



Women in Rail: Industry survey





Introduction

A true British success story, rail is proving to be a modern and dynamic industry of which the country can be very proud.

Passenger journeys have increased two-fold over the past 18 years, employment opportunity in the sector is booming - currently growing at double the rate of GDP¹ - and it is enjoying the largest level of government investment since the Victorian era.

But it is facing a very real problem – a deficit of talent and diversity of skills – which threatens its future growth.

Over the past six months, Women in Rail has been collaborating with companies across all areas of the rail industry to provide a clearer picture of what is emerging as a significant contributor to (or at the very least agitator of) this shortage: gender imbalance.

The story we have uncovered, I suspect, will not be a surprise to most. Just 16.4 per cent of the rail industry is made up of women, and an even smaller number are in senior, decision-making posts. For most women and young girls, rail is unfortunately not the first exciting, creative and rapidly growing industry that springs to mind when choosing a career.

In context with a broader concern over how to staff the roles required to bring these exciting developments to bear, these stark findings are symptomatic of a broader image problem for the industry.

We must focus our efforts on changing these perceptions from the roots up: we want to see young girls passionate about rail, we want to see teens leaving school inspired to study engineering and we want to see women thriving in their career on the railway. And we want rail to be praised as an industry that is dynamic and forward looking, supporting and fostering the career of its workforce and, in particular, its women.

You will find in the following pages a snapshot of the current state of gender balance within the rail industry, a flavour of the many reasons why the rail sector should pay attention to it, and a roadmap for change.

It is time to unite in our approach to promote rail as a career of choice, to redress the gender balance and fill our ever growing pipeline with the best talent.

Taking all of this on board, now is the time to achieve our vision for a better future for rail.



Adeline Ginn
Founder of Women in Rail



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Why Rail?

It is clear that the rail industry needs to shift its gender balance. This is not just imperative to the future of rail, but also to the future of the British economy.

The railway sector plays a significant role in the state of the UK's wealth. Oxera has estimated the economic contribution of the industry:

- The contribution of the industry and its supply chain, namely is the employment of approximately 212,000 people, the generation of **£9.3bn** in GVA each year, and the provision of **£3.9bn** of tax revenue to the Exchequer. Importantly, the tax contribution almost exactly offsets funding provided by government to the industry;
- Up to **£13bn** in benefits to passengers and freight users a year;
- Up to **£10bn** worth of additional productivity in the economy which arises through the impact of the rail industry on other sectors of the economy.¹

With a total worth of £39bn, rail is key to the economic health of the nation, especially if we compare it to other industries. Music for example generates £3.5bn², house building makes £19.2bn³ and the alcohol industry is worth £38bn⁴.

George Osborne, Chancellor of the Exchequer, has also recognised the important role that HS2 will play in rebalancing the British economy and fuelling its Northern powerhouse. Speaking on the plans, he said that bringing the northern cities together could create a second "global city" for the UK, which would not be a rival but a "brother in arms" for London as they fight together to grow Britain's share in the world economy.

HS2 alone is expected to create 25,000 jobs during construction and 3,000 jobs when in operation.⁵

Even further growth is on the horizon too, with new initiatives including the Thameslink Programme (1 and 2), Crossrail (1 and 2),

major upgrades of London Underground, light rail schemes, provision of new trains, as well as extensive electrification and introduction of ERTMS across the network.

Sourcing its talent from a wide pool of men and women is crucial to deliver this growth and, arguably, some areas of the industry are suffering from a lack of varied perspectives already.

Following an underinvestment in research and development, the UK is behind its counterparts in its creation of new technologies. Between 1984 and 2013, for example, fewer than 2,000 rail patents attributed to the UK, while Germany has secured nearly 4,000, the USA 8,000 and China nearly 18,000.⁶

The world's rail supply market is expected to grow by 2.7 per cent this year,⁷ arguably a good news story for the UK, but as developing markets begin to grow at a faster pace, we must ask ourselves what we can do to improve the picture of Britain's railway industry.

Investing in new talent will play a crucial role in changing this. It is in everybody's interest to engage young women, girls and boys alike in this dynamic and exciting industry, for the benefit of UK plc. Despite 51 per cent of the population being female, right now across the UK just 7 per cent of engineers are women. When we look at the railway industry this drops down to just 4.4 per cent.⁸

The higher we aim, the bigger the benefits will be: HS2, for example, will create more than 14,000 new jobs for workers in Birmingham, with the ripple effect of 2,000 new homes to be built in the area. This is particularly significant as government figures show that Birmingham has one of the highest unemployment rates in the UK. Rail will change people's lives.⁹

We must allow the rail industry to be at the forefront of helping to turn cities' fortunes around.





State of play

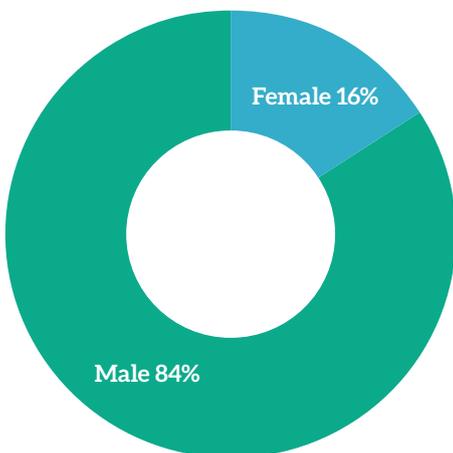
Using self-reported data from more than 39 businesses comprising train operating companies (including their owning groups), manufacturers, rolling stock companies, technical support companies (TESCOs), suppliers, Network Rail, the Department for Transport (DfT) and the Office of Rail and Road (ORR), this study provides the first comprehensive map of the number of women in rail and – crucially – where they are to be found in terms of skill set, seniority and function.

This, it is hoped, will provide an actionable baseline upon which companies can identify and target the key areas for change.

INDUSTRY-WIDE

Our 2015 research shows that amongst a total workforce of 85,723 covered by the survey, 14,024 or 16.4 per cent are female.

Industry-wide gender split



Male 71,699
Female 14,024
*of 85,723 total staff

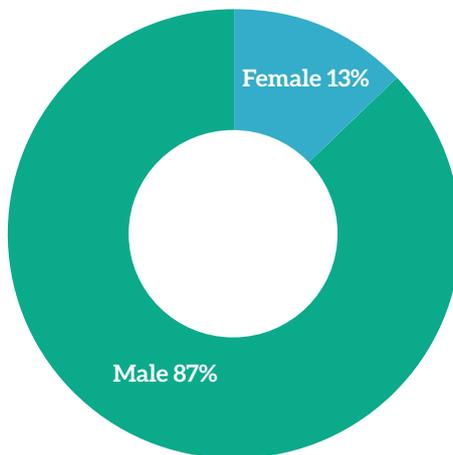
Percentage of women overall 16.36%

In context with data across the UK economy, where 47 per cent of the workforce are female, these results represent a dangerously low figure for rail. For now, anyway.

