



Hampshire
and Solent
LSIP



FROM SKILLS SHORTAGE TO SKILLS STRATEGY

A Blueprint for Defence and
Aerospace Talent in Hampshire

LSIP WHITE PAPER 2026



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1.0

BRIEF CONTEXT AND HIGHLIGHTS

> CHLLNGR has been commissioned by the Hampshire Chamber to lead the development of a 2025/6 white paper. The aim is to collect high-calibre insights from distinguished academic experts and business professionals across the LSIP region.

All comments are anonymised to ensure that we achieve the critical and real-world voices of our respondents, to best ensure that the whitepaper was powerful enough to drive real change to LSIP.

OUR TOP COMMENTS & HIGHLIGHTS.

"I would say that there is a huge lack of emotional intelligence, which does not read the room or read the team."

"The immediate gap for us is licensed UK aircraft engineers, a huge shortage and we are not alone."

"My worry is how we are conditioning our new younger generation for the workforce."

"One thing we have thought about internally and are implementing now is to be on the front foot and demonstrate the future successes."

"The worries that we have are that the industry is misusing AI and the result is that it is perceived to be 'trusted' in a way that it shouldn't be or not trusted at all, so there is a very polarised situation and more than just pure generational."

"I would like to have much more business-ready case studies, and we have areas where there are more applied examples, such as providing prototypes in construction."

"In work, it's not just up to the adults to teach the children."

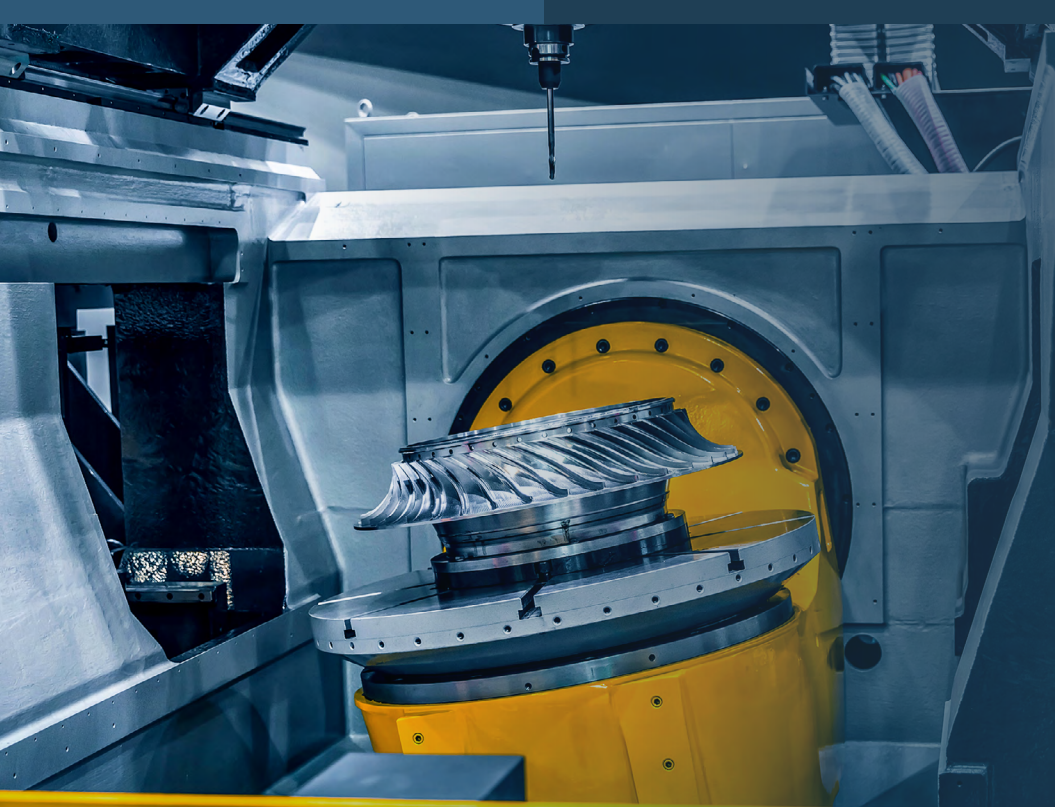
"People need to see the benefit to them, whatever their age, of using AI."

"If we did a campaign around advertising for new talent and also the 'retired' talent coming forward, that would be a major win win!"

"This is the best skills matching that is happening now; by listening to the employers, colleges are making best-in-class apprentices ready for the role."

"Nowhere in the curriculum is communication taught, and schools are judged so harshly on their GCSE results."

"Fundamentals and stripping back, our schools are not having the right curriculum. Back to 4–5-year-olds, they are just not fit for purpose for first-touch business."



OUR TOP COMMENTS & HIGHLIGHTS.

"Post schools - we fail them for 12 years and not get Maths and English grades 4 and above, because we don't have the right provision for them afterwards."

"Soft communication is the biggest gap across the entire education spectrum. There has been blame put on the mobile phones/social media for young people, but it is our opinion that the schools are just not equipping students with the right skills, above and beyond any mobile phone."

"The clever part is how you position AI to everyone and in what context. Basically, what value does it add to me."

2.0

OVERVIEW

Hampshire's defence and aerospace sector is experiencing a critical and accelerating skills gap that threatens its long-term competitiveness, innovation capacity, and contribution to national security. This white paper brings together extensive primary research from employers, educators, and industry leaders across the LSIP region, revealing a system under strain yet rich with opportunity for targeted, collaborative intervention.

Our primary research was anonymised and conducted predominantly through face-to-face meetings or, when appropriate, video calls. Comprehensive interviews were held with

highly specialised industry leaders, all of whom occupied leading roles within educational institutions (FE, HE, and PhD) and were actively employed at the time of the interviews.

In addition, participation from business leaders across various industries enabled the white paper to thoroughly address key challenges and examine underlying factors. Most importantly, it offers strategic recommendations for effectively navigating both micro and macro shifts, providing guidance on how organisations can progress successfully through 2026 and beyond.



THE SESSIONS EXPLORED A SAMPLE OF THESE QUESTIONS FOR PARTICIPANTS:



QUESTION 1

What are the key skills gaps and training challenges facing employers now and over the next three years?



QUESTION 3

What are the barriers to staff training and development?



QUESTION 2

What's working well, and what's not and how could it be improved within in the current skills and training system (academia and business)?



QUESTION 4

How would academia and business like to engage with future skills initiatives?



