ASTRA
RAF

Stories from the Future:
The RAF in 2040

ROYAL AIR FORCE

ficint[1] **[fik-in't]**

(noun)

Fictional Intelligence; useful fiction, a meld of narrative and nonfiction.

(See also: speculative fiction)

Front Cover Image Credit: NASA

[1] Credit: August Cole and Peter Singer - https://useful-fiction.com/why/

Could an RAF recruit in 1990, at the collapse of the Soviet Union, have foreseen operating a UAV from RAF Waddington over Helmand Province in 2014?

Could a recruit in 2000 have anticipated being able to check their pay statement on the MyRAF app in 2020?

The only certainty in these scenarios is change.

So how do we prepare for this change? How can we make sense of the vast unknown that the future brings?

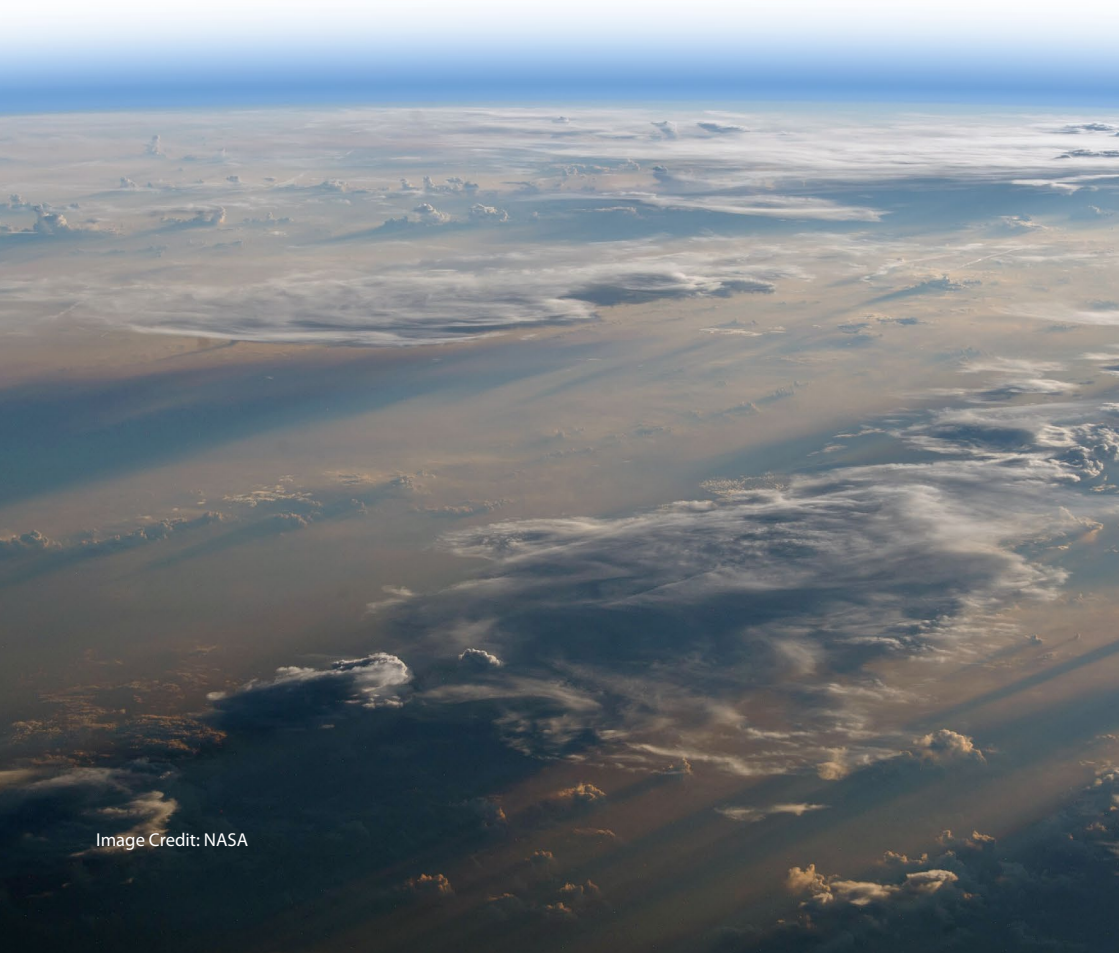


Image Credit: NASA

Introduction

This collection of stories represents a different way of describing the future. Rather than a strategy document or list of new kit, the future is expressed with narrative detail so you can imagine what life might be like for the future RAF.

This compilation was built by a small team within the RAF, using their creative skills and talent to illustrate some potential future worlds. The authors were simply tasked "what do you think the RAF of 2040 may be like?" As such, each story stands alone. The stories have been "engineered" to capture what is possible, challenges we could face and what might be fielded in 20 years' time.

