

# Resilience

Journal of the Emergency Planning Society

Spring 2024

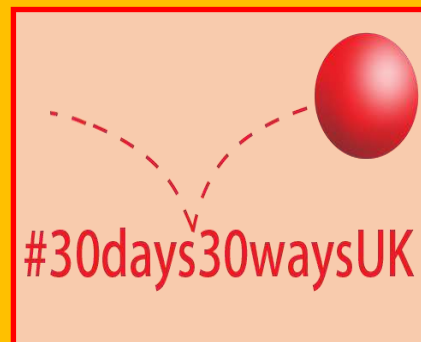


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### The Plymouth UXB major incident

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PHOTO: Devon and Somerset Fire & Rescue Service

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## Resilience

Spring 2024

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## memo

WELCOME to our Spring 2024 edition of *Resilience*, which you will find packed full of informative content and thought provoking commentary.

Firstly, it is with great sadness that we share the news of the passing of Philip West, an active supportive member of the EPS and chair of the South West branch and Southern Branch. He will be sorely missed as a friend and a colleague (see page 4).

The first quarter of 2024 has again been a busy one for the EPS, with a variety of different events including live seminars and virtual meetings and webinars, consultations, research, contributions to policy development and invites to join advisory boards.

Good news - our Huddles are back! We launched our first huddle in 12 months in April, with an energizing discussion hosted by Barry and featuring John Scardena, entitled *Innovation Emergency Management Outreach*. John is interested in continuing to engage with the EPS so watch this space.

The next Huddle is on **22 May** at 19:00, featuring Sophie Dusting, Senior Resilience Advisor at RAB Consultants, and is entitled *Experience and learning from lockdown in New Zealand* - please remember to sign up via the link in the members newsletter, or email directly to [info@the-eps.org](mailto:info@the-eps.org).

Once again, the EPS has been engaging with government and contributing to ongoing policy development. We were invited to attend the *Disability Action Plan Networking Reception Health* that celebrated the launch of the Disability Action Plan by Mims Davies MP, Minister for Disabled People. They are keen to continue a dialogue with us with the potential of working together in the future.

There are of course many routine activities which keep members and Directors busy, and Barry and Matt have continued to represent the EPS on the local authority building control course, while Nathan and I have been now representing the EPS on a new course for safe events.

We have also been invited to speak at the Major Projects Association 2024 conference, and currently in discussion with them as to how we could move forward to create a better relationship between the EPS and the Major Project Association and Major Projects Emergency Planning and Resilience. We hope that we will be able to develop joint learning and CPD opportunities for both organisations.

#### Webinars

Our Comms PWG hosted the first webinar of 2024 with a session on *Artificial Intelligence* (see page 7).

This was followed by a series of webinars hosted by our CBRNe PWG on:

- *Approach to UK CBRN risk and response.*
- *'21st Century CBRN Boy' Trends & gaps in international counter-CBRN development*
- *Effective humanitarian assistance - how is it delivered to victims of a CBRN event?*

HAG&CR PWG are planning to host two 'Coffee and

- **By Stephen Arundell,  
Vice Chair & Director of  
Governance**



Conversation' sessions entitled *The Big Conversation*" on Wednesday **5 June** 12.15-13.15, and Thursday **4 July** 12.15-13.15. This will be followed by workshops at the annual conference and a spring conference in 2025.

Meanwhile, the newly appointed 30Days30WaysUK PWG is up and running (see page 11).

This edition also includes the full version of an article the EPS Interim Chair, Jeannie Barr, published in the *Crisis Response Journal*.

#### Surveys

Across the UK branches have been contacting members with either a survey or questionnaire asking members what they want from their local branch - we would appreciate if you could take some of your busy time to provide feedback. Our local committees work hard to support local members, and we need to support them.

An example of this was the recent joint event organised the by London Initiative Group and South East Branch, kindly hosted by the London Fire Brigade, with speakers from the Met Office and the UKHSA.