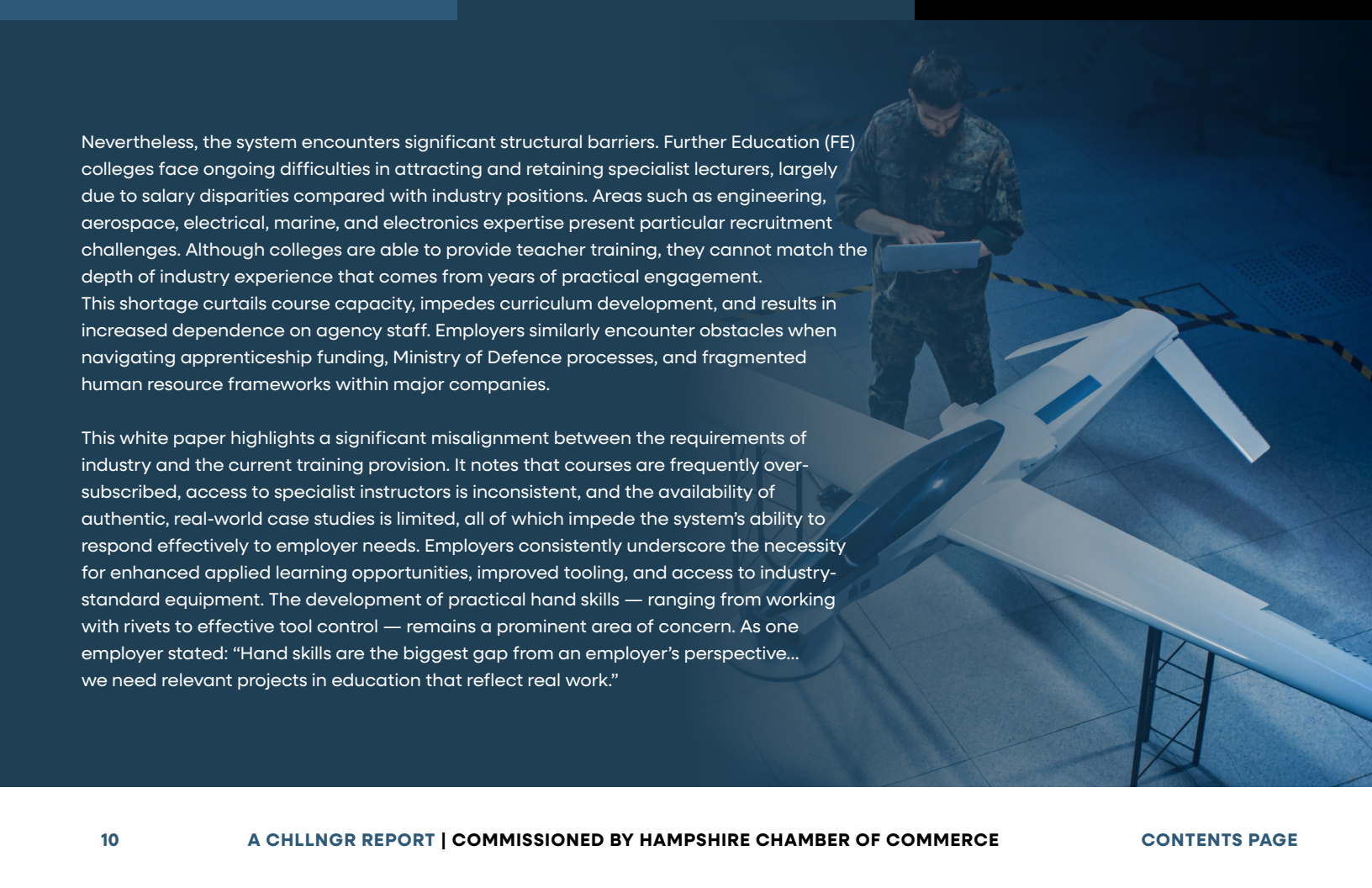
Across the region, employers consistently highlight acute shortages in critical technical positions, such as licensed aircraft engineers, precision machinists, CNC operators, composites specialists, microcontroller technicians, and advanced engineering professionals. Recruitment processes are protracted, the available talent pool has diminished, and competition for experienced personnel remains exceptionally high. The demographic challenge is particularly pronounced, with a significant proportion of senior engineers nearing retirement age and an inadequate pipeline of early-career entrants to succeed them. As one employer observed: “The immediate gap for us is licensed UK aircraft engineers - a huge shortage and we are not alone.”

In addition to the well-documented technical shortages, the sector is confronted with a pronounced deficit in soft skills, notably in the areas of communication, emotional intelligence, resilience, and people management. Employers repeatedly emphasise that new entrants frequently encounter difficulties in communicating effectively, maintaining independence from mobile devices, and conducting themselves with confidence within commercial settings. These deficiencies can be traced to early educational experiences, where the pressures of curriculum delivery and league-table performance incentives leave minimal scope for the development of practical, interpersonal, or workplace-readiness skills. As one educator observed: “Nowhere in the curriculum is communication taught... the biggest gap across the entire education spectrum.”



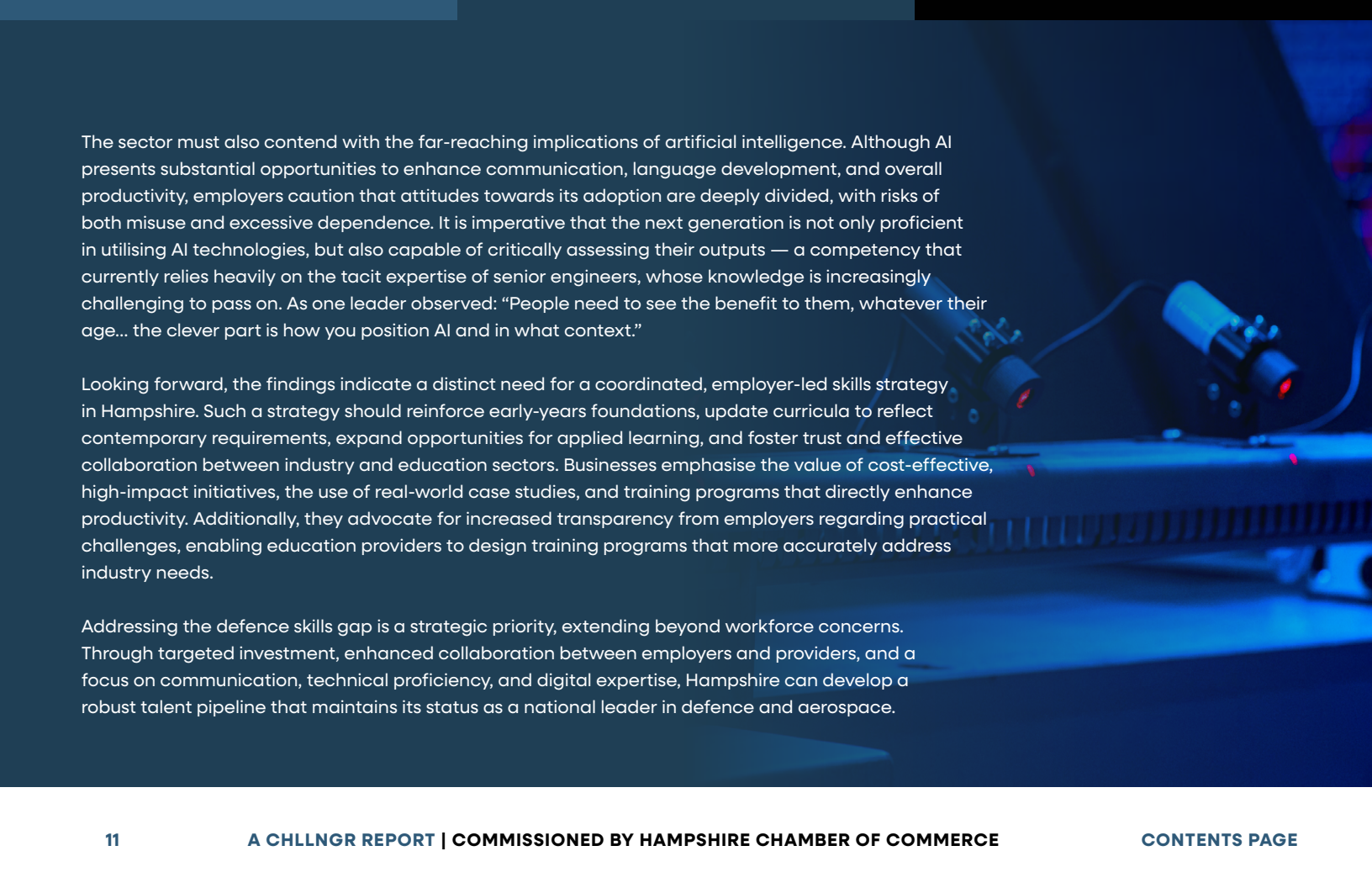
Despite these challenges, Hampshire demonstrates robust further and higher education provision, supported by high-quality colleges, universities, and specialist training centres. Employer engagement is a key strength, evidenced by advisory boards, hub-and-spoke models, and the Hampshire Defence Cluster, which facilitate transparent dialogue and collaborative problem-solving. The region's colleges collaborate rather than compete, sharing best practices, aligning salaries and benefits, and coordinating employer engagement activities across North Hampshire, Brockenhurst, South Downs, Isle of Wight, and the wider Solent area.