NETWORK RAIL, THE OFFICE OF RAIL AND ROAD, DEPARTMENT FOR TRANSPORT

Of the total, public sector bodies such as Network Rail, the ORR and DfT account for 31,945 staff, 4,157 (13 per cent) of which are women.

Network Rail, ORR, DfT gender split

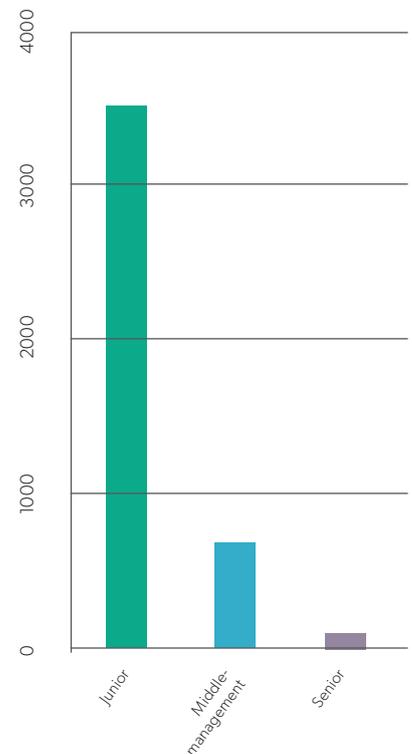


Male 27,788
Female 4,157
*of 31,945 total staff

Percentage of women overall 13.01%

When the data is broken down into job grades, the majority (83 per cent) of women across the three organisations are in junior roles, while 16 per cent hold middle-management positions. Just 56 women (1.3 per cent) are in senior roles.

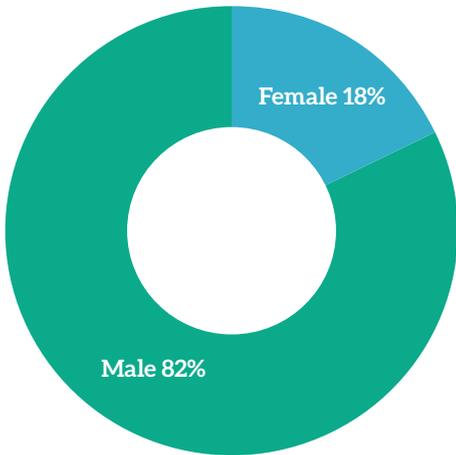
Network Rail, ORR, DfT women by grades



INDUSTRY-WIDE WITHOUT NETWORK RAIL, THE ORR OR DfT

Such a stark concentration of the talent pool negatively skews the industry-wide data considerably. For these purposes, Women in Rail has also provided a comparable figure omitting Network Rail, the ORR and the DfT. When Network Rail, DfT and ORR data is excluded, the overall percentage of women jumps to 18 per cent.

Industry-wide (excluding Network Rail, ORR, DfT) gender split



Male 43,729
Female 9,867
 *of 53,596 total staff

Percentage of women overall 18.41%

The data also looks at the number of women in terms of grades, mapping the representation of women by seniority within their companies. Just under four fifths (79 per cent) are in non-managerial roles and only 0.6 per cent have progressed to director or executive level. While job availability for both sexes naturally tends to be the greatest towards the bottom of the pyramid, the lack of women towards the top goes well beyond normal attrition. This indicates that rail does invest in, develop and attract talented women, only to lose them before they reach senior management levels.

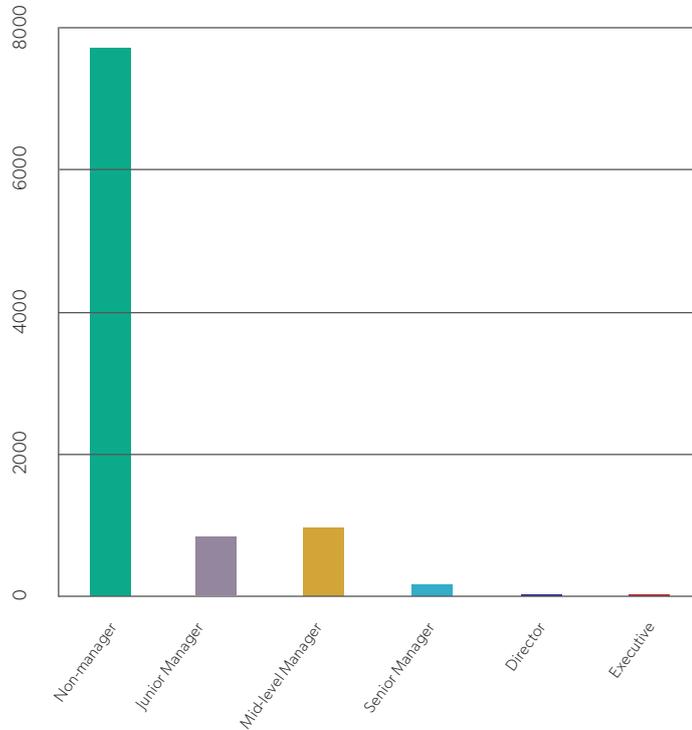
Anna Walker, Chair of the Office of Rail and Road is not sure it is all bad news: "There have actually been a lot of very able women who have got to the top of the rail sector like Heidi Mottram, Jo Kay, Mary Kenny, Mary Grant. So the rail sector does promote women. It promotes women on merit."

Anna Walker praises the "quite significant number" of women at middle management level (9.9 per cent), a figure which she believes could prove very promising for the future.

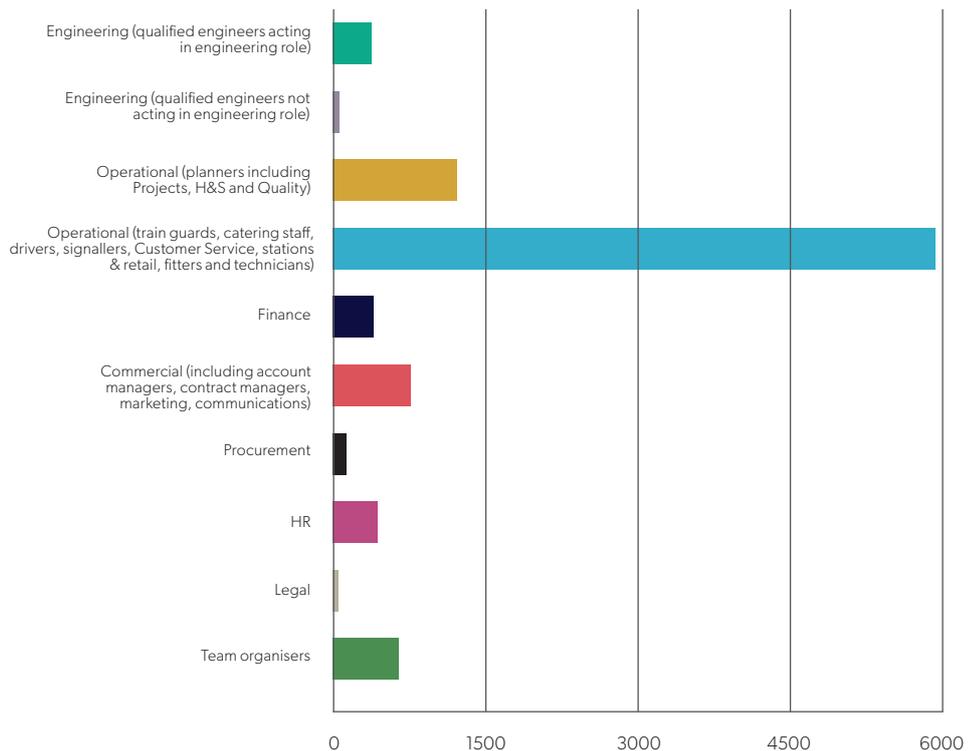
"When I go round the network, I am struck by how many able young women there are out there, in engineering or improving customer service, roles which are increasingly crucial for rail."