Looking ahead, please note these dates:

- **Emergency Services Show 18 - 19 September**, NEC Birmingham
- **International Security Expo 24 - 25 September**, London Olympia

if you would like to support the EPS on our stands, please step forward and send an email to [info@the-eps.org](mailto:info@the-eps.org) to get on the list!

There will also be opportunities for members to present in the workshops. If you are interested in speaking, get in touch - sooner rather than later, so we can start putting a programme proposal together.

The Board as you know is a small and hard-working group of members, and by the time you read this, the invite to apply to become a Director on the Board will be out. If you have not yet applied or have questions about becoming a Director, please do reach out to me directly for an informal conversation:

[director.sa@the-eps.org](mailto:director.sa@the-eps.org).

And finally, two items of governance; I am pleased to announce the dates for:

- **AGM 2024** will be held virtually on **26 September**
- **Annual Conference** - likely to be the **first week in November 2024**: we are working on the final details and location of this important in-person event, which will be announced via the members update email, please look out for this.

That just leaves me to say enjoy our Spring Edition of *Resilience*.

# Philip West

THE EPS has been shocked and saddened by the sudden death of Philip West, Chair of the South West EPS branch.

It is a particular tragedy as Philip had already earlier survived a near fatal accident, had recovered well from major injuries and had recently remarried.

Having already been an active member of the Branch Committee, Philip stepped up to be Chair of the South West Branch following the previous Chair, Ian Cameron, suffering a major stroke.

## Commitment

Fellow South West EPS member Bill Crocker said:

“His enthusiasm and commitment to do the job properly was plain to see and infectious. His organisational skills stood him in good stead, of course. And, when the need to support the adjoining Southern Branch to re-launch and reinvigorate itself, Philip didn't hesitate to offer to be caretaker Chair, until members in that area had come forward to take it on.

“In fact, as part of that work we held a very successful joint annual meeting at the RNLI Headquarters in Poole last year on the eve of the RNLI's 200th year celebrations.

“Philip told us of his family links to the organisation and the historic Salcombe Lifeboat disaster, as part of his welcome and introductions.”

Indeed, at the EPS conference last November, Philip won not only the Runners-up Award for the ‘Branch of the Year’ but also a personal ‘Unsung Hero’ Award – as the citation said: “Phil is new to the role of Chair, but has hit the ground running, organising different learning opportunities and taking on twinning arrangements with the next door branch.”

Philip began his early career by joining the

Merchant Navy, having trained as a Navigator.

He had many adventures. He met his first wife, Helen, while he was in the Merchant Navy and they sailed together for a while, with Philip third in command of the merchant vessels as the Navigator.

They had many good and challenging times during this career, with one notable example being the Captain pulling into a port so that they could buy a bottle of sherry for Christmas, and into another port to buy a turkey.

After the Merchant Navy, Philip joined the police force, starting as a Constable on patrol in Bristol and eventually worked his way up to Inspector in the training division, specialising in public order and riot training.

He was also a trained hostage negotiator and trained both Silver and Gold command in major incidents, and was sometimes an advisor to them during actual major incidents.

## Consultancy

After his career with the police, Philip founded the *Continuity West* consultancy, as well as a challenging period with the Royal Borough of Kensington and Chelsea, assisting with their post-Grenfell emergency plans. At the time of his death he was working on a contract with the National Blood Service.

His funeral service was held in March at Bristol Cathedral. He will be sadly missed. Our condolences go to his wife and his two sons from his previous marriage, Richard and Michael.



■ Phil receiving his Award at last year's EPS National Conference

“ In his new role of Chair of the South West branch, Phil hit the ground running, organising different learning opportunities and taking on twinning arrangements with the next door branch ”

# Carol McCall

THE resilience sector has been saddened by the untimely death of Carol McCall, who many of us will have worked for or with during major crises over the past two decades.