Employer-led innovations, exemplified by Gulfstream's investment in advanced training facilities, composite centres, and the provision of industry-standard tooling, serve as compelling evidence of how collaborative, co-designed programmes can efficiently produce engineers who are immediately equipped for industry demands. The success of Apprenticeships, T Levels, and degree apprenticeships is most pronounced where employers engage proactively, with several colleges reporting outstanding results when industry partners contribute directly to curriculum development, resource allocation, and assessment standards. As one leader articulated: "This is the best skills matching happening now; by listening to employers, colleges are making best-in-class apprentices ready for the role."

A man in a military uniform is standing next to a large white aircraft model in a hangar. He is holding a tablet and looking at it. The aircraft is a high-wing model with a blue stripe on the side. The hangar floor is made of large grey tiles. The background is dark and out of focus.

Nevertheless, the system encounters significant structural barriers. Further Education (FE) colleges face ongoing difficulties in attracting and retaining specialist lecturers, largely due to salary disparities compared with industry positions. Areas such as engineering, aerospace, electrical, marine, and electronics expertise present particular recruitment challenges. Although colleges are able to provide teacher training, they cannot match the depth of industry experience that comes from years of practical engagement. This shortage curtails course capacity, impedes curriculum development, and results in increased dependence on agency staff. Employers similarly encounter obstacles when navigating apprenticeship funding, Ministry of Defence processes, and fragmented human resource frameworks within major companies.

This white paper highlights a significant misalignment between the requirements of industry and the current training provision. It notes that courses are frequently over-subscribed, access to specialist instructors is inconsistent, and the availability of authentic, real-world case studies is limited, all of which impede the system's ability to respond effectively to employer needs. Employers consistently underscore the necessity for enhanced applied learning opportunities, improved tooling, and access to industry-standard equipment. The development of practical hand skills — ranging from working with rivets to effective tool control — remains a prominent area of concern. As one employer stated: “Hand skills are the biggest gap from an employer’s perspective... we need relevant projects in education that reflect real work.”



The sector must also contend with the far-reaching implications of artificial intelligence. Although AI presents substantial opportunities to enhance communication, language development, and overall productivity, employers caution that attitudes towards its adoption are deeply divided, with risks of both misuse and excessive dependence. It is imperative that the next generation is not only proficient in utilising AI technologies, but also capable of critically assessing their outputs — a competency that currently relies heavily on the tacit expertise of senior engineers, whose knowledge is increasingly challenging to pass on. As one leader observed: “People need to see the benefit to them, whatever their age... the clever part is how you position AI and in what context.”

Looking forward, the findings indicate a distinct need for a coordinated, employer-led skills strategy in Hampshire. Such a strategy should reinforce early-years foundations, update curricula to reflect contemporary requirements, expand opportunities for applied learning, and foster trust and effective collaboration between industry and education sectors. Businesses emphasise the value of cost-effective, high-impact initiatives, the use of real-world case studies, and training programs that directly enhance productivity. Additionally, they advocate for increased transparency from employers regarding practical challenges, enabling education providers to design training programs that more accurately address industry needs.

Addressing the defence skills gap is a strategic priority, extending beyond workforce concerns. Through targeted investment, enhanced collaboration between employers and providers, and a focus on communication, technical proficiency, and digital expertise, Hampshire can develop a robust talent pipeline that maintains its status as a national leader in defence and aerospace.

3.0

KEY SKILLS GAPS AND TRAINING CHALLENGES: WHAT'S WORKING WELL.

In the following sections 3.0, 4.0 and 5.0 you will find a selection of detailed excerpts from our research interviews, in relation to key topics discussed.

3.1 There is value in the apprenticeship scheme and is a great way to encourage young talent to join this industry. We currently have 3 apprentices onboard and 2 ex-college students who did their T Level work placement with us and then joined full-time once they completed their studies.



- > 3.2 We are super lucky in our area because we have a lot of provision, and some might say too much. We've got a good number of quality colleges, private trade providers and universities. We have provision in almost all areas and are relatively accessible for the majority.

This is a benefit as it does improve competition and also provides some challenges with over provision as I have colleagues who have one construction course, and once it's full it's full. Even if they have 20 learners or 20 businesses once it's full, it's full and we can't do anything about that.

Our universities are strong and have an excellence range, some vocational/academic, some more dedicated to businesses that form part of their new employment strategies straight out of education. Some staff have lots of restrictions on courses that are full up, and students miss out until the next semester.



- > **3.3 Aerospace is working really well, Gulfstream has really helped us accelerate the business. They recognised that we did not have enough correct resources and helped build them internally with us. This encouraged more big players to join and help the growth and success. 4 years ago, 4-6 apprentices, now we have 140 aircraft maintenance engineers and bookings for 2026 are already very encouraging. This also includes the FE side and parents are also joining forces.**

Originally started at technician level but a lot of the companies wanted much more senior higher end degrees, currently have 17 apprentice degrees in engineering - typically aero or defence.

The client spent £5m on the research and innovation centre. We also spent another £1m on the training centre. A holistic working

party helped develop a composite centre, so that clients like McLaren are totally employee-led. Hand skills have become so important and one of the ways is to make tool kits out of BBQ's and install plane electronics into the BBQ and engineers are taught to fix aircraft electronics blind so that in the real-world practice when an aircraft is in flight or in maintenance. This is the best skills matching that is happening now; by listening to the employers, colleges are making best-in-class apprentices ready for the role.

This also ensures that companies can be less reliant on the existing teams to fully supervise and micromanage every aspect, so that general repairs can be made to aircraft, releasing the most required human resource.



4.0



KEY SKILLS GAPS AND TRAINING CHALLENGES - WHAT'S NOT WORKING WELL

> 4.1 Our company is an engineering manufacturing firm and we make precision spec parts for clients in the defence and aerospace industry, in particular pump gears. We work to tight tolerances of 3 microns. The challenge for us is finding candidates with basic engineering skills (i.e. able to interpret engineering drawings, handle measuring equipment, able to do concentricity checks, etc.), who have relevant engineering/ aerospace experience and CNC experience operating Mazak and Gleason machines.

Many years ago, the talent pool in the local area was bigger, however this has declined as businesses have moved away. The competition for local talent is therefore quite high. Recruitment is challenging and can take months to fill a role. It may also be a general shift in what careers are attractive today. We spoke to another college a while back and they indicated that Level 3 Machining Technician courses are not so much in demand; they see more students are interested in the maintenance or design element of engineering.

Understanding the apprenticeship scheme and how much funding is available, is a bit more challenging. We partner with Farnborough College of Technology for apprentices, so we rely on them to explain it to us.

- > 4.2 Fundamentals and stripping back, our schools are not having the right curriculum. Back to 4–5-year-olds, they are just not fit for purpose for first-touch business. We should be teaching more about mortgages and interest rates, but we are still measuring young people on the same yardstick, and an academic one. Proving that you have a good memory is not the same as proving that you will be good in the workplace, and with different skills etc. Post schools — we yet again fail them for 12 years and not getting Maths and English grades 4 and above, because we don't have the right provision for them throughout and afterwards.