The gender breakdown splinters further between specific job roles within the rail industry. Of the 9,867 women covered by the survey, only 4 per cent are working in an engineering role. In fact, most women (60 per cent) gather around the 'on the ground' service roles such as catering staff,

Industry-wide (excluding Network Rail, ORR, DfT) women by grade



Industry-wide (excluding Network Rail, ORR, DfT) women by role



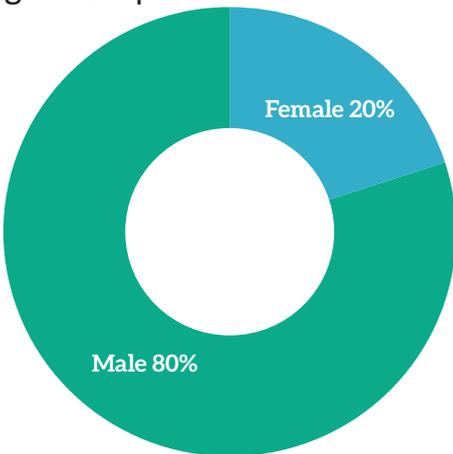
train guards, customer service and retail. In other words, customer-facing roles which are traditionally viewed as more female oriented.

Terence Watson, Country President of Alstom, points out that while rail is seemingly operating at 15 per cent female workforce, almost half are in "soft jobs," which is where they tend to stay.

"You have got very few professional engineering senior managers, technical staff, project and commercial contract staff who are women. And in that we are a bit weaker than the civil engineers, so the supply chain number is, I think, quite poor."

TRAIN OPERATING COMPANIES

Train Operating Companies - gender split



Male 35,765
Female 8,737
 *of 44,502 total staff

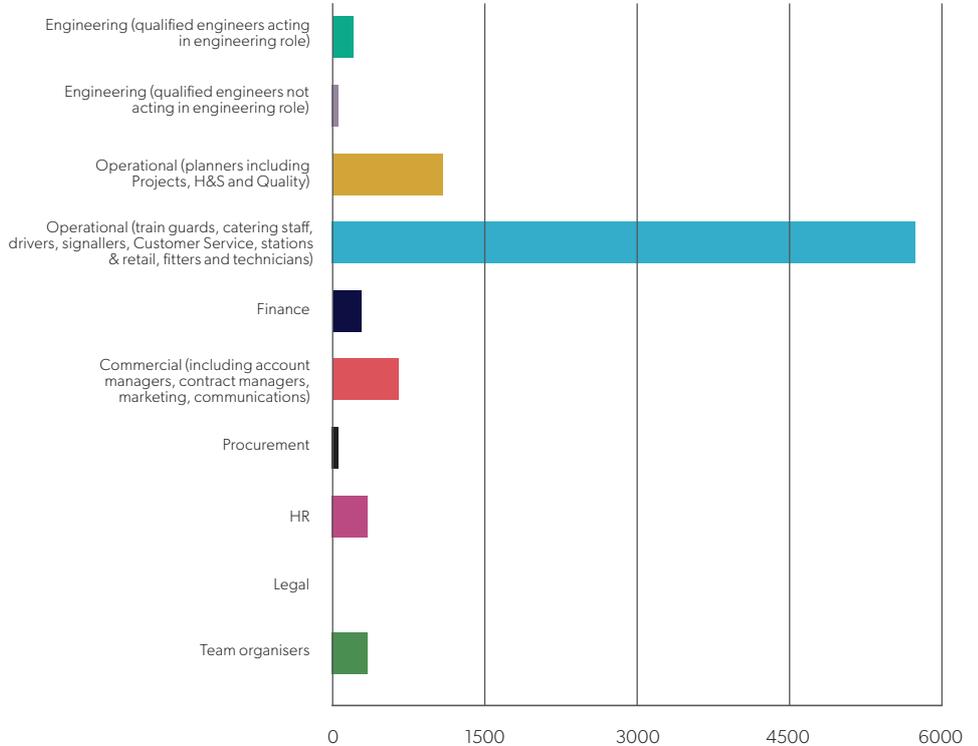
Percentage of women overall 20%

Overall, train operating companies report a 20 per cent female workforce but, once again, the concentration is overwhelmingly gathered among service roles (66 per cent), while the number of women engineers remains just over the 2 per cent mark.

Clare Burles, People Director at Virgin Trains East Coast, says that this shows significant room for improvement: "In your typical customer service roles you will naturally get an attraction from females because there is a lot of part-time work in those areas. But if you look at specific roles like train drivers or engineers, there is a complete gender imbalance. This is where we need to work harder. Is it disappointing as a result? Yes. Is it surprising? Sadly not."

As with the industry-wide figures, the second highest are in the planning operational roles, which account for 12 per

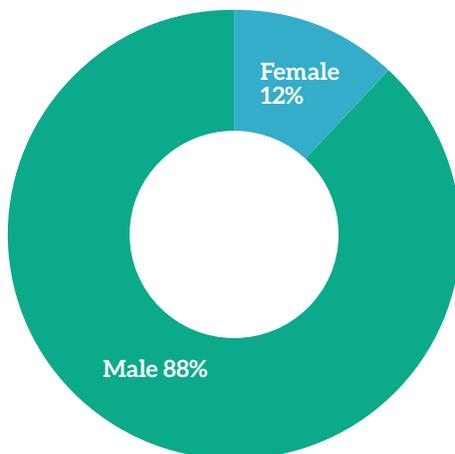
Train Operating Companies - women by role



cent of the female workforce. These jobs are traditionally office based and include roles such as projects, health and safety and quality control.