The themes are bigger than hardware; work, organisational, social, and management practices will all be challenged in the future. Be on the lookout for those changes and take time to reflect whether this is reasonable.

As these are short stories, short biographical sketches have been pulled out so you can "meet" the major protagonists. Do these people resonate with you? Can you imagine your future self in these situations?

We hope you enjoy the stories and the artwork. Most importantly, we hope it makes you think and chat with your colleagues about the future of the RAF. This should be challenging! When we pause to think what the next generation may hold, we must realise that our actions today are what will get us there.

Prologue

Flight Lieutenant Mo: *52*

Mo left the service as a Sergeant in 2025, and spent time working for a haptics and AI contractor. He re-joined the Service as a Flight Lieutenant in 2038, on a 60% flexible contract, in the Air and Space Operations profession. He is completing a work-placement in his spare time with the aim of a lateral move back into the Defence Industry.

Flight Lieutenant Olivia: *25*

Flt Lt Olivia was a direct entrant to RAFC Cranwell, having completed her International Baccalaureate. She has been front-line aircrew for less than a year. She has ambition to be a Weapons Instructor and is applying for an exchange post within the Qatari Emirati Air Force.

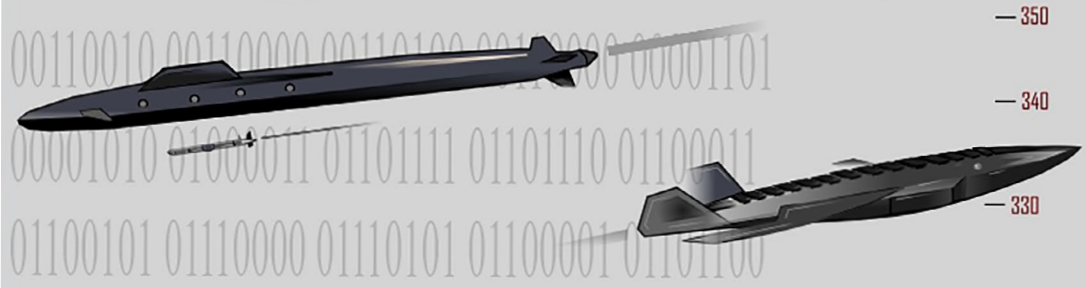
Corporal Esme: *23*

Joined the RAF as a direct entrant through the Science and Technology Talent Scheme. Having completed an in-service MSc in Emerging Sustainable Energy during her training, she joined the Forward Operations Wing as a team leader. Her ambition after this tour is to buy her own house and apply for the executive NCO scheme.

Master Warrant Officer Charlie: *33*

Master Warrant Officer Charlie joined the RAF in 2028 as a direct-entry Sergeant. Having spent time in core intelligence posts overseas, they completed a CAS Fellowship to study the security implications of 7G technology. This led to a transfer onto the executive NCO scheme and a return to the UK alongside partner Max and daughter Iris.

DINNER NIGHT



2024

CONCEPTUAL

Dinner Night

Greeta reacted to a wave of Mo's hand and turned off the news. It knew he was not a morning person and made a gentle throat-clearing noise before speaking.

'Good morning, Mo. The time is 06:00 hours. Your coffee is ready, it's a blend based on your biometric reaction to those of last week, and I think you'll like it.'

Mo reached for the cup as he checked his tablet to see if there were any updates on that day's exercise. There was nothing new, so he reverted it to its unclassified level. Greeta flashed up his diary but he swiped it closed. He did not need reminding of the date; that evening was the Battle of Britain centenary dining in.

'Greeta, chase up my mess dress.' He knew it would be checked against his latest 3D body scan and drone delivered by the end of his shift.

'Your clean dress uniform will be delivered to RAF Lossiemouth later today,' it answered. 'Your Uber is outside. How's the coffee?'

Mo finished the cup and smiled. Greeta smiled back and winked. Mo laughed and shook his head. The AI upgrades of recent years allowed the latest model to mimic emotions, a far cry from the basic Siri of his childhood.

'Greeta, wake the rest of the family at 08:00 and remind them I'll be at the centenary dinner tonight. Put the Battle of Britain movie in the suggested viewing file for the children, the 2029 version.'

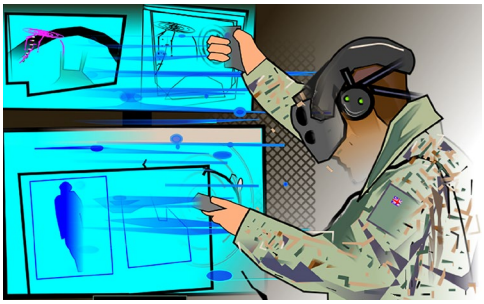
The hologram nodded then waved him goodbye and went into sleep mode.

