18.3%	£56,984
Horticultural trades	22.0%	-2.3%	28.7%	£25,752

The data reveals that management advancement is achievable across diverse technician occupations, from high-skill technical roles to more traditional trades.

2.5 Career Flexibility and Occupational Mobility

Some technician roles function as career springboards, providing broad transferable skills that enable movement into diverse occupational pathways. This flexibility represents a significant advantage for workers seeking to maintain career options while building practical experience and technical competencies.

The analysis identified technician occupations that lead to the widest variety of future careers

by examining occupational destinations ten years after entry. A destination is considered “common” if more than 1% of workers from the origin occupation transition there, indicating meaningful career pathways rather than isolated cases. Chief Executives here are typically company owners – these workers are often entrepreneurs who have started up a new business, and become their own boss.

Table 7. Technician roles with the most career mobility

Role	Common Destinations	Top Destination Roles (10 Years)	Median Wage	% with Degree
Metal plate workers, smiths & moulders	26	Chief Executives, Industrial Engineers, Ops Managers	£36,685	32%
Security system installers & repairers	25	Engineering Techs, Comp Ops, Ops Managers	£36,348	4%
Pharmaceutical technicians	21	Pharmacists, Dietitians, Psychologists	£30,232	19%
Electrical & electronic trades n.e.c.	21	Civil Engineers, Ops Managers, Arch & Eng Managers	£45,849	37%
Vehicle technicians, mechanics & electricians	20	Ops Managers, Marketing/Sales Managers, Tech Specialists	£35,540	8%
Dispensing opticians	20	Marketing/Sales Managers, Chief Executives, Ops Managers	£27,540	23%
Engineering technicians	20	Mechanical Engineers, Computer Specialists	£42,543	28%

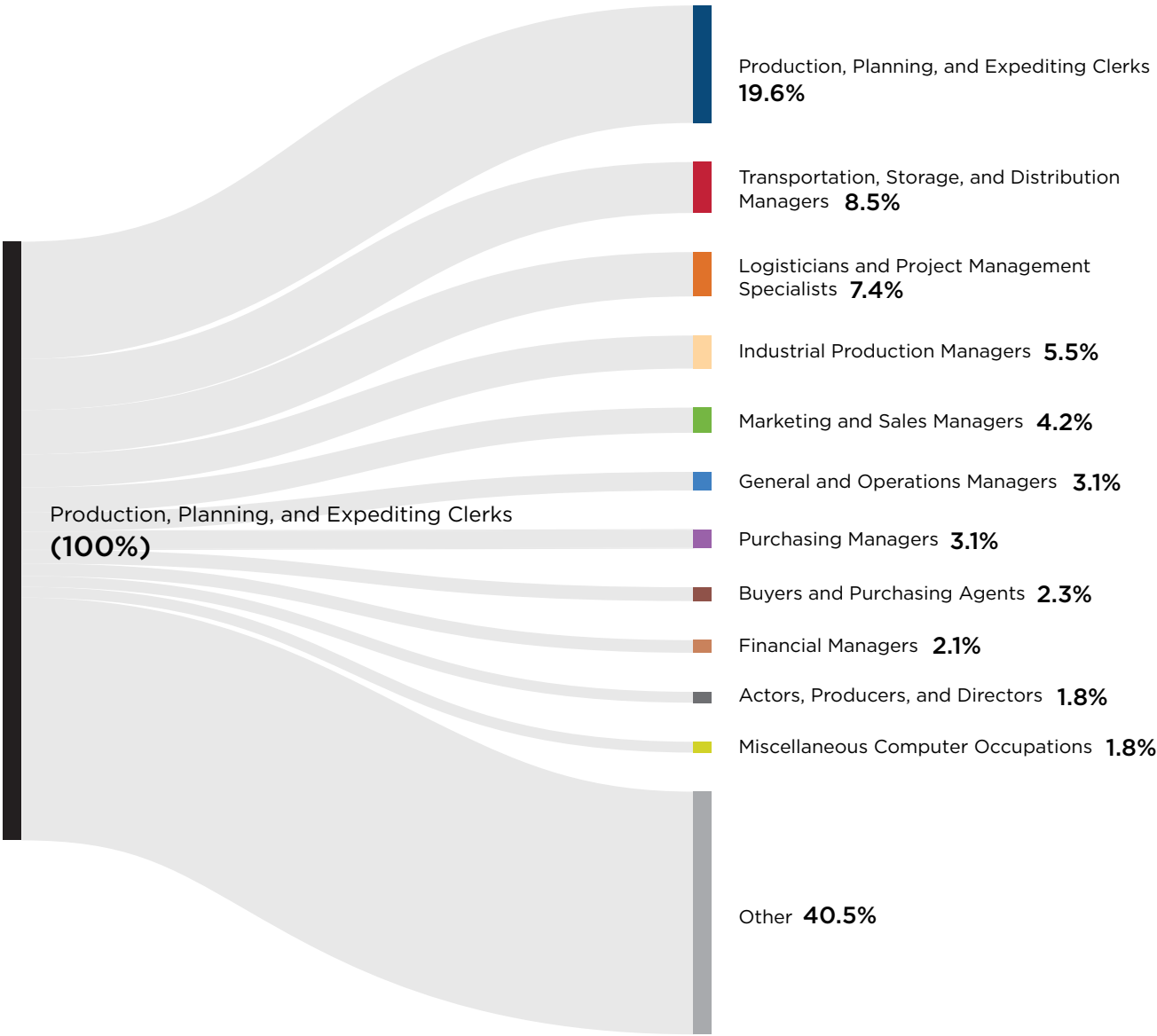
These high-mobility roles span diverse sectors and demographic profiles, from highly technical positions with substantial degree participation to trades-based roles with minimal formal educational requirements. The career pathways