MANUFACTURERS

Manufacturers - gender split



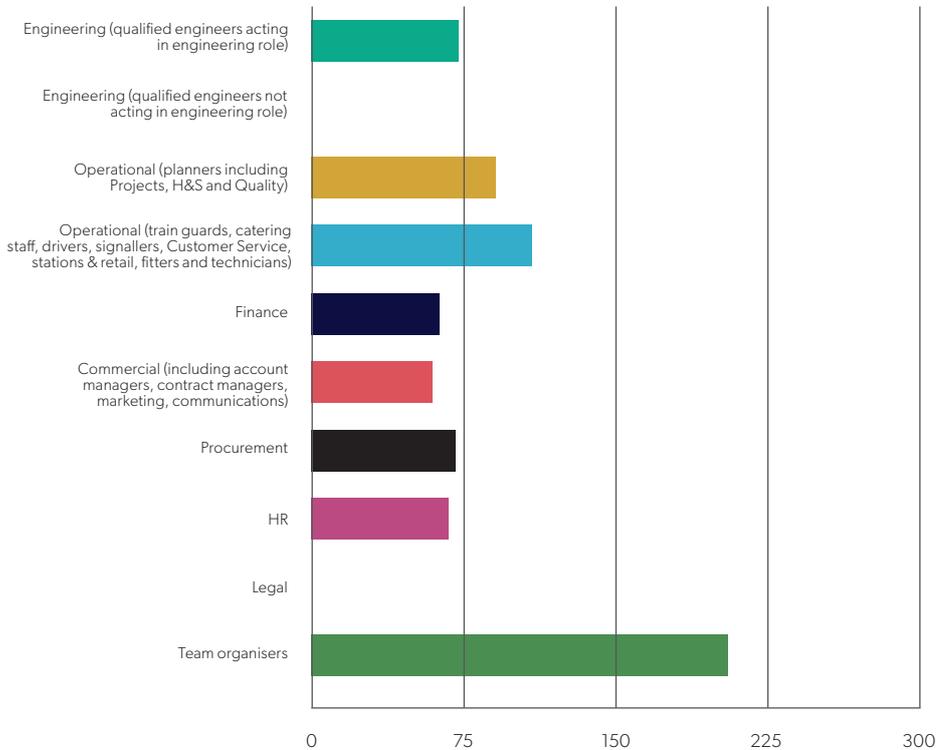
Male 5,713
Female 754
 *of 6,467 total staff

Percentage of women overall 12%

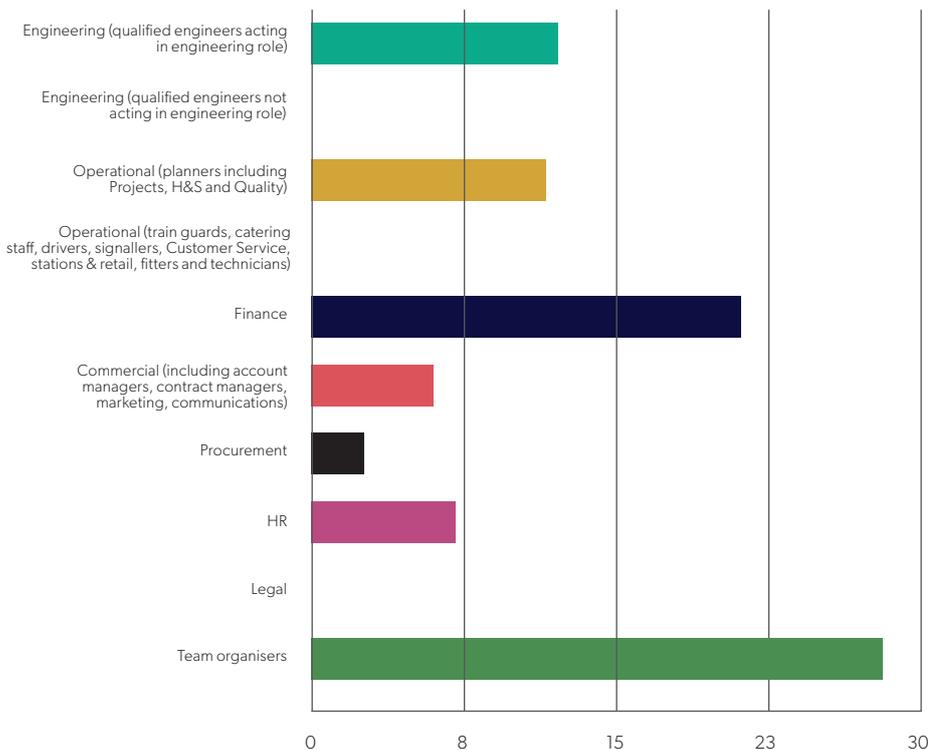
Among the supply chain, specifically manufacturers, there is a larger overall problem with a combined team of only 12 per cent women. Terence Watson, Country President of Alstom, says that in his opinion there has been a huge upsurge in realisation that the resources are inadequate for the task ahead.

Encouragingly, however, the distribution of women across functions is much more evenly spread. Almost 10 per cent are working as engineers and 12 per cent are in planning roles. Disappointing, is the large proportion of women in administrative roles (27 per cent) which represents the largest number of females in the rail manufacturing sector.

Manufacturers - women by role



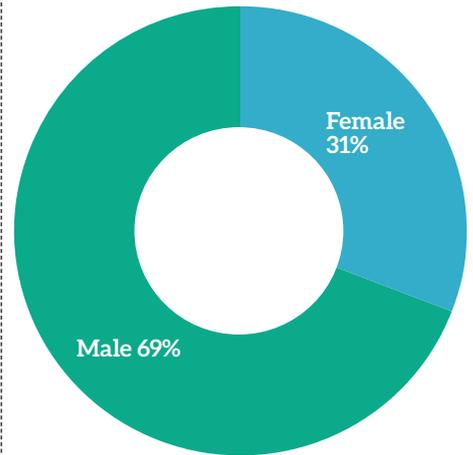
Rolling stock companies - women by role



ROLLING STOCK COMPANIES

Among the rolling stock companies, the percentage of women overall is undoubtedly much healthier, standing at just under a third of the entire workforce (31.3 per cent).

Rolling stock companies - gender split



Male 215
Female 98
 *of 313 total staff

Percentage of women overall 31.3%

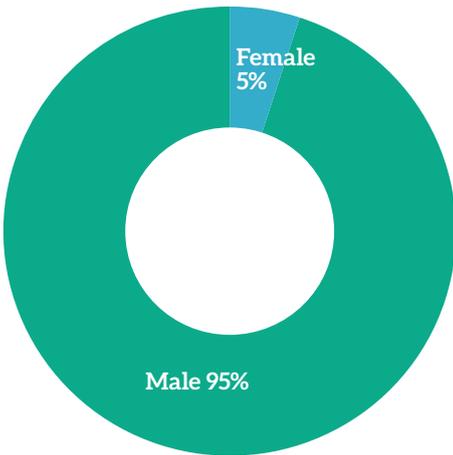
However, 28 per cent of these are in administrative roles and only 12 per cent comprise qualified engineers acting in an engineering role. With only one female executive, 51 per cent of women are in junior roles while the bulk of the remainder is at the mid to lower end of the management spectrum.