It took 30-minutes in the Uber Commute to RAF Lossiemouth and the journey was smooth enough for Mo to sit back and nap while the autonomous car joined the morning traffic. He would rather work from home like many of his colleagues but the security restrictions on the haptic kit he operated meant he had to work his three-day week at a datacentre. Working three days allowed him to balance his civilian work and a career in the Royal Air Force.

Mo had worked for a leading defence haptics contractor after leaving the RAF in 2025. Haptics, the recreation of touch on robotic systems, had interested him since he first experienced the 'rumble' vibration of a flight simulation game as a boy. Working on a defence contract had inspired him to re-join the RAF as a Reservist on a Limited Service Commitment, bringing his skills with him.

As he walked into the headquarters, building his virtual assistant reminded him he had ten minutes until his shift started. He went through the multi-redundancy password system, using his implanted ID and biometric scans to gain access to the basement level where his control pod was located. He often wondered how people

used to manage to remember the plethora of passwords and combination codes required for life before biometric scanning and implanted tech.



He found his allocated pod and repeated the access process. He settled into his rig, pulled on his gloves and helmet, and activated the haptics. As the system auto-configured itself to his preferences he watched other avatars appear as the rest of the flight logged in at their datacentres. Most of them were in the UK but Mo smiled at the thought of the time difference in Nevada where the avatar of his former Cranwell classmate Cath yawned and waved as she logged on at Creech. They had met while training at the Haptic and AI Systems Centre at the Portal and had stayed in touch ever since.

The rig was a virtual reality interface – a reclined chair housed the components, making the system relocatable to anywhere with a power supply and network port. Although some control pods, like the one he was in at Lossie, were protected facilities, many were located in plain sight and in a worst-case scenario Mo could deliver basic missions from anywhere through his tablet, using a VR headset and haptic gloves.

He ran through his checks before accessing his mission log. His first message confirmed he had been activated, providing the necessary legal framework for him to conduct his role as an uncrewed air system operator. He would receive flight pay on an hourly rate while activated, not that his rate of pay bore any relation to his rank – as an operator it was based on his qualifications and experience.

The Volunteer Aircrew Scheme

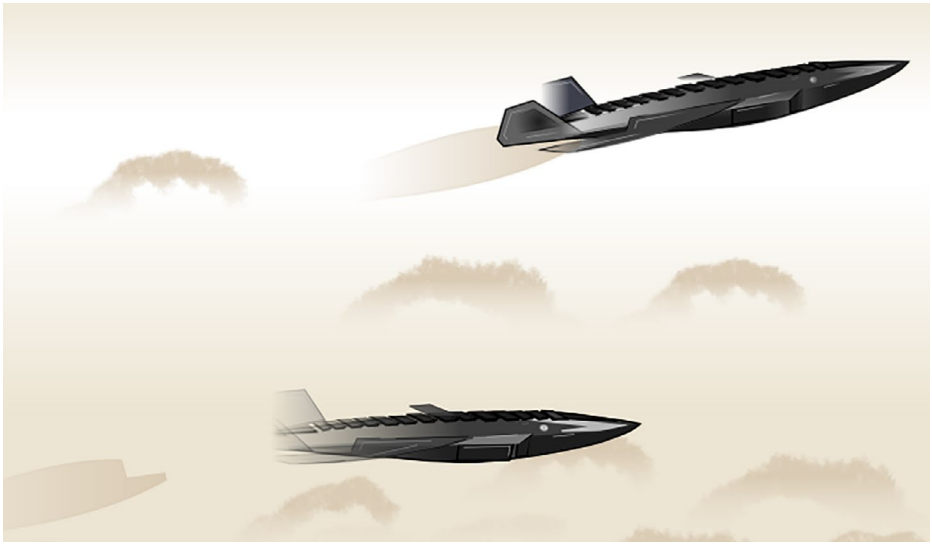
Since realising, in the late 2020s, that the shift in crewed to uncrewed ratios was going to dramatically decrease the number of traditional aircrew, the RAF had radically rethought how aircrew were trained and used. Although individuals could still join as career live-fliers, the bulk of RAF aircrew time-shared their flying duties with a primary role in a different profession. Generally, their primary role took up about 60% of their time and the rest was spent remotely operating a variety of air and space platforms. As a result, uptake in the Volunteer Aircrew Scheme had been incredibly popular: more than 25 per cent of the RAF wore wings on their uniform.

The next entry in his mission log was a video introduction from his flight commander, followed by the crisp tones of the briefing room AI. The AI introduced

experts from the C2 and planning spine, who walked Mo and his colleagues through the mission plan and contingencies in a pre-recorded video.

It was not going to be as exciting as his other platform-rating, remote teaming larger UAVs alongside Tempest, but not bad for a Wednesday morning. He entered a time-stamped confirmation that he was content with the briefing and his system shifted to operate mode, informing him he would be taking control in five minutes. He tried to calm his nerves, the control rig alerting him to his heightened heart rate. He made a mental note to instruct Greeta to cut back on the caffeine in his morning blend.