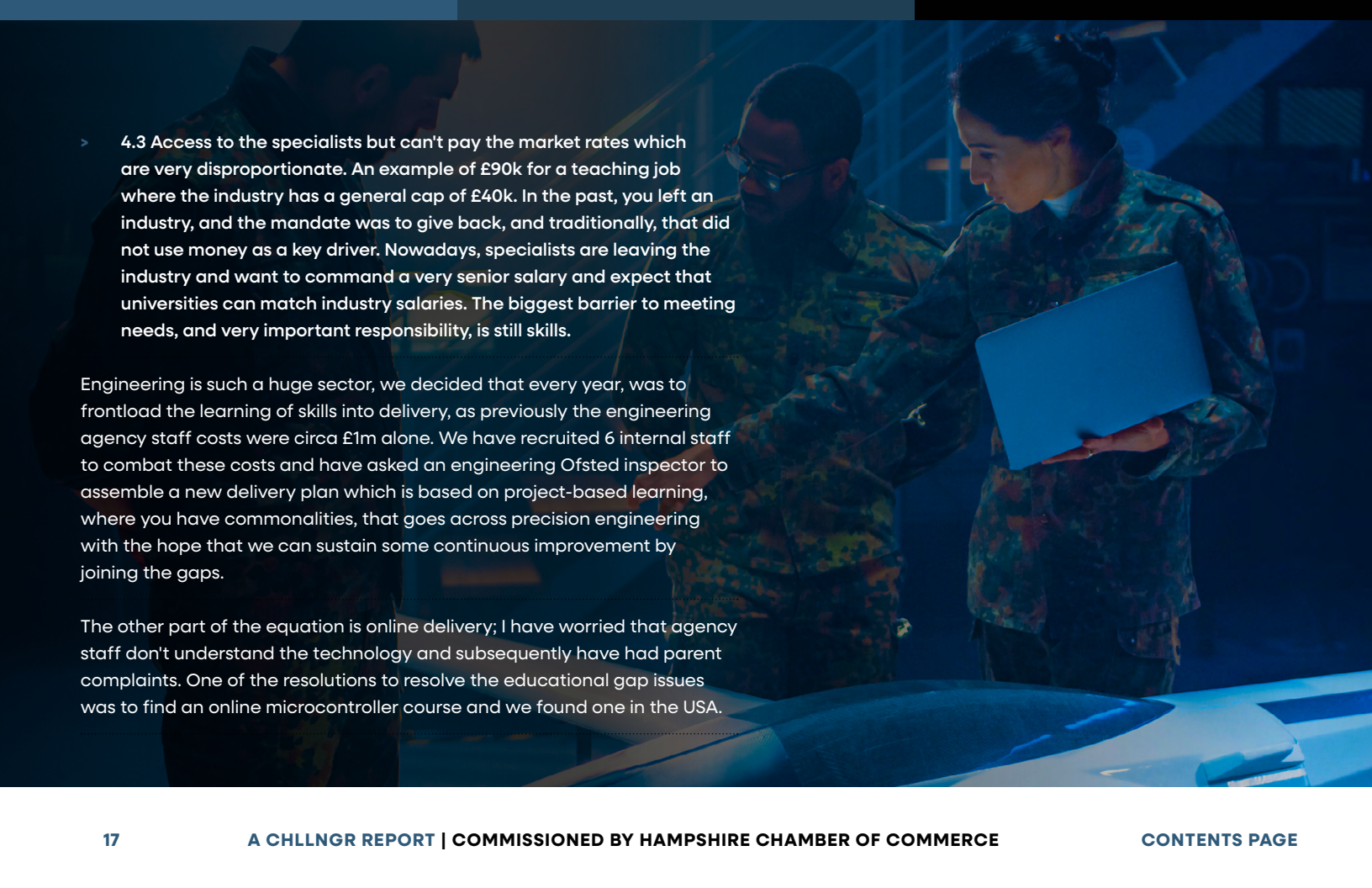
If you are an academic and get good A-Levels, and if you are not purely academic, and don't have a good parental support network/role model at home or post-school you will fall into that group, and that group is growing fast. It's also more about the system - and then disaffected for 12 years, label them as they are difficult. Through the ages of 4–9 we don't have the right learning programmes to best support them and

towards their GCSE's. They also have to keep trying until they are 18 years old, even if they fail four times – again, we just don't have the right programmes from these disaffected students so that it becomes useful and engaging, and ready for work.

Lots of tools that have worked before, but we haven't the money to fund them, this is a national issue. Then we wonder why our league figures are going up, and then employers complain that students are not able to communicate in the workplace and work with others.

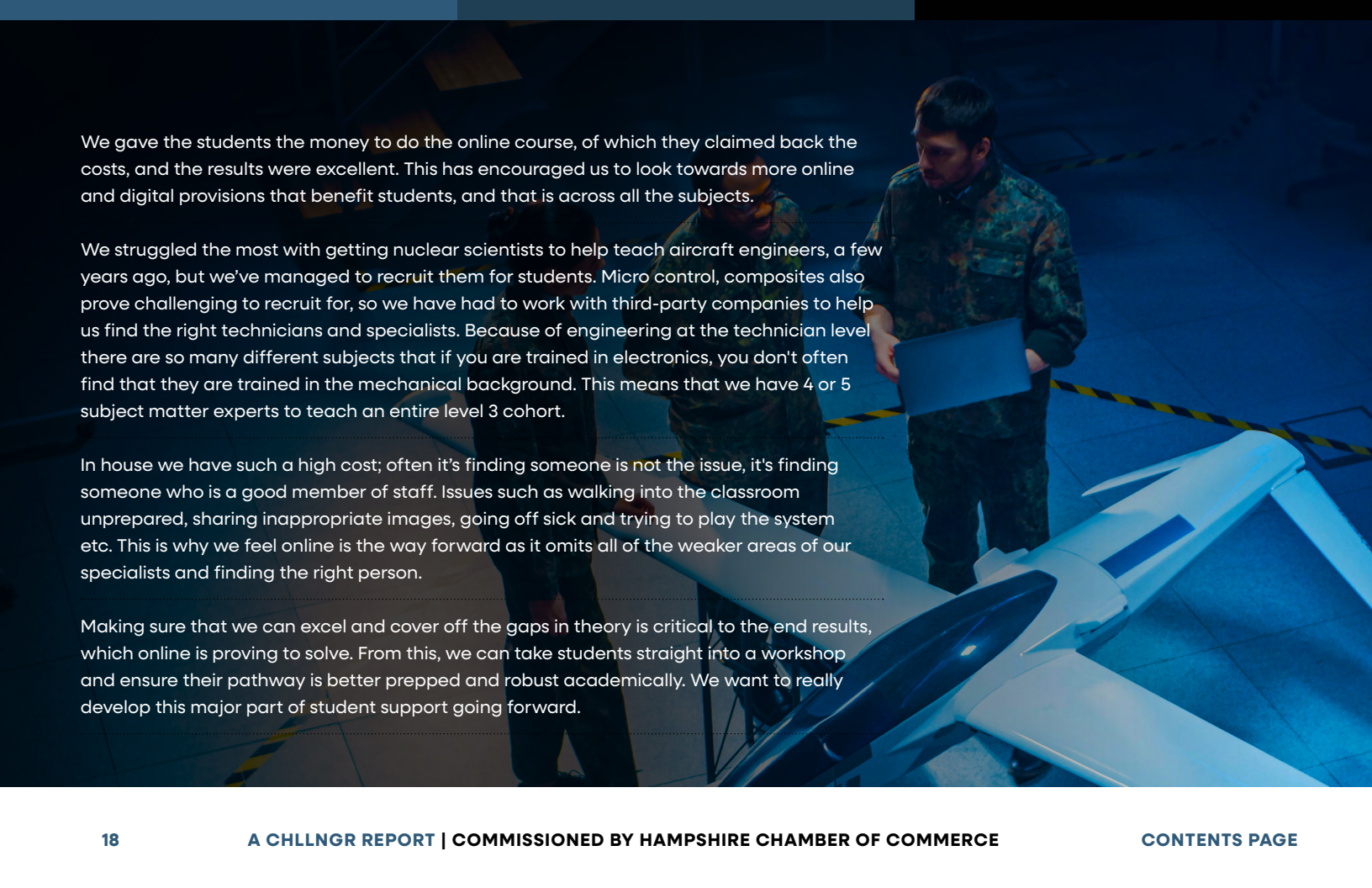
Soft communication is the biggest gap across the entire education spectrum. There has been blame put on the mobile phones/social media for young people, but it is our opinion that the schools are just not equipping students with the right skills, above and beyond any mobile phone.