Malcolm Brown, CEO of Angel Trains, laments the figures, saying that there are opportunities for women across the board, but first the industry must tackle the dual challenges of awareness and desirability. "The rail sector offers great career opportunities but raising awareness of the roles available is a big challenge to overcome."

SUPPLIERS

The reports from suppliers are by far the most male-dominated with only five percent of the overall workforce being female with 67 per cent in non-managerial roles.

Suppliers - gender split



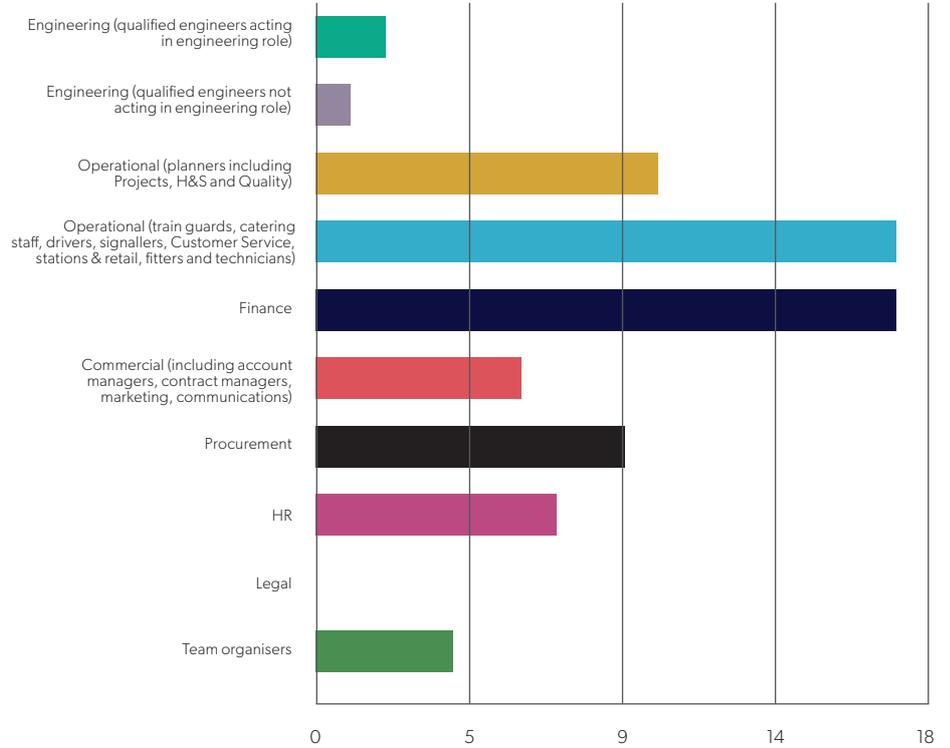
Male 1,327
Female 73
 *of 1,400 total staff

Percentage of women overall 5%

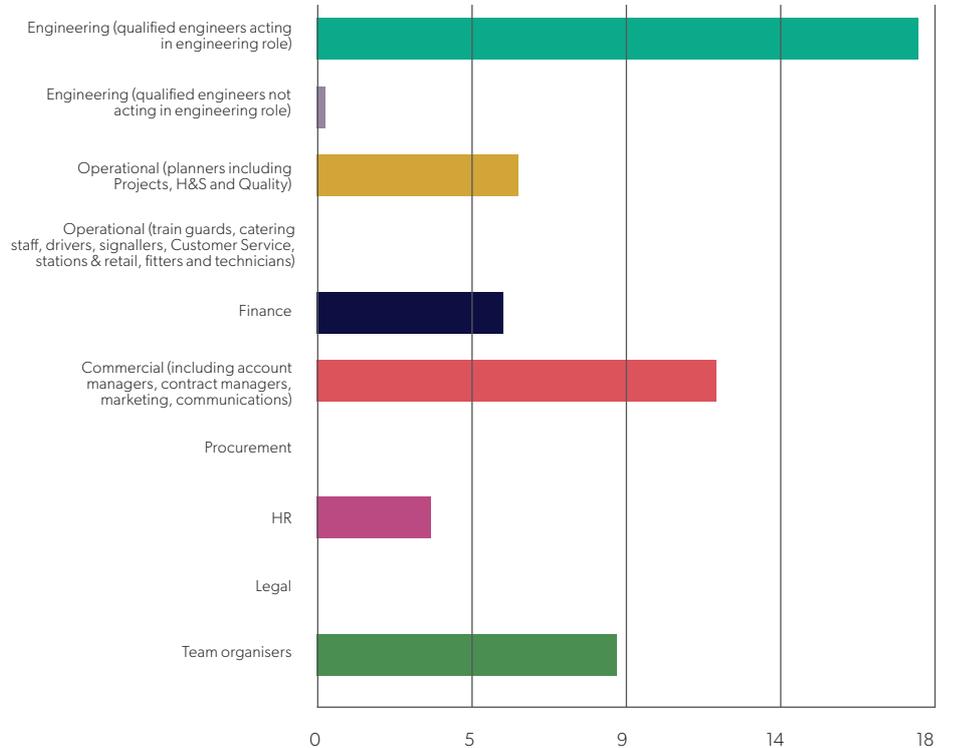
With strong representation in the finance department, over a third (37 per cent) are in operational roles comprising planning, health and safety and quality control and, of those, 62 per cent are on-the-ground technicians.

Jodi Savage, Sales Account Manager at Wabtec Rail, says this is quite typical of what she sees across her industry. "Most of the women are in the office in finance and administrative roles but more increasingly we have technical administrators or operational planners. It is a very recent development in the last 12 months."

Suppliers - women by role



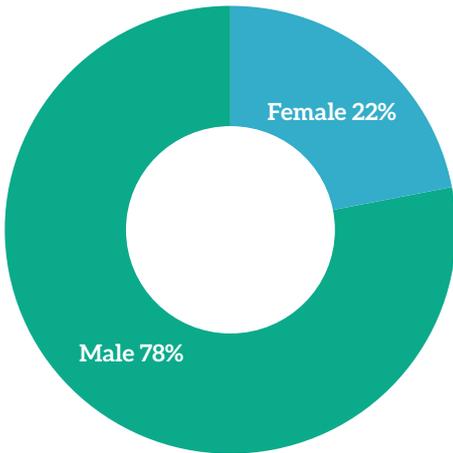
Suppliers - women by role



TESCOS

In Technology Service Companies (TESCOs) there is a similar picture when it comes to female representation, reporting just over one fifth at 22 per cent. There are no executives or directors and a significant majority (84 per cent) of women are in non-managerial roles.

TESCOs gender split



Male 709
Female 205
*of 914 total staff

Percentage of women overall 22%

Also to be found, however, is a healthy proportion (33 per cent) of women in engineering, while only 17 per cent are performing in the lower skilled administrative functions.