Carol, originally from Aberdeen, joined the Cabinet Office as Head of Security, Intelligence and Resilience Communications, and Head of Civil Contingency Communications, in 2002.

Because of her unstinting record, she was awarded the OBE. In

2022, given her role with the Bridges Secretariat and the planning for the State Funeral of Queen Elizabeth II, she was made a Lieutenant of the Royal Victorian Order (LVO), in the King Charles Demise Honours List.

Carol, aged 61, had retired and was looking forward to time on her allotment at her home in Sevenoaks. Sadly, she passed away at Tunbridge Wells Hospital on Sunday 3rd March.

Many of her former colleagues have posted tributes, and perhaps this one best sums Carol up: “She was so kind, honest and generous. No ego, just a genuine person. I found her trustworthy, and in a space where people aren't always practicing integrity, she really stood out.”

# UNDER PRESSURE



**By Jeannie Barr**  
Interim Chair, EPS

*A shortened version of this article also appears in the Crisis Response Journal*

## Dealing with more, while coping with less

**PRESSURE and reliance on resilience and crisis management professionals has never been higher. But with fewer resources, strained budgets and deteriorating physical and mental well-being, is the greatest crisis facing resilience professionals, being asked to do more and more of their vital work with less and less? Interim Chair of the Emergency Planning Society Jeannie Barr shares her thoughts on this important subject.**

At the very core of emergency planning, crisis and disaster management, and the resilience profession is being prepared for the worst. We live in a world that considers not only the on-going crisis or emergency raging around us, but what might be around the corner. The next pandemic or health crisis. The next conflict or full-on war. The next RAAC or cladding-related disaster. The next flood, fire or weather-related event. The next terror incident. We live in a world of risk, but actually the biggest crisis we face might, on the face of it, be far more 'mundane' but no less devastating. It might be lack of money, lack of people and lack of respect.

It's no secret that local authorities, public bodies and the country

**Will anyone listen to the need for the next change if the learning before has not been shared and integrated into the muscle memory of those responding and the organisation's culture?**

as a whole has been badly impacted by the cost of living crisis. Budgets are vastly reduced – but the risks we face as individuals, as communities and as a country are no less real or essential to plan for.

To anticipate, prepare, respond and recover from an emergency, and do so effectively we need several things. We need robust preparation including flexible plans, training, and exercising, effective organisational and multi-agency co-operation and collaboration arrangements, and the people with the experience and expertise to do all of this.

But we also need to be recognised as an integral part of organisational resilience and the 'whole-society' approach to resilience and heard from not just when things go wrong, but influencing policy before it goes wrong. We should be fully embedded in day to day operations and organisational learning.

As a profession we face a people-based potential crisis. With fewer roles, more work and decreasing budgets, is the role of emergency planner or resilience professional a desirable one? That's a question we face both in terms of attracting new 'blood' into resilience but also for experienced individuals – those we rely on so much and who hold so much of the knowledge, experience and expertise we need. Given the increased pressure, it's no surprise they are leaving the profession - and leaving behind them a massive gap to fill.

Another crisis we face as a profession (some would argue nationally as a country) is mental health and fatigue. The profession's mental health and well-being has undoubtedly been negatively impacted. Combined with exhaustion, physical well-being impact can't be far behind. How close is the profession to burn-out?

Crisis managers also face the challenge of continual evolution and change of models – but without organisations necessarily learning from what has gone before. If we are constantly in the cycle of change without learning – as well as it being exhausting (see the above point!) – how do we know the next change will make the difference that is needed? How do we know anyone will listen to the need for the next change if the learning before has not been shared and integrated into the muscle memory of those responding and the organisation culture?

When too much has happened, it is sometimes easier to re-invent something new, with a new team in place. Then you don't have to think about the mistakes made before or (*whisper it*) take responsibility or face being blamed for them.