The exercise was in full swing as he came online. He pulled some data from an F-35 working with a P8 over the North Sea one hundred miles up the road. He didn't need to bother the crews; he only needed some electronic signature data. He used the information to task an uninhabited Mosquito under the local control of the F-35. Swarm Mosquitos could be tasked by whoever needed them and Mo, as a Flight Lieutenant, was authorised to pull combat assets if it was in-line with the mission outcome. Bader, his AI shadow, showed his plan was 95 per cent compliant: good enough. The Mosquito sped off towards the P8 track, correlated by the Royal Navy underwater glider. He had seen this pattern of responses before and had a good idea what it was.



'Bader, mix the combined signature with the Laika class submarine data on the agency-only database.'

He needed to make the connection manually; Bader was not authorised to roam free in the agency database.

'Confirmed Mo, it's 69 per cent Laika.'

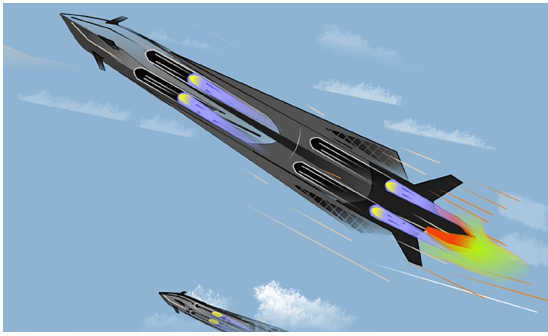
His right side haptic vibrated and gave a gentle tug, turning his head. His Mosquito was being scanned, but by what and from where exactly?

Bader cut in: 'It's a low earth picosat, elevation, right 40.'

Mo had missed it and he could see his Mosquito was already picking up heavy cyber interference. His attention was grabbed by another haptic. Something was seriously wrong.

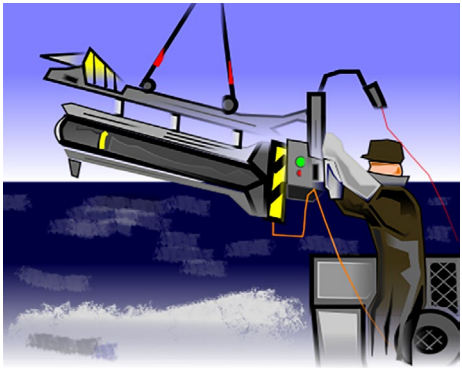
'Bader, update!'

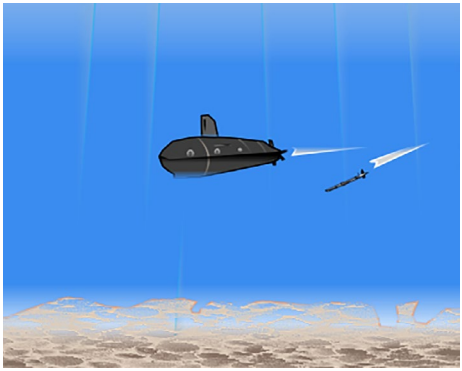
'Multiple hypersonic missiles inbound RAF Lossiemouth, estimated time of impact 35 seconds.'



It was a massive escalation. Our drone shield would intercept most of the incoming missiles, but the rules of the game had changed. He manually changed the risk escalation acceptance level. A 69 per cent confirmation was now inside attack parameters: the Laika had just become a viable target.

The Mosquito was gamely fighting a massive electromagnetic and cyber-attack which pummelled its comms and nav systems. Luckily, the lasercom was pretty much impossible to jam. Mo's attack was pretty textbook – Mosquito 1 co-ordinating with the underwater glider and one of the endurance Merlin variants from HMS Prince of Wales. The instant battle damage assessment from UKOneWeb8 showed a clear debris field and the glider despatched recovery swimmer bots to harvest anything interesting from the submarine.





After the debrief, Mo picked up his cleaned uniform from an autolocker and walked to the Mess. Greeta had booked a room via Fulmar, the base AI, and anticipated

his choices from the dinner menu. He showered then called home to speak to his family, who admired his mess dress.

He went to the bar for a pre-dinner drink and joined John and Kerry, his closest friends in the Service. John was a full-time regular and Kerry was a part-time Regular. Mo loved days like these – wake up at home, bash through a high-octane Ex then catch up with friends and talk shop.

He raised his glass: 'Someone once said that the feeling you get from worthy work and being part of a team that always has your back was second to none. Damn right. Now, Battle of Britain dinner here we come.'

- Are future battlefield leaders likely to trust technology even if it potentially conflicts with what they are observing on the ground?
- How do you see UAV air and space operations being controlled in 2040?
- What challenges will human/machine teaming present our organisation?