Nowhere in the curriculum is communication taught, and schools are judged so harshly on their GCSE results, so trying to fit in these types of essential soft skills means there is just no room for them to be included. Pressure is all on passing grades and very little else. Too much focus on the league tables, it's seen as a failure to create a well-rounded student.

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- A background image showing three individuals in military-style camouflage uniforms. Two men and one woman are gathered around a laptop, looking at the screen. They appear to be in a workshop or industrial setting, with a car visible in the foreground. The image has a blue tint.
- > 4.3 Access to the specialists but can't pay the market rates which are very disproportionate. An example of £90k for a teaching job where the industry has a general cap of £40k. In the past, you left an industry, and the mandate was to give back, and traditionally, that did not use money as a key driver. Nowadays, specialists are leaving the industry and want to command a very senior salary and expect that universities can match industry salaries. The biggest barrier to meeting needs, and very important responsibility, is still skills.

Engineering is such a huge sector, we decided that every year, was to frontload the learning of skills into delivery, as previously the engineering agency staff costs were circa £1m alone. We have recruited 6 internal staff to combat these costs and have asked an engineering Ofsted inspector to assemble a new delivery plan which is based on project-based learning, where you have commonalities, that goes across precision engineering with the hope that we can sustain some continuous improvement by joining the gaps.

The other part of the equation is online delivery; I have worried that agency staff don't understand the technology and subsequently have had parent complaints. One of the resolutions to resolve the educational gap issues was to find an online microcontroller course and we found one in the USA.

A photograph of three individuals in military-style uniforms standing in a hangar. They are gathered around a laptop held by one of them, looking at the screen. In the foreground, the nose and cockpit area of a white aircraft are visible. The background shows the interior of a large hangar with yellow and black striped safety tape on the floor.

We gave the students the money to do the online course, of which they claimed back the costs, and the results were excellent. This has encouraged us to look towards more online and digital provisions that benefit students, and that is across all the subjects.

We struggled the most with getting nuclear scientists to help teach aircraft engineers, a few years ago, but we've managed to recruit them for students. Micro control, composites also prove challenging to recruit for, so we have had to work with third-party companies to help us find the right technicians and specialists. Because of engineering at the technician level there are so many different subjects that if you are trained in electronics, you don't often find that they are trained in the mechanical background. This means that we have 4 or 5 subject matter experts to teach an entire level 3 cohort.

In house we have such a high cost; often it's finding someone is not the issue, it's finding someone who is a good member of staff. Issues such as walking into the classroom unprepared, sharing inappropriate images, going off sick and trying to play the system etc. This is why we feel online is the way forward as it omits all of the weaker areas of our specialists and finding the right person.

Making sure that we can excel and cover off the gaps in theory is critical to the end results, which online is proving to solve. From this, we can take students straight into a workshop and ensure their pathway is better prepped and robust academically. We want to really develop this major part of student support going forward.

- > 4.4 There is a whole plethora of challenges; what businesses want is not reflective of the graduate with no experience. For example, who can communicate or interact without a mobile phone. We are finding that the younger generation is not resilient or robust enough, and for me that starts in school and in FE educational establishments and the blame has to focus on them to some degree.

It's too nicey-nice, here's a sticker for taking part, and it's just not like that in any commercial business. I admit in the public sector it might be more 'bland', but in the real world every department has to make money and be able to perform and be accountable.

My worry is how we are conditioning our new younger generation for the workforce. In our software division, we are also finding that those young people prefer to work remotely. So therefore, a big step change for us is that we are now not defined by our talent pool only being in Hampshire. We have been able to recruit people in Manchester and much farther afield, as they are now all working remotely, allowing us to expand our skills sets.

We therefore have a lot of good software skills but lack man-management skills. Therefore, we have lots of accidental

managers who have been doing the role, or have been able to demonstrate working in a technical capacity for 8 years, and have four of five team members but struggle with these small teams, so what we have that there is a glass ceiling, with few strategies able to combat this at the start, throughout and post manager placement. I would say that there is a huge lack of emotional intelligence, that does not read the room or read the team.

The immediate gap for us is licensed UK aircraft engineers! Huge, huge shortage and we are not alone with competitor analysis, looking at the demographics of our engineer workforce most of them will be retiring in the next ten years and we don't have enough coming into the lower end of industry to offset those that will be retiring – so that is our immediate pressing requirement and that is biting us now as we don't have enough licensed engineers to keep up.

Life aircraft engineering is quite a pathway, likely 10 years in length, typically starting with an apprentice – Farnborough College of Technology runs one apprenticeship. This is typically 3-4 years to get a licence just to be a mechanic for the aircraft, and then they have to re-study again to get a b-license to successfully sign off an aircraft.

- > 4.5 We have considerations across student basic recruitment to PHD and professorships. Where we are really struggling is the master level, PHD and post doctorate and upwards. There are several factors that affect this and not necessarily skills, because we do have excellent international visibility. However, we can't always offer the jobs we want to due to candidates' regulation and laws restrict nationalities that we would normally offer. Europe used to be our place to go but since Brexit we have limited options such as getting a visa and 12-month contract have not been planned in enough or at all, so our business planning now incorporates internal upfront costs and then time restrictions on employing staff and encouraging new students.

We try to put enterprise and research as one, such as our student programmes, which are 3 years long with a one-year placement in industry and then come back to finalise their degree. This is an option that many students take up, roughly 40%, and then there is a possibility of full-time apprenticeship with a professional client such as Airbus, Rolls-Royce and formula one (which has become the most popular route). We have found that students are going for

first-time placements in the financial services sector as they pay a lot more for engineering-based roles (more problem-solving skills are having the most impact).

We have also noticed that the students that have studied an engineering career, that they do stick to engineering even if they have had a year out to financial services, this is partly due to the thick comradery that is a place where you belong, and this above the placements that they have done to find extra money does not sway them from their original trajectory.

We do also have a transitional plan with the military and will take ex-military people back into live roles right now.

5.0

WHAT ARE THE BARRIERS TO STAFF TRAINING AND DEVELOPMENT AND HOW WOULD BUSINESSES LIKE TO ENGAGE WITH FUTURE SKILLS INITIATIVES?

- ” > 5.1 Health and safety are key, especially in this line of work. However, giving the students more practical experience and involvement in the daily production process, may be beneficial to keep them interested in pursuing this as a career.

Like the skills white paper - The task is ALL on business and they are all struggling with the current costs such as increase in NI! From modern work and immersive experience, foundations and apprenticeships, the government is devaluing all of the above. We are stuck in a world of inaction. Something has to give, and skills if you ask me is the thing that gives!

- > 5.2 It has to be low-cost and positively affect the bottom line. Powerful, simple and effective has to be the way forward. Proof that these things work in practice. Nice to haves don't exist so all we can do is make a difference.

We need more industry case studies that are real-world, industry ready and need to be embedded into academia. The young apprenticeship programme needs to return. In Portsmouth we have a UTC but there is not enough light shining on the provisions — joining the employer, curriculum and exams/reports has to improve. It's all PROVEN work. 85% leave them successful in work, this model needs to return in masses – it's not for everyone but it works. We have students that are naturally creative and others the complete opposite such as vocational.