include both vertical advancement within technical hierarchies and lateral movement into management, entrepreneurship, and related professional fields.

CAREER PROGRESSION EXAMPLE: PLANNING, PROCESS AND PRODUCTION TECHNICIANS

The Sankey diagram below illustrates career evolution patterns for technicians in prominent progression roles. It demonstrates how individuals starting as planning, process, and production technicians transition across various occupations over ten years, encompassing logistics, industrial production management, marketing, finance, and general operations.

Chart 1. 10-year career paths of planning, process and production technicians



This occupational mobility represents a significant economic asset, allowing the workforce to adapt to changing industry demands while providing individuals with

diverse career development options. The pattern suggests that technician roles often serve as effective launching points for broader professional careers across multiple sectors.

2.6 Job Security and Retention

Job security can be measured through retention rates—the percentage of workers remaining in the same occupation ten years after entry. High

retention indicates occupational satisfaction, career sustainability, and employer investment in worker development.

Table 8. Technician roles with the highest 10-year retention (paying above the real living wage)

Role	% still in role 10 years later	Median wage	Skills shortage	Exposure to AI/ automation percentile (lower is better)
Welding trades	48%	£34,924	✓	13.1
Pest control officers	46%	£30,733		30.7
Boat and ship builders and repairers	43%	£33,714	✓	19.9
Pipe fitters	41%	£46,047		14.6
Plumbers & heating and ventilating installers and repairers	39%	£38,099	✓	17.2
Photographers, audio-visual and broadcasting equipment operators	36%	£29,709		46.6
Vehicle paint technicians	36%	£33,265	✓	13.4
Tool makers, tool fitters and markers-out	34%	£38,409		31.8
Electrical and electronic trades n.e.c.	34%	£45,849		17.6
Air-conditioning and refrigeration installers and repairers	33%	£41,056	✓	24.7

High-retention occupations span diverse sectors and skill levels. Many face ongoing skills shortages, indicating strong employer demand

for experienced workers. Most also demonstrate low exposure to AI-based automation, suggesting long-term viability.

2.7 Automation Resilience

AI and automation are changing the labour market—but not all jobs are equally exposed. Using established academic methodology (Felten et al., 2023) adapted for UK occupational

classifications, the analysis assessed each technician role’s vulnerability to AI-based replacement. Lower percentile scores indicate greater protection from automation.

Table 9. Technician occupations with lowest AI exposure

Role	Exposure to AI/automation percentile (lower is better)	Median wage	Skills shortage	Total number of workers
Rail and rolling stock builders and repairers	8.5	£56,984		12,304
Metal plate workers, smiths, moulders and related occupations	9.9	£36,685		12,718
Horticultural trades	10.9	£25,752		11,924
Agricultural and fishing trades n.e.c.	12.3	£28,000		32,756
Welding trades	13.1	£34,924	✓	45,402
Vehicle paint technicians	13.4	£33,265	✓	12,345
Vehicle body builders and repairers	14.1	£33,301		24,876
Pipe fitters	14.6	£46,047		6,753
Metal working production and maintenance fitters	15.4	£39,277	✓	177,869
Sheet metal workers	16.6	£31,686	✓	11,736

The most automation-resistant technician roles concentrate in manufacturing, maintenance, and installation work requiring physical manipulation, spatial reasoning, and contextual problem-solving—capabilities that remain challenging for current AI systems.