FREIGHT COMPANIES

With regards to the freight sector, we spoke to Maggie Simpson, Executive Director of the Rail Freight Group. "The representation of women is very low," she told us. "Freight does not offer some of the roles the passenger businesses do which I suspect would attract more women. Ticket offices, on-train services, conductors, buffet staff, these roles simply do not exist in freight."

While the numbers of women in on-the-ground roles are small, office-based management positions offer a healthier figure, albeit without any managing directors. "From a policy point of view, there's myself, Philippa Edmunds who heads up the campaign group Freight on Rail, Lindsay Durham, Head of Rail Strategy at Freightliner, Julie Garn, Intermodal Business Manager at GB Railfreight and Sabrina Brannan, Senior Business Manager at Direct Rail Services, among very few others."

We also spoke to Lee James, Equalities Advisor at ASLEF, the UK union for train drivers and operators. She explained that the number of female freight drivers in Scotland, England and Wales has increased from 26 in 2013/2014 to 33 in 2014/2015 representing 1.4% of the total workforce. "Freight work is

very different to passenger work. Working hours are longer and it is seen as a dirtier, more manual, role because you can be shifting loads such as coal."

"Sometimes drivers are required to lodge away from home," she continued. "That and the lack of facilities on the freight trains really put women off applying."

CONCLUSION

Overall, the industry reports a very low female-to-male ratio, which widens both further up levels of seniority and in more technical job roles. This is particularly worrying for a sector which is facing a skills gap and must be addressed to enable sustainable industry growth.



Reasons for change



Concern about the number of women in the rail industry is much less a gender number game and more to do with the sector's competitive edge. It indicates that a career in rail does not appear to be an attractive proposition to women who represent over half of the available talent pool. With infrastructure investment at an all-time high, these disappointing numbers are simply not good for the economy.

While there is no doubt that rail has a potent future, there are challenges ahead. On a domestic level, new projects such as Crossrail (1 and 2), Thameslink (1 and 2) and HS2 threaten to overwhelm the existing supply chain. Meanwhile, the UK has ground to regain on the international stage: some estimates suggest that the country exports as little as 10 per cent of rail supply revenues, dwarfed in comparison with France at 20 per cent and Germany which attributes half of its equipment and manufacturing revenues to export markets.¹ In a global market which is growing fast, these are disappointing figures.

Malcolm Brown, CEO of Angel Trains, outlined the scale of the problem: "We have an industry that is growing. At 1.7 billion passenger journeys a year, it has more than doubled since privatisation. We are running more trains and we are opening new railway lines."

"With that there is a need to have talented and capable people in the industry to deliver against these projects. If we are excluding – in very simple terms – 51 per cent of the workforce, either directly or indirectly, we are quite clearly limiting the talent pool that we can draw from."

Clare Burles, People Director at Virgin Trains East Coast, further points out that, far from being a problem of the future, the skills gap is already impacting the effectiveness of the industry. "Across the board, HR directors are complaining about the difficulty of recruiting in London. Many of our suppliers are now fishing from the same pool as Crossrail, which pays more than what they can compete with. Some are now considering recruitment from overseas. It is a real shame because this is not new stuff, we knew it was coming."

This is an issue endemic across the engineering skill set. The demand for engineers – any engineers – far outweighs the supply. Dame Ann Dowling, President

of the Royal Academy of Engineers, warns of an age demographic problem, a “cliff” coming where many of the people who were in posts some time ago are coming close to retirement. The estimate is that we will need an extra 1.82 million engineers in the UK over the next ten years.

Terence Watson, Country President of Alstom, agrees that age diversity is as big a problem as gender diversity. “The age issue is a very serious one because we have got deep rooted issues. For example, if you hollow out the supply chain and you rely on those firms for technology, when you return after a decade with more work, the knowledge and competence have almost definitely shifted to the right end of the age scale.”

The age profile is the worst in engineering and technology, he says, comparing the industry to a start-up mentality. “Young people are being trained, being coached and thriving but are not yet mature enough to take those key decisions which we expect of senior managers in companies.”

The good news is an almost universal recognition that there is a sea-swell in demand and a resourcing problem on the horizon. Companies are rightfully questioning how that looks in context with a broader institutional ignorance of half the potential workforce. As a result, everyone wants to do more. “It is a wonderful time in the railway industry because of that,” he says.

But attracting more women has benefits far beyond just making up the numbers. According to Lord Davies’ 2011 report *Women on Boards*, a growing body of research shows that teams and boards that include women tend to make better decisions².

The combined input of a diverse group with different skills and perspectives to offer improves the “richness of the board as a whole”. Ultimately, Lord Davies concludes, “diverse boards are more able to consider issues in a rounded, holistic way and offer an attention to detail not seen on all-male boards which often think the same way and sometimes make poor decisions.”

These are trends that British business cannot ignore. The failure of any business to maximise the talents of its workforce will result in below par performance.

In its 2015 review, the *Women on Boards* report celebrated its success in beating its 25 per cent target for female representation on FTSE 350 boards. But it called for added focus on maintaining the executive pipeline supply beyond the board: “it is both logical and critical to extend the drive to improving the representation of women in the most-senior leadership positions in the organization.”

For the UK economy then, it is vital that more women who have the skills and education do contribute to the full range of professions the country relies on for growth.





In rail specifically, women are in high demand for other reasons. Network Rail Chief Executive Mark Carne said: “When women started becoming a much more visible presence on the oil and gas platforms in the North Sea 20 years ago, the difference they brought was profound.”

“Today, women make up about only 13 per cent of the Network Rail workforce. It is hardly surprising that under such circumstances we still have what many describe as a macho culture.”

Anna Walker, Chair of the Office of Rail and Road, agrees that women are proving to be incredibly attractive candidates in the rail industry. “Educationally, many women actually do better than men as they emerge from university, and statistics show that female members of staff – particularly those in an organisation which is willing to be flexible with childcare – are extremely loyal employees.”

In an economy where women now form 51 per cent of the UK population, make up 46 per cent of the active workforce, are responsible for 70 per cent of household purchasing decisions and hold almost half of the UK’s wealth, the argument for attracting more women is not just strong, it is plain good business.

The case for change is multilayered. And it is compelling. So what is stopping us?



SWL 15
TONNES

CHIML SANG
BE SAFE
BOHONG

The challenges



With arguments both economic and for business performance, the lack of women in the rail industry is now almost universally understood to be a business imperative. Yet the numbers remain static.

Faced with the facts laid out in *State of Play*, few companies can now deny that a diverse workforce is a stronger workforce. So where are all the women at the top table?

The challenges are two-fold. The first is internal: up to now, the rail sector has suffered a lack of coherent programmes to enable female talent to progress and be retained. The second is external: a problem of perception both of engineering and of the rail industry as a whole.

Anna Walker, Chair of the Office of Rail and Road, summarised the latter: “the tendency is that [women] do not think it is for them. But with the country’s rich history in rail, paired with its current success, we could bring about a revolution in how people think of the railway sector. Its active promotion to women and to girls is actually very important because it puts it on their radar.”