> 5.3 What we find useful is meetings with like-minded employers, and we are very much in a position to ask what we want from employers, but we always want more. We find commonly that processes in central government (MoD) are highly layered and getting through these are painful for providers and employers. If the employer has a good understanding of, for example, apprenticeships, they tend to know how to make their own processes work and get them through the hoops a bit quicker.

With the super large companies, it is apparent that this is very disjointed and that HR will have a digital account line manager and that person is often not in the same country and or district, so the alignment is always off. We have had some very random requests from HR that ask for welding courses to be provided, when they already have their own staff on level 3 and level 4 welding courses, hence the departments are highly dysfunctional and not joined up.

One thing we have thought about internally and are implementing now is to be on the front foot and demonstrate the future successes and how universities are working closer with employers and showcase to them what best practice looks like, where and why. We find that the government is just purely reactive and just

moves onto the next thing with employers, but if we provide the hard evidence that is coming out, then actually the proof is that we are incredibly responsive to employers and that we celebrate together but also face new challenges and ensure that the feedback is 360 at all times.

We are looking for continuous improvements, and it's a lot easier to work with employers that feedback to us and ensure that when the right skills and behaviours are correct, we need to report this. Something for all colleges in the next 2 years — so celebration is key when we are dealing with soft skills that span communication (the biggest gap by far), people management, and presentations.

Building confidence, initiative and resilience is so important in how we deal with additional skills. BAE and Boeing, re-skilling mechanics where common sense is intertwined into the educational programmes. This should be a core area as we all move forward, where we share the wins that help shape success.

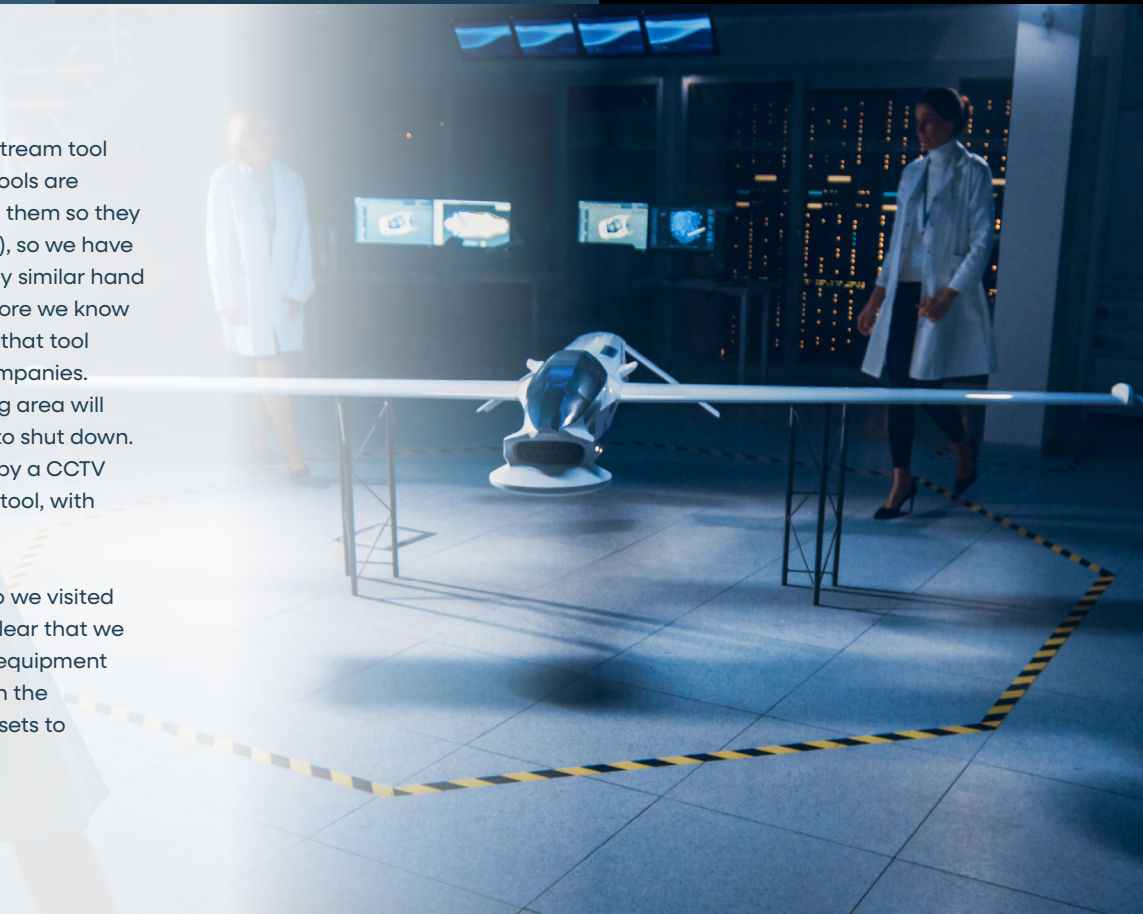
> 5.4 Case Studies - Would like to be much more business-ready case studies, and we have areas where there are more applied examples such as providing prototypes in construction that is not ringfenced in confidentiality anymore, could the student produce a critical evaluation where they provide across construction and skills competition - but we feel we are always on the backfoot where these example projects are not properly represented, OBO of employers. We feel that we are always on the back foot with currency. Hand skills are the biggest gap from an employer's perspective, so getting them relevant projects into education will make the most difference when they come to work on the job.

In the past, when we have delivered a qualification at level 2, and for example, Gulfstream are not interested in their rivets at level 2, they want them at their industry standard level. So, it's very important that we make sure that we have 360 feedback and constant validation from employers.

In the past, we faced some tough and constant criticism from students about being employer ready. We attended the client's workshop, and they explained that the screw drivers being used were not fit for purpose at Gulfstream. Previously they were using tools to make holes into metal and that the result is a very different tool, and had to review the full training processes, hence the development of a BBQ process where they can work blindly but complete a task.

We can't have full access to any Gulfstream tool kits, as they are highly monitored (all tools are pictured and logged with who is using them so they know where the kit is at any one point), so we have implemented a brand new set of highly similar hand tools (named a shadow board), therefore we know that all the tools have gone back and that tool control is essential to working with companies. Even placing one spanner in the wrong area will cause the entire engineering division to shut down. These tools are constantly monitored by a CCTV central team, and they can trace any tool, with any employee, and on which airplane.

Gulfstream tool kits are world-class, so we visited other establishments to see that it is clear that we have not been the benchmark of the equipment required. We had to speak further with the employers about hand tools and BBQ sets to ensure students were business-ready.





> 5.5 AI is a problem for anyone above millennials and we are actively seeing to see how it plays out in our business, but in all honesty we quite premature but we are on point in our finance and recruitment (ATP) is working well on CV passing but we have not yet applied to the engineering parts of our business and again we are often on the back foot. The brutal truth is what is still required is a human being with a spanner fixing an aircraft.

A lot of skills courses that we have run have been recently on how to work in a high-performance culture, in a safe environment, being inclusive across multi-generational groups. For example we have a cohort of 16-year-olds and a 73-year-old engineer that works here. We are doing reverse mentoring to ensure that the older generation does not fear AI and are helping to bridge these generational gaps. Even down to simple tasks such as working in the app store and downloading an app to solve the same problem.

While useful, what this doesn't achieve is the harnessing of the grand skills and experience of the older 65+ generation, who we still have in our business, to find a safe place for inclusive and multi-generational people to thrive, it's still very much a work in progress.