Many of these roles also experience skills shortages, suggesting that automation resistance coincides with strong employer demand. This combination of low automation risk and high demand creates favourable conditions for workers in these occupations.

Section 3. The Technician Mobility Index

To provide a comprehensive assessment of career prospects across technician occupations, this analysis introduces the Technician Mobility

Index—a composite measure that scores each occupation across eight key indicators of job quality and career potential.

3.1 Index Methodology

The index incorporates the following equally weighted metrics:

1. **Median wage** - Current compensation level
2. **Wage growth** - Three-year annualised wage increases
3. **Promotion rates** - Five-year advancement probability
4. **Management progression** - Ten-year advancement to managerial roles
5. **Career flexibility** - Number of different occupational destinations after ten years
6. **Automation resistance** - Low exposure to AI-based displacement (inverted scale)
7. **Skills shortage status** - Employer-reported recruitment difficulties
8. **Strategic industry alignment** - Association with UK priority sectors

Each metric is normalised to a 0-100 scale, with the composite index representing the unweighted average across all eight dimensions.

3.2 Index Results

The highest-scoring occupations typically combine strong compensation with career advancement opportunities, demonstrate resilience to automation, and often align with strategic UK industries experiencing skills shortages.

Table 10. Technician Mobility Index Rankings (Top 10)

Role	Mobility index score (out of 100)	Median wage	Average wage growth	Promotion Rate (5 years)	% in manager jobs 10 years later	Number of occupations >1% are in 10 years later	Exposure to AI/automation percentile (lower is better)	Skills shortage	Industrial strategy sectors
Rail and rolling stock builders and repairers	100	£56,984	7.80%	48%	22.00%	24	8.5		
Computer system and equipment installers and servicers	97.8	£35,146	14.50%	49%	11.80%	17	34.7	✓	✓
Aircraft maintenance and related trades	95.6	£44,966	9.50%	46%	21.60%	20	21.3		✓
Pipe fitters	93.4	£46,047	18.50%	33%	20.10%	15	14.6		✓
Electrical and electronic trades n.e.c.	91.3	£45,849	9.00%	36%	18.90%	20.7	17.6		✓
Skilled metal, electrical and electronic trades supervisors	89.1	£42,419	6.40%	39%	54.10%	16.6	43.5		
Electrical service and maintenance mechanics and repairers	86.9	£39,713	5.30%	46%	14.80%	19.4	34.7	✓	✓
Metal machining setters and setter-operators	84.7	£34,599	6.60%	41%	15.90%	18.5	20.7	✓	✓
Vehicle technicians, mechanics and electricians	82.6	£35,540	7.90%	41%	19.80%	20.4	20	✓	
Metal plate workers, smiths, moulders and related occupations	80.4	£36,685	7.60%	32%	23.20%	25.5	9.9		

Section 4. Gender Representation Analysis

Gender representation varies dramatically across technician occupations, with significant

implications for workforce development and economic inclusion.

4.1 Current Gender Distribution

Of the 47 technician occupations analysed, only five are majority female. These tend to concentrate in healthcare support, animal care, and pharmacy assistance—often lower-paid roles with higher automation exposure compared to male-dominated technical trades.

Female representation is particularly low in the highest-paying and most secure technician occupations. In the ten best-paid roles, women comprise just 8% of the workforce. In the ten roles with lowest AI exposure, female representation averages just 7%.

Table 11. Gender distribution in high-paying technician roles

Role	Median wage	% Female
Rail and rolling stock builders and repairers	£56,984	5%
Pipe fitters	£46,047	0%
Electrical and electronic trades n.e.c.	£45,849	6%
Aircraft maintenance and related trades	£44,966	8%
Engineering technicians	£42,543	11%
Skilled metal, electrical and electronic trades supervisors	£42,419	5%
Air-conditioning and refrigeration installers and repairers	£41,056	0%
Information technology trainers	£39,950	36%
Electrical service and maintenance mechanics and repairers	£39,713	1%
Electrical and electronics technicians	£39,288	5%

4.2 Apprenticeship Pipeline Analysis

Analysis of current apprenticeship enrolment provides insight into future workforce composition. While some traditionally male-dominated occupations show modest increases

in female participation among apprentices, the overall pattern suggests persistent underrepresentation.