The data gathered to complete this report shows us that while the rail sector is not a women-free zone, women tend to be concentrated in roles seen as more ‘women friendly’ such as legal, human resources, marketing and even IT. In engineering women are still woefully underrepresented and looking back, it is certainly not for want of trying. In fact, the Woman’s Engineering Society has been trying for nearly 100 years. A glance at their magazine, *The Woman Engineer*, from 1919, shows the percentage of female engineers to be no higher now than it was then.

How has engineering been left so far behind the broader diversification of the workforce? All signs point away from a demand issue: British society is just not producing enough engineers. In China, almost a third of engineers are women¹. What can we do to redress the balance?

ENGINEERING, MISUNDERSTOOD

Consensus is that there is scarcely a career more tragically misunderstood and misrepresented as engineering. Jane Wernick, Director of Jane Wernick Associates – a practice of consulting engineers – told the BBC that the companies which find work placements for school kids aren’t even trying to promote it. “We don’t get girls from those firms even though we ask for them,” she laments.

A quick straw poll reveals some of the more common reasons why women of various walks of life rarely consider engineering as a career. Answers come in the form of: “I just didn’t know it was a viable option,” “It’s just not very me,” and – this one comes up time and again – “I didn’t meet or know any engineers.”



Clare Burles, People Director at Virgin Trains East Coast, thinks there is a lot that schools can do, but that part of the solution can really be found behind the front door. "For whatever reason, and I don't think that we have really got under the skin of it as a nation, girls aren't typically going into [engineering]." Are parents talking about it as something females can do or are they still saying 'oh no, that is still a job for the boys'?"

Indeed, very little is understood about engineering as a subject, or as a viable career option.

Network Rail's Switch Off, Switch On research published this summer goes some way to understanding the psychological barriers to women engineers in rail. Developmental psychologists showed groups of girls from 7 to 15 years old a series of photos depicting females in various careers and observed their immediate associations with each image.

Four fifths of the girls aged 7 to 9 described the engineering photo as 'dirty' and 'messy'. Girls between 10 to 12 years old said it was for the 'physically strong' and is 'dangerous'. Between the ages 12 and 15, the most common terms were 'unglamorous' and 'socially isolating'.

The WISE campaign to promote women



in science, technology and engineering published a groundbreaking study *Not for People Like Me* earlier this year. It links for the first time social science research into the STEM world and argues a fresh approach is needed.

It found that while physics is the third most popular A-level for boys, it is only the nineteenth for girls, and of 14,000 engineering apprentices, only 450 were girls.

Girls' experience in schools and the quality of career guidance are critical elements in their decision making and limited availability of triple award science reduce the likelihood of girls having the confidence and desire to progress beyond GCSE.

STRUCTURAL BIAS

Clare Burles, People Director at Virgin Trains East Coast points to these traditional views pervading beyond the classroom and lingering in the workplace. Indeed it would be wrong to suggest that there are no structural challenges for women seeking a career in rail. Every industry has room for improvement, particularly in its attitudes toward – and promotion of – part-time and flexible work.

This is certainly supported by foreign case studies. In Sweden roughly 25% of engineers are women, the largest number in Western Europe. Among cultural differences, the starkest distinction is that the Swedes have made sure that women engineers can combine their family and their professional lives, a policy which the UK should emulate.

Among the more traditional managers and stakeholders in the industry, there is a view that part-time working is not possible in a shift pattern. Concerns about this range from logistical complication to costs incurred by employing two people over one. "I would challenge anyone who would come up with that as a view," says Clare Burles. "But it is not going to happen overnight, it is about changing quite historic beliefs and mindsets."

Terence Watson, Country President of Alstom, is quick to admit that in some cases entrenched processes in the industry can act as incentive barriers. "If you have roles which involve maintaining trains on a night shift, in a sometimes exclusively male environment, you have to ask: 'How do you start to get women interested in and active in that environment?' It is not hostile by design but it is just completely unattractive to women. It is a very brave woman who takes the first job."

"We need to recognise that doing it the old way while saying we believe in diversity just will not work."

Terence Watson also mentions the need to look at these business practices with a fresh pair of eyes. Sometimes there are easy fixes, physical barriers to a female workforce which have previously gone unnoticed. "Shared changing rooms, personal protective equipment designed for men etc. That kind of



thing is easy to overcome."

It is this reputation of engineering which is dragging the rail sector down with it, says Anna Walker, Chair of the Office of Rail and Road.

"Issues about attracting women to the railways increasingly surface because people tend to think it is [solely] engineering. And that actually is increasingly untrue. As rail becomes more passenger-orientated, there will be a whole new range of opportunities opening up for women in both passenger-facing activities and in the promotion of the sector."

CONFIDENCE

One other invisible barrier is what Anna Walker calls a crisis of confidence. She thinks we need to recognise that sometimes women need to do a better job of seizing opportunities. "I have three daughters, and not only do national statistics show that women can lack confidence, but in the case of my daughters, I can see that sometimes too."

Indeed, anecdotal evidence from a number of Women in Rail members revealed that they would shy away from pursuing a promotion due to self confidence issues.

This is a sentiment echoed across professions. In 2013, the Institute of Leadership and Management surveyed British managers on how confident they feel in their positions: half of female respondents admitted they had self doubt about their performance and careers, compared to just one third of male respondents. Crucially, the study also found that women with low confidence were less likely to be appointed

to management positions and as a direct result were less likely to achieve their career ambitions.

A UNIFIED VOICE

One of the larger problems is the piecemeal nature of the industry's vision for change. While there appears to be a broad understanding of what is at stake, there are – as Terence Watson puts it – "many, many views from the broken mirror" on how to fight for better diversity.

"The first camp takes the view that if women do not apply for the jobs, then they will not get them, which is very ignorant: all the company is paying attention to is the here and now. The second operate in an environment which is already attractive to women and is simply adopting a proactive posture. And then there is a third group that believes you cannot kick-start anything unless you have a campaign that forces the issues."

"I don't think it is the same vision, and I think this is the problem we have in the railway sector because it is byzantine in its structure. So when you are talking to a person, depending on their concept, you will have a very thin slice of what is wrong, it will be very specific."

It is clear that the challenges are myriad, a complicated tangle of disincentives and lingering cultural biases. Many agree that a unified voice is needed to tackle them. Overleaf we describe some of the ways proving effective in overcoming these missed opportunities, not least the work that Women in Rail is doing to bring the industry together in a joint objective of better female representation.



What can be done?



TACKLING PERCEPTIONS OF RAIL

Evidence has shown that girls are rejecting careers in engineering and rail from a very young age. To explain this, many psychologists point to the small cues and nudges which help us define who we are and who we are not. Some of the nation's most treasured books are a good example. Thomas the Tank Engine is still hugely popular but depicts our railways as controlled by a stoic male: the Fat Controller.