In the wise words of our esteemed



### 'Under pressure' (continued)

Colleague, the late Eve Coles:

*"The psychology of the aviation industry is interesting, it is what is termed a High Reliability Organisation (HROs) like the nuclear industry or even the armed services. They are high risk industries that can't afford to make mistakes because if they do, it could lead to fatalities or serious injury".*

As such the culture of these industries have the following characteristics:

**Preoccupation with failure:** HROs treat anomalies as symptoms of a problem with the system. The latent organisational weaknesses that contribute to small errors can also contribute to larger problems, so errors are reported promptly so problems can be found and fixed.

**Reluctance to simplify interpretations:** HROs take deliberate steps to comprehensively understand the work environment as well as a specific situation. They are cognizant that the operating environment is very complex, so they look across system boundaries to determine the path of problems (where they started, where they may end up) and value a diversity of experience and opinions.

**Sensitivity to operations:** HROs are continuously sensitive to unexpected changed conditions. They monitor the systems' safety and security barriers and controls to ensure they remain in place and operate as intended. Situational awareness is extremely important to HROs. They listen to their workforce

**Perhaps the 'greatest crisis' the crisis manager faces is this – not being invited to the top table before, during and after a crisis hits. We need to be listened to - we are the ones who have planned, exercised and actually 'do the do'**



■ The late Eve Coles, who once wrote: 'High Reliability Organisations like the nuclear industry or even the armed services can't afford to make mistakes because if they do it could lead to fatalities or serious injury'.

so every voice counts.

**Commitment to resilience:** HROs develop the capability to detect, contain, and recover from errors. Errors will happen, but HROs are not paralyzed by them.

**Deference to expertise:** HROs follow typical communication hierarchy during routine operations but defer to the person with the expertise to solve the problem during upset conditions. During a crisis, decisions are made at the front line and authority migrates to the person who can solve the problem, regardless of their hierarchical rank.

And that's why they can learn and make changes. Are we working within a high risk environment in the broad sense of the term? The answer may be 'no' for many, but without someone implementing arrangements to respond to emergencies, would the cost to life be significantly higher? If we adopted the above principles would that make resilience and emergency planning more resilient?

The on-going COVID enquiry and Post Office scandal might be examples of those at the 'top of the heap' not learning or listening. Of keeping their heads down and hoping it won't happen again, or if it does, that it happens to someone else or that someone else can take the blame for it.

So perhaps the 'greatest crisis' the crisis manager faces is this – not being invited to the 'party' at all. We need to be at the table before, during and after a crisis hits. And we need to be listened to, respected and our experience and expertise acted on. We are the ones who have planned, exercised and actually do the 'do'.

Part of avoiding the crises that crisis managers face surely is organisations taking an honest approach to the challenges we face, acknowledging our complex roles, and helping us resource properly. Let's hope that happens before there's another national tragedy and or scandal. ■

■ The next crisis is always just around the corner



# A useful tool by your side - but give it context

# AI

THERE was a fascinating introduction to the possibilities of using Artificial Intelligence in the world of emergency planning and crisis communications, by **Philippe Borremans**, Vice President of the International Association of Risk and Crisis Communication, at a webinar organised by the EPS Communications Professional Working Party in February.

Phillipe's very first point was: "One thing I want to put immediately up front: it is not about using AI and then copy-pasting – that doesn't work. Humans are still needed!"

But he explained why AI is an important tool for emergency planners: "It is clear that AI can help us with that one single resource – it gives us something we never have enough of: time."

Referring to a plan he had produced with the aid of AI, he said: "You have seen the speed at which this thing has been written; without AI it would have taken me much, much longer."

"I am not an IT person, but I was able to do this in 30 minutes. I've got a little tool now sitting on my machine."

He explained that AI has been with us for some time: "AI is something that is not new. For many people it is like 'oh, where did this come from?' But if you look at it from a communications history cycle, it's been with us since the 1950s."