SECOND LIGHT

2040

CONCEPTUAL

Second Light

It had been a typical British summer, intense electrical storms interspersed with weeks of drought, until today, and Flight Lieutenant Olivia Tuck was taking advantage of the glorious September evening. She was stretched out on a bench in her Lincolnshire garden. An image of a singer hovered a few feet in front of her face. She hummed along to the tune.

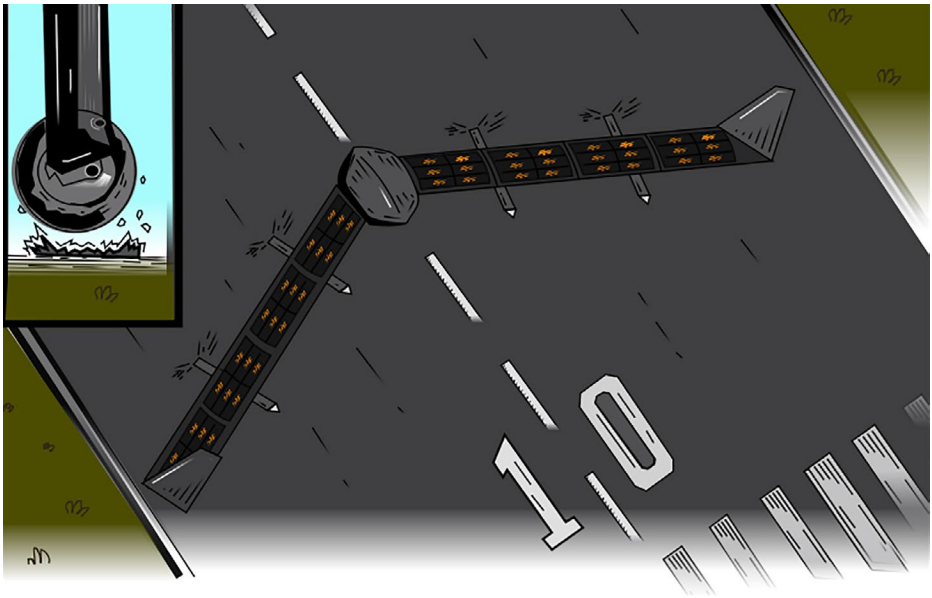
Suddenly her ears were filled by angry static and the singer's hologram flickered and disappeared to be replaced with a spinning message.

REPORT TO SQUADRON IMMEDIATELY

Olivia's car silently glided through the Coningsby main gate, her bio-recognition software matching her details with the security database.

The route to the squadron took her parallel to the main runway. As she passed the halfway marker, the low sun was eclipsed by the huge wingspan of a High-Altitude Long Endurance vehicle on its take-off roll, its wingtip almost within touching distance of her car. Olivia's concern grew – the HALEs were a National Standby asset. If they were being launched, something was very wrong.

She pulled up at the squadron just as a couple of her fellow pilots came jogging round the corner. Ozzie had gone through training with her. Easy-going with a ready smile, he was one of her closest friends. Syed was a new arrival, recently



posted in from 29 Squadron where he had operated the uncrewed Quick Reaction Alert aircraft, colloquially known as the Q-drones. Both looked grim as they greeted Olivia.

'What have you guys heard?'

'Nothing yet,' Ozzie replied. 'We were in the Mess watching the holo when the sirens went off. Everything's down now: holo, net, vidphones. It's all dead.'

They entered the squadron HQ, retinal scans confirming the identity of each as they passed. The ops specialist pointed them towards the main briefing room. 'Hurry,' he hissed. 'You're the last ones.'

Olivia slipped into the darkened room and took a seat. The room was packed – all the squadron pilots had been summoned. They looked back and forth between each other, urgent whispered conversations confirming that no one knew what had prompted the briefing. The noise quickly died down as the Squadron Commander walked into the room.

At 32, Emma Vale was one of the youngest Wing Commanders in the RAF. However, what she lacked in experience, she more than made up for in competence. Identified early as a rising star and fast-tracked through her career, she was the best boss Olivia had ever worked for and she knew the rest of the squadron felt the same. Her perennial grin was nowhere to be seen as she faced her pilots.

'Thank you all for coming. We're not sure what's happening at the minute, but here's what we do know. At approximately 1745 Zulu, the Space Operations Centre picked up a massive IR bloom at 36,000km above sea level, followed almost immediately by a second at 20,000km. The timing of the two events make it extremely unlikely that they were accidental. You're all space-trained, so you know the relevance of those orbits. The initial explosions scattered a huge amount of debris, setting off a chain reaction of collisions which have effectively denied us the use of space.

"Thirty minutes later, our radars picked up multiple unidentified contacts 100 miles west of Norway heading for the Scottish coast. Fortunately, our early warning allowed us to launch the HALEs in time. They're providing line of sight communications for our Remotely Piloted Systems in the absence of any working satellites. The Q-drones have been launched. They'll be our first line of defence. You will be our second.