As children grow older and move into secondary socialisation (education), this image is reinforced further. Pupils learn about the history of the nation's steam railways from Stephenson's Rocket onward. Images of burly men covered in coal are shown as synonymous with engineering and rail. While seemingly innocuous, these perceptions stay with children and become particularly harmful to a rail sector which is crying out for women.

Studies show that 43 per cent of 14 to 19 year olds make their career or education decisions in isolation of any formal independent advice. As a result, a quarter of these base their decisions on the advice of parents, while more than one in six are opting to simply do the same as their friends. Parents are without doubt the primary architects of a fairer society and it is essential that they pay due attention to the influence they wield – consciously or otherwise – over their children. For the good of our society, and our economy, they must be encouraged to reinforce the message at an early age that girls and boys can do any job.

Making girls aware of the under-representation of women in physics makes a significant difference to their attitude, reinforcing their determination not to be disadvantaged by 'the system'.

Contact with people in the industry has proven remarkably effective at defeating these cultural biases among the young. Anecdotal evidence from Women in Rail members shows that children who have parents or role models in the rail profession when at a formative age are more likely to consider it as a career path. Your Life is a three year campaign launched by the government and supported by Women in Rail which is designed explicitly to increase engineering contact, help communicate the

social value of rail and engineering and help girls understand that becoming an engineer or working in rail can help improve and even save lives.

We can again take counsel from Sweden. There, engineers are revered as part of the national success story and consider themselves to be part of the elite. With strong governmental input, the recruitment of women was always a central strategy to its growth as an aspirational sector.

To reach its true potential, the railway industry needs to become part of the national story in the UK. And why shouldn't it be? We invented it, after all.

CHANGES TO EDUCATION POLICY

A report from the Institute of Public Policy (IPPR) in 2014 blames at least part of the engineering pipeline problem on the UK's education paradigms. Girls, it says, are "removing themselves from these career pathways at an early stage."¹ The UK educational system which almost uniquely permits students to drop out of science, technology, engineering and maths at A-level, allows these cultural biases a much stronger grip on the pipeline at a much younger age.

The IPPR claims that any review of the education system should "consider ways to increase and widen participation in STEM subjects". The current A-level system could move towards a structure similar to that of the international baccalaureate, which requires students to study maths and at least one science subject. This will not only boost the pool of potential engineering candidates, but also improve the level of scientific literacy among the public in general.

The IPPR also recommends a broader attack on stereotypes to debunk myths surrounding women in STEM and perceptions about careers. The government, it suggests, should invest in equality and inclusion training for teachers. Schools could be incentivised by a requirement to publish the proportion of girls taking STEM subjects at GCSE and A-level.

ROLES WHICH RESPECT FLEXIBLE WORKING

It would be wrong to suggest that there are no structural challenges for women seeking a career in rail. Every industry has room for improvement, particularly in its attitudes to and promotion of part-time work.

Inflexible attitudes towards working hours is a point that has proved off-putting for many women. For Clare Burles, People Director at Virgin Trains East Coast, the difficulty of arranging shift work around part-time contracts rarely outweighs the benefits of a diverse workforce. None of these challenges are insurmountable and should not be a deciding factor for women looking to enter the industry. In short, employers need to be more accommodating to part-time work.



This may be an issue best tackled through government initiatives. Sweden, for example, has adapted to ensure its female engineers can combine their family and professional lives through flexible working hours.

Women share a generous parental leave allocation with men, and there is high flexibility around child sickness and workers being able to take the day off. There are people of the opinion that this system is why Sweden has managed to maintain high levels of women within their STEM sector.

POSITIVE ACTION

While quotas remain unpopular, there is nonetheless a strong demand for some sort of positive action with regard to attracting women to careers in rail.

Anna Walker, Chair of the Office of Rail and Road corroborates this, stating that she believes the apprenticeship and programme space has the potential to be a very profitable one. The Department for Transport announced in August this year that more than 30,000 apprenticeship places will be created across the road and rail industry during the next five years. Leading the programme is Terry Morgan CSE who promised it will look at consciously targeting women as well as men.

It may be that the industry has to swing our gender neutral approach a little the other way for a time until it starts seeing some equality





in the workplace. Brunel University for example, offers one year of fully-funded study to women who want to study engineering. These women are then encouraged to train as STEM ambassadors to teach young children about the scope and potential of the subjects.

Network Rail has already done some fantastic work in terms of its diversity programme and raising awareness of the change that needs to occur. It pledged that by 2018, some 3,000 teenage girls at five schools in Milton Keynes – the home of the company's national centre – will receive career advice on opportunities in the rail industry.

Crossrail has made similar steps, establishing in 2013 its £13m Tunnelling and Underground Construction Academy (TUCA) designed to train the UK's future tunnelling experts. It is bound to a special objective concerned with encouraging more talented young women to the workforce. Its central section delivery director, Ailie MacAdam said at the time that the industry had a "responsibility to do more" to provide career paths for women and warned it was missing out on significant talent by failing to address gender inequality more quickly.

But we need to look at the detail: how best to advertise jobs to attract women as we know that women react differently to a job description. Unless they feel they meet all the

criteria specified, they will tend to shy away from applying.² It has also been found that women describe themselves by who they are rather than what they do. The language needs to reflect that.

CONCLUSION

Ultimately, the responsibility for this change lies with the organisations within the railway sector. This point is echoed by Malcolm Brown, CEO of Angel Trains. For him, the next step to carry change forward is to identify role models in the industry. "I want to look at any business and be able to say, 'right, you are an absolute role model, you have got the male female ratio right' and – importantly – right throughout the business, not 49 per cent of women across the company who all work in HR."

Like many in the industry, Malcolm Brown is extremely positive about changes that have taken place so far, but he also points out that there is still some way for us to go.

What is abundantly clear is that dedication to the root cause of the gender imbalance from across the industry will be the key to its progress, both culturally and economically.

However, it is also self-evident that the rail industry is in possession of a wealth of relentless enthusiasm which – properly harnessed – will certainly enable it to meet the challenges that lie ahead.





Closing remarks



Thanks to record government investment, rail is a growth industry in the UK. It's therefore more important than ever that women are aware of the fantastic opportunities that a career in rail offers.

I welcome this important report from Women in Rail and look forward to seeing how the industry addresses the issues it raises. The government has already started work on a transport skills strategy, to look at how we can encourage greater diversity in the workforce, including attracting more women into engineering. Last year rights were extended so any employee can ask for flexible working so long as they have 26 weeks service with their current employer, meanwhile there have been 16,000 more STEM A-level entries for women since 2010. I hope that we can inspire future generations of girls and young women to become part of this exciting and expanding industry.

Claire Perry
Transport Minister

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Our interviewees



Anna Walker
Chair of the Office
of Rail and Road



Terence Watson
Country President
of Alstom and
Co-chair of the Rail
Supply Group



Clare Burles
People Director at
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Maria Dean
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Maggie Simpson
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Lee James
Equalities Advisor
at ASLEF



Malcolm Brown
CEO
Angel Trains



Claire Perry
Rail Minister

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