"The biggest thing that changed everything more than a year ago was the access to a rather powerful AI system called Open AI and ChatGPT, because we had a new interface. So that's why it all seems so new – the interface, a 'Chat Window' which many of you have already have experience with, so we can talk to the thing and chat with it and



it responds."

## Publicly available AI

Phillipe explained that everything he was producing in front of the audience was all done through publicly available AI. He produced emergency plans and scenarios, based on data entered an hour before the event: "Of course, it took preparation, it took building and training the system, but it

took me half an hour because I've got the experience of 25 years of crisis management, I've got documents I can feed it – once it's done, I've got this Assistant sitting next to me."

"I can interact with it by text, I can talk to it and in the time you have seen me now it has given me a first draft of a crisis simulation scenario. A speed and productivity gain that is so crucial in our field of work."

## Build the context

Phillipe stressed however, that to use an AI tool like ChatGPT, you must give it context. He said: "When you work with AI don't forget to build the environment, the context. And create the world in which you want the AI to respond to you. That's very crucial – it's not just going in there and saying 'oh, give me a plan'. No, give it a context as much as possible, so that the system understands where you want to go."

He said you *can* just ask for a plan without feeding in the environment you want. As ►



**Philippe Borremans** is Vice President of the International Association of Risk and Crisis Communication (IARCC) and former president of the International Public Relations Association.

He spent a decade at IBM and before that with a global PR firm where, as Philippe puts it, he 'cut his teeth in the Brussels

Bubble'.

Now based in Portugal, he has worked for the World Health Organization, European Union, and West African Union.

He is a global communications consultant, working for organisations in Morocco, Australia, the Philippines, West Africa, Central Asia, much of Western Europe and the Caribbean.

He is author of *Mastering Crisis Communication with ChatGPT; A Practical Guide*, which was published in February 2023.

## AI - a useful tool

(continued)

Phillipe put it: “You can at least get a framework out of it to then work from, rather than just stare at a blank piece of paper for several minutes.”

He added that even that basic plan produced by AI can have still have advantages. He outlined the first trial he ever did with a ChatGPT system, asking it for a communications plan:

“One of the things that I found really amazing was that you get a nice list of potential planning aspects, but also it already gave me an *internal* communications part to be developed. I can tell you how many crisis comms plans I have audited, where there was not a single word about internal communications! Yet we all know that the very first communications you do in a crisis is an internal one.

“I was amazed that ChatGPT took that into account which is crucial. So positive points there.”

### Building the scenario

Phillipe then took the audience through building a crisis communications scenario around rising waters in London and flood danger.

The rapid response of the system was impressive. He commented: “I’ve given it a context so it can now give me an overview of injects it *could* create, they all make sense in the context of the scenario I am developing here.”

But he warned: “I stress that the output is a draft – a human needs to look at it, double check it and work with it.”

Moving on to the communications aspect of the scenario he was creating, Phillippe said: “I want text written with empathy – yes, you can train ChatGPT or any other AI, to reflect your own tone of voice.

“You can even ask it to take into account different cultural aspects or language styles.”

### Practical on-site uses

Phillipe explained that a tool he used while working on actual projects around the

**When you work with AI you must build the environment, the context, create the world in which you want the AI to respond to you. Give it a context as much as possible, so that the system understands where you want to go**



■ The webinar addressed by Philippe organised by the EPS Communications PWG

world, was *PerplexityAI*, a tool trained for rapid research.

He said: “The audience segmentation that comes out of this tool is rather incredible. I was looking at forests in Cape Town, so very specific geographically – I get real deep insights. I’ve never been to Cape Town, but I now know there are different demographics in the area, it gives me latest updates as of 2021 – it gives you the references too so you can check them.

“I have now got real detailed audience insights I can use when I work in emergency planning or even when I’m ‘boots on the ground’ with my backpack, when I’m part of a rapid response team and I come into an area that I have no experience of.

“This gives me true, very viable information within seconds. It’s a real time saver.”