Table 12. Female representation: current workforce vs. apprentice pipeline

Role	Current Workforce, % Female	Apprentices, % Female	Change
Vehicle paint technicians	0%	13%	▲
Tool makers, tool fitters and markers-out	0%	10%	▲
CAD, drawing and architectural technicians	26%	33%	▲
Agricultural and fishing trades n.e.c.	11%	18%	▲
Rail and rolling stock builders and repairers	5%	11%	▲
Building and civil engineering technicians	19%	16%	▼
Laboratory technicians	49%	45%	▼
IT user support technicians	23%	10%	▼
IT operations technicians	24%	10%	▼
Science, engineering and production technicians n.e.c.	26%	8%	▼

The data reveal mixed patterns. While some occupations show modest improvement in the apprentice pipeline, others demonstrate declining female participation among new entrants. Overall, if current apprenticeship patterns continued, the aggregate increase in female representation across all technician occupations would be less than 0.3 percentage points.

Current gender representation significantly constrains the talent pool for occupations experiencing skills shortages and offering strong career prospects. Addressing this imbalance represents both an economic opportunity and a policy priority.

Section 5. Conclusion

This analysis demonstrates that technician occupations represent a diverse and economically significant component of the UK workforce. The 47 occupations examined span multiple sectors and offer varying combinations of compensation, career progression, job security, and advancement opportunities.

Key findings include:

Compensation: Fourteen technician occupations exceed the UK median wage, and 42 (or 89%) have median wages above our calculation of the real living wage. Recent wage growth has been particularly strong, with 74% of technician occupations experiencing above-inflation increases in 2024.

Career Progression: Promotion rates vary significantly, from 23% to 51% within five years. Several high-progression occupations demonstrate minimal correlation between degree attainment and advancement, with some showing advantages for non-graduates.

Job Security: High-retention occupations provide long-term career stability, with some roles retaining nearly half their workforce for ten years or more. These occupations typically demonstrate low automation exposure.

Management Advancement: Multiple pathways exist for progression into management roles, with advancement rates ranging up to 36% within ten years. Practical experience often proves as valuable as formal education for management progression.

Educational Requirements: Many technician occupations offer strong career prospects without requiring university degrees. In several high-performing roles, non-graduates match or exceed the advancement rates of their degree-holding counterparts.

Gender Representation: Significant gender imbalances persist across most technician occupations, particularly in the highest-paying and most future-proof roles. Female representation averages just 8% in the ten best-compensated technician occupations.

Automation Resilience: Technician roles generally demonstrate greater resistance to AI-based automation than desk-based occupations, reflecting their hands-on, physical, and contextual nature.

The Technician Mobility Index provides a systematic framework for comparing occupations across multiple dimensions of job quality. The highest-scoring roles typically combine competitive compensation with advancement opportunities, demonstrate automation resistance, and often align with key sectors for the UK's industrial strategy.

These findings indicate that technician occupations offer viable pathways to economic security and career advancement across multiple sectors of the UK economy. The variation in outcomes across different technician roles underscores the importance of occupation-specific analysis when assessing career prospects and workforce development priorities.

Appendix: Methodology

Occupational Definition: The analysis begins with 47 technician occupations defined at the 4-digit level of the UK Standard Occupational Classification (SOC), provided by the Gatsby Foundation.

Data Integration: UK SOC codes were mapped to equivalent US SOC and O*NET classifications using NFER crosswalks, manually refined for technician-specific accuracy.

Strategic Industry Classification: Occupations are flagged as relevant to UK industrial strategy sectors (advanced manufacturing, clean energy, creative industries, defence, digital technologies, financial services, life sciences, professional services) if they appear at least three times more frequently in sector job postings compared to the overall market.

Promotion Measurement: Promotion rates capture title changes within companies (internal) and job moves between companies (external) within five years of entry, weighted toward recent cohort years (2015-2020).

Occupational Mobility: Ten-year longitudinal tracking measures retention in the same occupation, advancement to management, and entrepreneurship, reported by education level.

Skills Analysis: Distinctive skills identified using TF-IDF methodology applied to job posting data.

Labour Market Indicators: Employment characteristics, demographics, and wage data sourced from UK Labour Force Survey (Q4 2022-Q3 2024) and Annual Survey of Hours and Earnings. Skills shortage indicators derived from UK Employer Skills Survey.

Living Wage Calculation: Real Living Wage rates (£26,208 UK-wide, £28,808 London) converted to annual salaries assuming 40-hour work weeks, adjusted by occupation's London worker concentration.

AI Exposure: Scores adapted from Felten et al. (2023) methodology linking language model capabilities to O*NET work activities.

Apprenticeship Data: Apprenticeship start counts by demographics sourced from Institute for Apprenticeships and Technical Education and UK Department of Education, mapped to SOC codes via standard code classifications.