In academia, we have developed, together with our own mentors of AI, to make better insights and benefits of using new ways of working such as AI, so that we can close the gaps between the benefits and limitations of AI.

The worry that we have is that the industry is mis-using AI and the result is that it is perceived to be 'trusted' in a way that it shouldn't be or not trusted at all so there is a very polarised situation and more than just pure generational.

Reliance vs practical capabilities are currently in flux. Therefore, we have this situation of not using AI and opposed to a huge over-reliance on AI to do everything with very little middle ground. As a leading education institution, we are trained to teach and develop these skills so that we are not asking them to stay away from AI.

On the contrary we are asking them to use AI, compare it with traditional knowledge and to see if it matches up or if they can see discrepancies, this is something that we are trying to create the next generation of people that use AI, more responsibly because using AI can be really easy but the difficulty is that, is the answer a reliable one.

This is why we are reliant on the older generation who have these skills, but we are finding that it's super difficult to pass those essential skills on to the younger generation so that they can interpret the answer correctly from AI.

In industry, we see that people are using AI to produce letters, and these letters are very wordy and full of fluff, not good enough for a professional submission. What we are really looking for is when an employee or student takes away AI, can they actually produce a submission letter like that in the real world.

Therefore, I am looking for a person who can articulate, is grammatically correct, has a grasp of communicating directly but with enough empathy. It is required that the person can communicate authoritatively in whatever situation - AI is NOT that. AI can give them a bit of a steer but make it all sound lovely but when you take AI, do they have that ability to understand how to communicate and I'm not convinced that AI is taking that away from people's ability to do that for me.

In my team, I do not like AI letters - it has to be human to human ones where you need to sit down properly with that letter to that individual. I don't want a pure AI response, where I know that it's not going to work for me, and again even more concerning that we are using AI responsibly and then know why that does not work in the roles that we are looking for, and the roles already employed. In work it's not just up to the adults to teach the children.





> 5.6 What would best practice look like?

People need to see the benefit to them, whatever their age of using AI. The old guard would say, convince me. Why do I need any AI to write that letter when I can do this myself without any digital infrastructure when I have all of the skills and knowledge anyway.

The clever part is how you position AI to everyone and in what context. Basically, what value does it add to me.

So, in my opinion, and in our educational facility, AI can seriously unleash potential. If you can use AI to do something you better, then that's great. An example I have is that English is not my first language and AI has allowed me to become better at improving my UK language skills.

I have also been able to use AI to better my French and German, which is super useful as normally I would have to book a meeting with an international language teacher that can help me solve these problems.

Therefore, in the right context AI has the amazing potential as a tool that can be unleashed to help solve some of the communication gaps if used correctly.



➤ 5.7 Homegrown Hampshire talent from the ground up.

As a leading educational facility we have already a lot channels that are engaged with businesses and monitored, institutions from mechanical engineering and the royal aeronautical society, which is the 1st place where engineer should be engaged with but we're absolutely open to speak to new and existing industries so that we can understand their need for a required skill set which are more tailored to their needs.

They are resistant to this most of the time because the industry is not wanting to expose their real-world problems which is a major barrier as if we are not able to understand these then it makes it super difficult to map, match and create a skill set that addresses these business problems through the academia route. There is a huge gap to the sharing of critical knowledge, and they are not willingly balancing the conversations required versus exposing the potential loss of IP.

In an ideal world we would have all of our talent, on the doorstep of Farnborough. Whether that's HR or finance, marketing, sales and admin. We appreciate that is not going to happen based on the current trajectory of employability. This is because our talent pools are stretching across all of the United Kingdom, since Brexit.

We have really struggled as we can't tap into the European market for our engineers and pilots so we have become a visa sponsorship company, but that process is extremely complex, extremely over complicated, bureaucratic, non-effective, and non-efficient so for business we want people, we want to get it done. One of my team members this morning was working from home and trying to submit another visa application, but my team just didn't hear anything about it in enough time. So, we are assuming that the visa part is a very broken system when we're trying to expand our talent pool.

> 5.8 Advertising in Hampshire – Billboards & Digital

Yes, to this, putting adverts for licensed aircraft engineers to come forward and solve our business needs. We know it's more than just our wishes, a few of our big competitors need this also, so if we did a campaign around advertising for new talent and also the 'retired' talent to come forward, that would be a major win win! Ultimately it has to increase the number of applications.

After you process the application, then comes the bigger struggle. making real jobs available. Also, together and across all of Hampshire institutions, we have such amazing skill sets not fully utilised. We need to work much closer with each other to collaborate through an agile system

to speak and work with industry. This for me is the real gap, other countries such as the US. There are so many more opportunities with channels via employers and universities that does not happen here in the UK.

Having the right behaviour also from the employability standpoint, is crucial as we have had many applicants get to the final stage and not make it because they are just not good enough as a cultural fit. Perhaps that is something that can be tackled as a skill set in education before they get to the employer. It's probably worth reading an employer's website, social media, press and news statements to better understand the tone and language of the culture of an organisation, before an interview or even applying.



6.0

WHITE PAPER RECOMMENDATIONS

6.1 STRENGTHEN B2B AND B2E COMMUNICATIONS TO CLOSE THE LICENSED AIRCRAFT ENGINEER GAP

The shortage of licensed UK aircraft engineers represents the most critical and widespread skills gap currently identified. Although the qualification pathway is lengthy, exceeding ten years, the existing communication challenges among employers, further education, higher education, and training providers are addressable. A leading aerocompany is planning for a ten-year exit if no new blood is coming through the ranks, of which we have strong evidence that these skills are well on their way.

6.2 MORE SPECIALISTS IN EDUCATION ARE REQUIRED.

There is a distinct gap in practitioner-based specialist staff, such as nuclear physicists, who can help apply the academic knowledge into real-world practice to help pass exams, assignments, and complete projects. More specialists would mean that there is a lot less reliance on 'agency' staff who typically want to double the fees offered by educational establishments, and are very unreliable with sickness and have lower duty of academic care attributes for students.

6.3 USE DIGITAL CHANNELS TO HELP STUDENTS THRIVE

Whilst there is a distinct gap in specialists, some educational providers have engaged with digital course platforms (for specific parts of the curriculum) to help close the gap on these human challenges, with digital pass rates and student satisfaction feedback.

6.4 INTEGRATE REAL-WORLD DEFENCE CASE STUDIES INTO CURRICULUM AND ASSESSMENT

All interviewees consistently highlighted a key issue: students are not ready for the workplace because current curricula lack genuine industry relevance.

This approach guarantees that both learning and assessment are firmly rooted in the realities of the defence sector, making students much better prepared for industry demands.

ESTABLISH A DEFENCE CASE STUDY BANK

Secure, anonymised collection of real engineering, manufacturing, cyber, and logistics scenarios provided by employers.

CASE STUDY OF THE MONTH

Implement a 'Case Study of the Month' scheme, where employers take turns presenting a live, real-world challenge for students to tackle.

INDUSTRY-STANDARD TOOLING PACKS

Develop 'Industry-Standard Tooling Packs' for further education colleges, inspired by the Gulfstream shadow-board method, so that students train using tools and equipment that closely replicate actual working environments.

PRACTICAL ASSESSMENTS

Require all practical assessments in engineering, composites, electronics, and marine to be validated by employers, ensuring alignment with genuine defence-sector standards rather than generic engineering tasks.





6.5 BROADEN RECRUITMENT CHANNELS: EMBRACING INTERNATIONAL, REMOTE, AND AI-DRIVEN TALENT STREAMS

Due to the limited pool of local candidates, employers are increasingly seeking talent from outside Hampshire and the UK.

Propose the development of a 'Hampshire Defence Talent Visa Route', targeting government stakeholders, to facilitate streamlined short-term visa processes for highly skilled professionals such as specialist engineers, composites experts, and microcontroller technicians.