So that was Phillippe’s message – AI is a very useful tool that can save emergency planning practitioners that all important time. But as he repeatedly reiterated, use it as a basis only, to build upon it.

As he said: “Do I copy and paste it? No, never – I’m a professional.”

**The output created by AI must always be seen as a draft - humans are still needed! A human needs to look at it, double check it and work on it**

■ Phillippe explained that AI in one form or another has been with us since the 1950s





**Phillipe produces a regular newsletter called ‘Wag the Dog’, which looks at insights on risk and crisis communications within the evolving roles of technology and AI. It can be found at :**

[www.wagthedog.io](http://www.wagthedog.io)



# Giving ChatGPT a test drive - and seeing the dangers

By **Stuart Baird**  
Bakerbaird

ARNOLD Schwarzenegger’s most iconic film, *Terminator*, is 40 years old this year. Unchained artificial intelligence learns that humankind is the threat and decides to eradicate it.

While science fiction AI is not a threat, whole countries have been spooked not by machine learning but unwitting data leaks, privacy of sensitive information and if manipulated, very real security threats.

Italy for example introduced a complete ban on ChatGPT for a while in 2023 (now rescinded).

As a public sector communicator I wanted to experiment with ChatGPT - after all, if AI can write a press release in seconds, I’m redundant, right?

Well, that machine can’t learn emotion, nor come close to relying on 30 years of experience and in indeed 30 years of contacts and colleagues who know more than I do.

I started light. If you set up a ChatGPT account you can simply ask it a question and within seconds it comes up with answers. The first question was on behalf of my son, who was applying to study abroad – ‘what are the advantages of studying overseas?’

Ten seconds later, quite a thorough and compelling answer came through – not the finished article but at the very least a decent framework.

However, this is where it becomes sensitive. If I had put any personal information in there, my question and the re-

sulting answer would be totally open to the entire world – as well as if we put any corporate or commercially or security sensitive information into the system.

And once you have put it in there, it’s in there forever, and anyone can get at it and use to their own ends.

So, use it for your advantage but be aware of the risks.

Just to try the system, I asked ChatGPT the following question - can using AI expose emergency services to risks?

Here’s its reply:

‘Yes, AI can potentially expose risks to emergency services in various ways:

**Misinterpretation of Emergency Calls:**

AI systems used for processing emergency calls or messages may misinterpret or misunderstand the urgency or nature of the situation, leading to delayed or inappropriate responses.

**Data Security Breaches:** If AI systems used by emergency services are not adequately secured, they could be vulnerable to data breaches, exposing sensitive information about emergency situations, individuals in distress, or the operations of the emergency services themselves.

**Dependency on AI Systems:**

Over-reliance on AI systems without proper human oversight or backup mechanisms could lead to a breakdown in emergency response protocols if the AI systems fail or encounter unforeseen situations they are not equipped to handle.

**Bias in Decision-Making:**

AI algorithms used for resource allocation, dispatching, or decision-

making within emergency services may exhibit biases that result in unequal treatment or allocation of resources based on factors such as demographics or location.

**Inadequate Training Data:**

If the AI systems used by emergency services are trained on incomplete or biased data, they may not accurately represent the diversity of emergency situations and may struggle to respond effectively to novel or unexpected scenarios.

**Cyberattacks and Manipulation:**

AI systems used by emergency services could be vulnerable to cyberattacks or manipulation, leading to false alerts, tampering with response systems, or misinformation being disseminated to emergency responders.

To mitigate these risks, it's essential to implement robust security measures, ensure proper training and oversight of AI systems, regularly audit and update algorithms to address biases and adapt to evolving threats, and maintain ‘human-in-the-loop protocols’ to provide oversight and intervention when necessary.

Additionally, transparency and accountability in the use of AI within emergency services are crucial to building public trust and confidence in the systems.’

*Not a bad answer - I couldn't have put it better myself!*



Stuart Baird at last year’s EPS conference with Bakerbaird, being one of the exhibitors. The company provides consultants and trainers with backgrounds in journalism, public relations, public affairs and business.