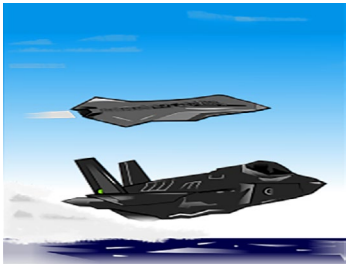
"The jets and wingmen are being warmed up now. Don't forget, GPS is down, so make sure you select QC on start."

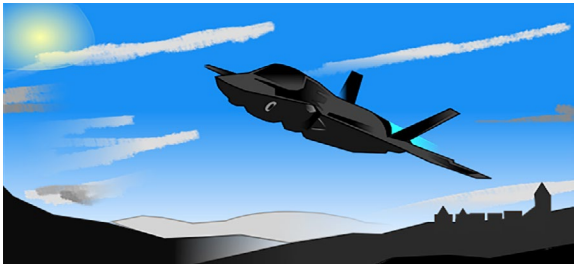
Olivia glanced at Syed and smiled. The two of them had run a Quantum Compass scenario together in the sim last week, making them the most current on the squadron in the rarely practised discipline.

'Check in with Hotspur on launch; it'll transmit vectors to your jet's AI. Wave details are being sent to your datapads now. First wave launches in 10 minutes. Good luck.'

Olivia checked her pad. She was in wave one. There was no time to feel scared, no space in her mind for anxiety. She had a job to do, a job she had been training for her entire adult life. Running to her Tempest, her only emotion was the thrill that always sparked through her when she prepared to fly.

Until the OCU, all her training had been full-AR sim. It always felt exciting to climb into the real thing. She jumped into the seat which immediately moulded itself to the contours of her body, ready to provide pressure to counteract the immense G-forces she would be subjecting herself to. Within minutes, she was rolling down the runway, tingling sensations in her back alerting her to the presence of the pair of automated drones maintaining tight vic formation behind her jet. She climbed rapidly to 50,000 feet, her jet's AI automatically handshaking with the nearest node of the National Virtual Control and Reporting Centre.





Glowing circles flashed up on her canopy, moving with incredible speed towards the base she had just taken off from. The AI discounted these targets. There was nothing she could do against hypersonic missiles – she had to hope that the defensive swarming drones circling Coningsby would be enough to deal with them.

More circles flashed up. These were viable targets – still well beyond the range of her eyesight, but not beyond the range of her missiles. The AI allocated six to her wingmen, two to her. Taking a deep breath, she gave the AI permission to engage. Out of the corner of her eye, she caught glimpse of the date and despite the tension allowed herself a wry smile. 15 Sep 2040. One hundred years after the RAF's finest hour, the second Battle of Britain was about to begin.

- How will we ensure resilience for our future space capabilities?
- What challenges can you see with autonomous AI operations?

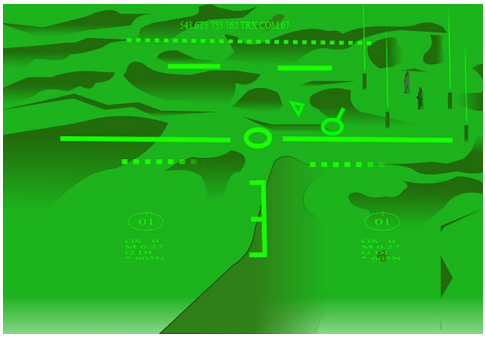

DRONE F.A.R.P
2ر,4ر

Drone FARP

An electric storm crackled to the east, far enough away that it would not affect them. Esme checked the Met report read-out. "Hmmm, a chilly night with a slight breeze." It should not matter; they were not planning on being long.

She loved the challenge of running a Forward Arming and Refuelling Point but hated the waiting. She fought the urge to key her mic. They all knew the radio state was at emcon zero; even a short-range burst could be traced. As she craned her neck the first specks of light began to appear on the horizon. She glanced as her laptop buzzed and swore under her breath.

Offline* *Offline* *Offline



This was going to have to be what her instructor called an 'old school' play. Her grimace turned up at the edges. Five hours ago, things had been a lot more mundane. Sure, not every day starts with the parachute-insert of a full forward-refuel team. But everything had gone well, and they had everything prepared within two hours of arrival. Now it was just a waiting game.

The grid was laid, and her team was ready. The first customers began to arrive shortly after dark. This was to be a full refuel and rearm, with only 30 minutes to do it – 150 drones, battery change, lens clean, missile re-arm and data download. An impressive feat with a four-person team in the middle of nowhere.

It had gone well. The backup data pulled off the birds was already uploaded into the Dowding II system, being used to verify the real-time data pulled from the mission. A good day at the office.