Establish a 'Remote-First Defence Skills Hub' to enable Hampshire employers to access software, cyber, and systems specialists nationwide.

Implement AI-driven language support programs to expedite the integration of international hires into UK engineering teams.

Introduce a 'Global Skills Exchange' initiative in collaboration with universities in Europe, India, and the Middle East, supporting placements for PhD candidates, postdoctoral researchers, and specialist engineers.

This strategy positions Hampshire as a leading destination for global talent, transforming its role from that of a regional recruiter to an importer of high-level skills from around the world.

6.6 REFORM HOW INDUSTRY AND EDUCATION ENGAGE WITH THE MoD

The MoD is described as "clunky, layered, slow, and difficult to navigate." This is a major barrier for both employers and providers.

This would dramatically reduce friction and improve outcomes across the ecosystem.

DEVELOP A 'MoD NAVIGATION TOOLKIT' FOR SMEs, EXPLAINING:

- > procurement pathways
- > security clearance processes
- > apprenticeship approvals
- > digital account management

PILOT A 'JOINT MoD-FE-INDUSTRY SKILLS TASKFORCE' TO ALIGN:

for SMEs, explaining:

- > T Level placement needs
- > apprenticeship standards
- > future capability requirements

CREATE A 'MoD SKILLS LIAISON OFFICE' FOR HAMPSHIRE

- > A single point of contact to simplify communication between colleges, SMEs, primes, and MoD departments.

INTRODUCE A 'DEFENCE SKILLS FAST-TRACK SCHEME'

For SMEs to bypass unnecessary layers when offering placements or apprenticeships.

6.7 BUILD A MULTI-GENERATIONAL DEFENCE WORKFORCE STRATEGY

Our interviews highlight a widening generational divide older engineers with deep tacit knowledge, younger engineers with digital fluency but weaker communication and resilience.

Additional recommendations

- > **Launch a 'Defence Knowledge Transfer Fellowship' pairing retiring engineers with FE/HE to codify tacit skills.**
- > **Create a 'Resilience and Professionalism Bootcamp' for 16–25-year-olds entering defence roles.**
- > **Introduce 'Reverse Mentoring Programmes' where younger staff teach digital skills to older engineers.**
- > **Develop a 'Common Sense in Engineering' micro-credential, inspired by BAE and Boeing's re-skilling programmes.**

This strengthens the workforce at both ends of the age spectrum.



6.8 EXPAND WORK-PLACEMENT
CAPACITY THROUGH NEW DELIVERY
MODELS

T Level placements are becoming harder to secure as more colleges adopt the programme.

This increases placement capacity without increasing employer burden.

Additional recommendations

- > Scale the 'Buddy-Up Employer Model' (three students per placement) across Hampshire.
- > Introduce 'Micro-Placements' 1-day-per-week rotations across multiple SMEs.
- > Create a 'Defence Work-Experience Clearing House', matching students to employers in real time.
- > Develop 'Employer-set Project Briefs' that can be completed partly on campus, reducing the burden on SMEs with limited space.



6.9 ADVANCE AI LITERACY AND ESTABLISH AI INTEGRITY STANDARDS THROUGHOUT DEFENCE TRAINING

Our interviews reflect significant apprehension regarding the potential misuse of AI, excessive dependence on technology, and the diminishing of vital communication skills.

Develop an 'AI Integrity Framework' for defence employers and educators, detailing:

- > Methods for identifying AI-generated work
- > Guidance on appropriate and prohibited use of AI tools
- > Strategies to teach students critical analysis of AI outputs

Introduce AI-assisted communication and language support modules, specifically aimed at students whose first language is not English, to broaden participation opportunities.

Create a cross-generational AI mentoring scheme, where experienced engineers are paired with younger, digitally adept students to foster mutual skills development.

Trial an 'AI-Free Assessment Week', requiring students to demonstrate their ability to produce high-quality written and technical work independently of digital aids.

This approach positions Hampshire at the forefront of responsible and effective AI integration within the defence sector.

6.10 CREATE SAFE, CONFIDENTIAL MECHANISMS FOR INDUSTRY TO SHARE REAL-WORLD PROBLEMS

A significant barrier is that defence employers — particularly prime contractors — often hesitate to disclose operational challenges, which hinders providers from developing targeted training solutions.

These measures are intended to foster trust and expedite the alignment of curricula with industry requirements.

Establish a Defence Skills Confidentiality Charter that enables employers to share anonymised or redacted challenges with further and higher education institutions under non-disclosure agreements.

Initiate a 'Closed-Door Defence Roundtable Series', convened quarterly, where SMEs and prime contractors can address topics such as:

1. tooling issues
2. hand-skills gaps
3. safety concerns
4. supply-chain bottlenecks
5. emerging technologies

Develop a 'Problem-to-Curriculum Pipeline' so that issues identified in roundtables are systematically incorporated into new modules, micro-credentials, or practical assessments.

Appoint a 'Defence Skills Ombudsman' to facilitate communication between employers and providers when dialogue stalls.



6.11 MODERNISE EARLY-YEARS AND SCHOOL-AGE PREPARATION FOR ENGINEERING CAREERS

The documents show a deep systemic issue: children are not being prepared for technical or workplace-readiness skills from ages 4–16.

This addresses the root cause of the soft-skills crisis.

CREATE A 'FIRST TOUCH ENGINEERING' PROGRAMME FOR AGES 4–9, FOCUSING ON:

- > problem-solving
- > communication
- > teamwork
- > spatial reasoning

INTRODUCE A 'WORKPLACE BASICS CURRICULUM' FOR AGES 11–16, COVERING:

- > communication
- > resilience
- > financial literacy
- > digital safety
- > engineering fundamentals

PILOT 'EMPLOYER-LED MASTERCLASSES' IN SCHOOLS, DELIVERED BY ENGINEERS, TECHNICIANS, AND APPRENTICES.

DEVELOP A 'DEFENCE CAREERS ROADSHOW' TOURING HAMPSHIRE SCHOOLS ANNUALLY.

6.12 BUILD A HAMPSHIRE DEFENCE SKILLS INNOVATION MISSION

Given SHCCG's Innovate UK status, Hampshire is uniquely positioned to lead nationally.

This positions Hampshire as the UK's most innovative defence skills region.



Additional recommendations

- > Create a 'Defence Skills Innovation Lab' to test new training models, AI tools, and employer-led curriculum. Introduce "Micro-Placements" 1-day-per-week rotations across multiple SMEs.
- > Develop a regional 'Skills Sandbox' where employers can trial new technologies with students.
- > Introduce 'Rapid-cycle Curriculum Updates' every 6 months based on employer feedback.
- > Launch a 'Defence Skills Impact Fund' to support SMEs in offering placements, apprenticeships, and case studies.

6.13 ADDITIONAL RECOMMENDATIONS

- > Establish a 'Defence Engineering Skills Accord', a formal agreement among major contractors, SMEs, and further/higher education providers to share annual forecasts of workforce requirements, including anticipated retirements, licence needs, and apprenticeship opportunities.

- > Launch a collaborative 'Engineer Pipeline Dashboard' for Hampshire to track:
 - the current number of apprentices in training
 - projected licence achievements
 - anticipated retirement trends
 - available regional training capacity

- > Create a collaborative 'Aircraft Engineer Pathway Explainer' aimed at schools, parents, and careers advisers, providing a clear overview of the 10-year qualification process to encourage early interest and recruitment.

- > Trial a 'Returners to Engineering' initiative focused on inviting retired or semi-retired engineers to contribute to training, assessment, or mentoring activities.

These actions shift the focus from a shortage of talent to a challenge of coordination, positioning Hampshire as a pioneering region in systematically addressing the issue.





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