## New Bill to look at AI ethics

A NEW Bill on the ethics and impacts of AI has been introduced to Parliament.

The Bill, titled *Use of Artificial Intelligence in Journalism*, was introduced on 21 February, is sponsored by the National Union of Journalists, and has the support so far of six MPs.

It raised the ethical issues around:

- use of AI within journalism being transparent;
- concerns on the undermining of democracy should public trust in journalism erode;
- compliance with laws regarding the intellectual property rights of authors.

# Public Sector ranked top for cyber attacks

**PlanB Consulting was a sponsor for the 2023 EPS National Conference. Here they explain their offer:**



ORGANISATIONS face challenges that threaten their ongoing operations on a daily basis; and they rely on the skills, expertise and experience of professionals to help them manage these challenges - professionals like PlanB Consulting.

PlanB Consulting, based in Glasgow city centre, is recognised for its expertise in Business Continuity, Crisis Management, and Cyber Incident Management. With a proven track record of guiding some of the world's largest and most complex organisations through crises and disaster and emergency response, PlanB Consulting demonstrates innovation and leadership in this field.

## Supporting the EPS

PlanB Consulting has been a supportive member of the Emergency Planning Society for several years and has worked with Emergency Planning Teams within many local councils and EPS members throughout the UK, helping and supporting them to build resilience through providing efficient and effective bespoke exercising and training.

PlanB Consulting carries out Incident Management Training to councils across the UK to ensure that good practice is maintained and a successful response to an incident can be achieved.

Despite the multifaceted nature of resilience and emergency planning, one trend stands out as a pervasive threat to organisations worldwide: cyber incidents.

From data breaches to ransomware attacks, every sector is vulnerable to cyber threats. A study by IT Governance highlighted the top five breached sectors globally as of March 2024, and the public sector was ranked top, emphasising the universal vulnerability to cyberattacks.

Notably, NHS Dumfries and Galloway were globally ranked 10th for

the largest data breach in March 2024, highlighting the significant impact such incidents can have on organisations, especially within the public sector. The repercussions of such incidents extend far beyond immediate financial losses, often tarnishing reputation.

While technical IT professionals excel in addressing the technical aspects of cyber incidents, the human element is equally crucial in a successful response.

Effective Cyber Incident Response Plans and staff training are key components of ensuring that stakeholders understand their roles and responsibilities during a cyber incident.

PlanB Consulting distinguishes itself by focusing on the non-technical facets of cybersecurity, particularly the human aspects surrounding cyber, including Cyber Incident Response Plans and effective training and exercising.

Resilience must extend beyond technical safeguards to encompass human behaviour and preparedness. PlanB Consulting has been certified as a NCSC Assured Cyber Incident Exercise provider. This accreditation validates PlanB Consulting's unwavering commitment to delivering high calibre, tailored Cyber Incident Exercising services that empower organisations to successfully manage incidents, maintain Business Continuity and protect their reputation.

## Workshops and exercises

We stand at the forefront of cybersecurity preparedness and offer tailored cyber exercises that go beyond the technical aspects, including tabletop simulations, SIMEX's (Simulated Exercises), Workshops, and/ or a combination of all three.

If you don't have a Cyber Response Plan, we can assist you in designing one that suits your unique requirements. Our exercises often include scenarios involving ransomware, placing your C-Suite in a challenging decision-making position. We want to ensure that you are prepared for a cyber crisis and know how to respond to a cyber-attack. It is not a matter of if, but when it will happen to you.

The landscape of organisational resilience is evolving, with challenges ranging from natural disasters to the growing threat of cyber incidents. PlanB Consulting, with its expertise in Business Continuity, Crisis Management, and Cyber Incident Management, stands as a beacon of innovation and leadership in addressing these challenges. By adhering to established guidelines and focusing on the human elements of cybersecurity, organisations can better prepare themselves to navigate crises and mitigate risks.