Only two of the birds had been left on the ground. Both had *Link Fail* flashing on the display. Scotty, their technician, was new out of training and keen to impress the team.

"Do you want me to reset them?" he asked, desperate to get them all in the air in case there was a third wave that night.

"Yeah, just remember the emissions control state… make sure they're in the right mode," she replied.

The emcon state meant that Scotty was doing this on his own. Normally he would have had reach-back straight into the support team at RAF Waddington, with all their diagnostic equipment and experience at his fingertips. This time though he was relying on his deployed AR flash cards which walked him through the procedure one step at a time.

But something was not right. She knew it within seconds. What had previously been passive symbology in her lens now started to flash more aggressively. Could the tiny data-burst from the re-setting have been enough to attract the enemy satellites?

They had to move. Now!

Their rally point was east of the FARP. It was now just a question of waiting for

extraction and avoiding detection. Their cloaks were surely all they needed, along with strict adherence to emcon zero.

She manipulated the imagery on the laptop screen and hit 'run'. A second later the results were in. Three options, none above 57 per cent confidence. She swore again, selecting option 1. The symbology in her lens re-organised and she saw her team was on the move.

The intercom cut in. "Okay, team, nice work.
Let's take 30 mins and regroup in debrief room 1."

As the simulator came off-line, Esme checked in with each member of her team. The improvement was obvious. The 'bio-score' told the story on its own. No-one above a 47.6. Impressive! She scanned her own data, noting that her heartrate was smoother than last time. The new training programme the unit had introduced seemed to be helping and her score for decision-making under stress correlated nicely.

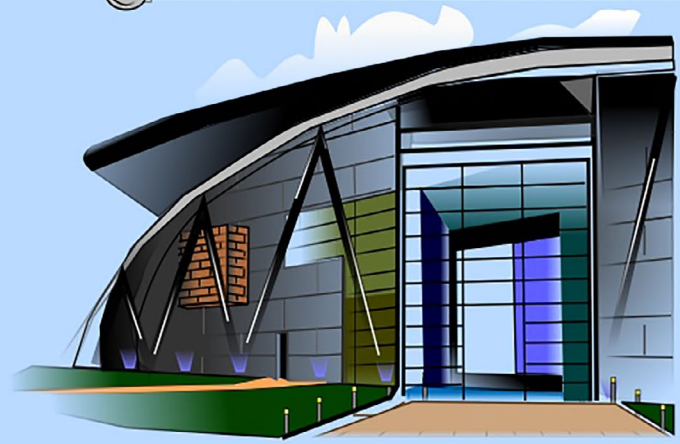
As she stepped into the corridor, Scotty caught her eye. An apology lay in his expression.

"Don't worry, Scotty," Esme said, "you did everything exactly as you were supposed to. We'll find out in the debrief what happened there. You were great."

Scotty's training bot had highlighted that he had missed this serial during his phase three training. The team had briefed the serial as part of their 'actions-on' before the mission. Despite the undesirable outcome, Scotty's actions were exactly what the procedure had required and resulted in a significant change to the tactics, techniques and procedures as a result.

- How much will simulation, augmented, and virtual reality become a part of future planning, training and operating?
- How will deployed locations and autonomous aircraft be supported by future logistic and engineering practices?

Which way next?



2r,4r,

CONCEPTUAL

Which Way Next?

My wrist flickers and pulses to inputs from my smartwatch, which now optimises my lifestyle. It even tells me when my blood sugar is low; in other words, 'time to eat'. It's Friday morning and I'm just logging my attendance to this week's Warrant Officer Augmented Reality breakfast which starts in ten minutes. You cannot beat an AR breakfast, a shortlisted attendance with our reverse mentors where they compile the list of talking points. Today's discussion is on *Which Way Next*, an upgraded defence digital programme.

It's a data programme which measures your mental and physical role performance, converging your leadership behavioural data, searching at gigabit speed for a promotion percentage for three ranks up. This promotion interface system wasn't around when I was a JNCO; since its introduction to the RAF in 2027, workforce demographics have improved enormously.

At the moment, my primary residence is in the north of Scotland; two miles from RAF Lossiemouth. I am a Master Warrant Officer, an intelligence professional. I work virtually, inside a secret information bubble. I relish my profession because every day is different. Our continuous global cat and mouse collection activity certainly keeps me busy. Air Force life has unquestionably fulfilled all my expectations.

My interest in the RAF was born from a lifelong friend called Fee, an ex-Defence Civil Servant. Now she's Squadron Leader Fee, a Swarming Drone Officer. Considering she was a RAF lateral entrant, the Service transformed Fee. She is physically fitter, faster and mentally so sharp. Talk of talent and untapped potential. There is nothing she does not know about trans-domain operations. Post-training, she went straight to the rank of Warrant Officer 2, and within 12 months she was fast tracked to the rank of Squadron Leader.

Today feels like a blur of acceleration. I fell out of the all-ranks Station Social Cellular Club at midnight. We were celebrating 122 years of the RAF, reminiscing about the life and times of the old Air Force. I will never grasp how pilots managed to fly, deter and defend without today's Defence Quantum Data Service. And whoever operationalised the RAF's Entrepreneur Apprentice Programme certainly fuelled the workforce's warfighting ideas into a reality. The literature of the Next Gen RAF unquestionably gave us the critical Air and Space Power technological edge.

There's a buzz in my AR glasses. It's my mentor, Senior Air Specialist Aki. The meeting is about to start. Aki is a model athlete, who certainly keeps me measured. She is a one-year Senior Air Medical Specialist and works in the Regional Operational Health Suite. I intentionally brace as the Station Executive Warrant

Officer joins the chat room and welcomes everyone. She sends a personal emoji to my AR glasses, supported by a live verbal compliment, referencing my organisation of the 2040 RAF celebration. I co-ordinated the Tempest flypast and an RPAS race over the sea. The Elgin schoolkids certainly enjoyed the competition.

While we are immersed in our AR conversation, an active operational alert broadcast overrides the Warrant Officer AR discussion. It's a five-minute operational update from DCom Ops, referencing the European Intervention Unit over the response to climate migration and the abiding security pressures across the Channel. This is the norm throughout the European summer. The heatwaves put pressure on London's water and energy reserves… thankfully, I live in Scotland!

- This article introduces new ranks and different career paths such as lateral entry which is currently used by only a few trades; is this a template for the entire service?
- Do senior positions that deal with strategic issues need to climb through the tactical ranks?
- How would the RAF pivot from its current structure into this flexible model?

Further Reading

While these stories are completely fictional, they are based on current or emergent themes. These themes have been expanded to create a future world where this is reality—hence "ficint" rather than science fiction. Here is a selection of references you may enjoy reading.

Army's Sci-Fi Infantry Goggles Change the Mechanics of Shooting, Soldiers Say
https://www.military.com/daily-news/2020/11/24/armys-sci-fi-infantry-goggles-change-mechanics-of-shooting-soldiers-say.html?ESRC=eb_201125.nl

Design concept of a high-altitude long endurance unmanned aerial vehicle
https://www.sciencedirect.com/science/article/abs/pii/S136988699900004X

Here's What the Future of Haptic Tech Looks (or Rather, Feels) Like
https://www.smithsonianmag.com/innovation/heres-what-futurehaptic-technology-looks-or-rather-feels-180971097/

Quantum 'compass' could allow navigation without relying on satellites
https://www.imperial.ac.uk/news/188973/quantum-compasscould-allow-navigation-without/

Synthetic Environments: The Next Generation of Military Training
https://defence.nridigital.com/global_defence_technology_special_nov18/synthetic_environments_the_next_generation_of_military_training

USAF Wants to Use Wearable Tech to Detect COVID-19 Cases Sooner
https://www.airforcemag.com/usaf-wants-to-use-wearable-tech-to-detect-covid-19-cases-sooner/

Welcome to the Age of AI-Based Super Assistants
https://www.wired.com/brandlab/2017/06/welcome-age-ai-based-super-assistants/

Contributors and Acknowledgements

This collaboration has been produced by a small group of people from across the RAF family. From civilian to AVM, the creative contribution has been immense.

Stories

Each of the stories has been produced individually, reflecting the author's own view of what 2040 might look like. The further reading section shows some of the inspiration upon which they have drawn for their story. Thank you to Eoin Sands, Ian Gale, Ed Whitechurch, Tom Carter, Matt Brown and Jake Alpert for your work.

Artwork

The artwork in this booklet is the work of Lee Tomas. Serving on the Astra Core team, Lee's creative effort to produce these pieces has been superb. His management of his wider team, including Chad Kenney, to hit a moving target has been much appreciated!

Editing and Compilation

Early drafts of this booklet were designed by Matt Brown and Jess Sands (who is the wife of one of our authors). Jess works as a graphic designer and runs a military spouses' network (https://milspo.co.uk), supporting the entrepreneurial work of all military partners. Numerous members of the RAF Media and Comms team have been involved in this project. Thanks to Mike Reader for his tolerance of the crazy ideas; also massive thanks to Richard Monk, Tony Durrant and Tony Jones whose professional skills in editing and creating the booklet were vital.

Feedback

Several people have provided feedback during this process. Vikki MacBrayne, Richard Brooks, Suzanne Mitchell, the team at Swanwick, and the members of the Reed's School CCF deserve special mention for their help with constructive feedback along the way. Thomas Jenkins and Nicholas Matheson have also been invaluable for the advice they have offered. Many thanks to everyone!

Produced by Air Media Centre, HQ Air Command.