## How we help

**RECENTLY, we conducted a cyber exercise for B3Living, a Housing Association in the UK, to evaluate the proficiency of their Business Continuity Management Team in handling a ransomware attack.**

**The scenario simulated the unavailability of crucial IT systems and the compromise of customer data. We executed two exercises simultaneously to involve all members of the senior/ response team.**

**The exercise received positive feedback, and insights were documented in a comprehensive Post-Exercise Report delivered to B3Living, providing valuable lessons for enhancing their response strategies to cyber threats.**

[info@planbconsulting.com](mailto:info@planbconsulting.com)

Top 5 most breached sectors (by number of incidents)

	Sector	Incidents	
1	Public	129	24%
2	Healthcare	68	13%
3	Education	45	8%
4	IT services and software	41	8%
5	Manufacturing	37	7%

# Getting the UK prepared and ready for emergencies



By **Joanne Maddams**

Emergency Planning & Business Continuity Manager, West Northamptonshire Council & Co-Founder *30 Days 30 Ways UK*

Climate change and other factors are leading to more frequent and severe emergencies and disasters. Being prepared allows individuals and communities to adapt to changing conditions, anticipate future risks, and take proactive measures to mitigate their impact.

**30Days30WaysUK** is an annual national campaign in the United Kingdom aimed at promoting emergency preparedness and resilience among individuals, families, and communities.

The campaign takes place every September, coinciding with *National Preparedness Month* in the United States, and consists of

daily challenges, tips, and information shared, via social media platforms such as X and Facebook.

Excitedly, the campaign has now found a new home under the stewardship of the Emergency Planning Society. The involvement of the Emergency Planning Society will elevate the 30Days30WaysUK campaign, enhancing its impact, credibility, and sustainability in promoting emergency preparedness across the UK.

The primary goal of 30Days30WaysUK is to raise awareness about the importance of being prepared for emergencies and disasters of all kinds, including natural disasters, technological emergencies, public health crises, and other unforeseen events.

Each day of the campaign focuses on a different aspect of emergency preparedness, such as creating a family emergency plan, assembling an emergency

kit, learning basic First Aid skills, and staying informed during emergencies.

Participants in the campaign are encouraged to follow along with the daily challenges and activities, share their own preparedness efforts and experiences on social media using the hashtag #30Days30WaysUK, and engage with others in discussions about emergency preparedness and resilience.

By providing practical tips, advice, and resources, 30Days30WaysUK aims to empower individuals and communities to take proactive steps to prepare for emergencies, reduce risks, and enhance their ability to respond effectively in times of crisis.

The campaign emphasises the importance of preparedness as a shared responsibility and encourages collaboration among government agencies, emergency





# #30days30waysUK

(continued)

services, nonprofit organisations, businesses, and the public to build a more resilient society.

Overall, 30Days30WaysUK serves as a valuable educational initiative that helps raise awareness, foster community engagement, and promote a culture of preparedness across the United Kingdom.

Participating in initiatives like 30Days30WaysUK, which provide advice and best practices for preparedness in emergencies from the National Risk Register, offers numerous benefits for individuals and communities.

Here are several reasons why people should consider engaging in such activities:

### Increased Preparedness:

The programme equips participants with essential knowledge and skills to better prepare for emergencies. By following the advice and best practices shared by experts, individuals can develop proactive strategies to mitigate risks and respond effectively during crises.

### Empowerment:

Engaging in preparedness activities fosters a sense of empowerment among participants. Instead of feeling helpless in the face of emergencies, individuals gain confidence in

- The campaign can help society prepare for all eventualities



their ability to act and protect themselves, their families, and their communities.

### Risk Awareness:

Through educational content and practical tips, 30Days30WaysUK raises awareness about various hazards and risks that could affect communities. This knowledge enables individuals to recognise potential threats and take preventive measures to minimise their impact.

### Community Resilience:

By participating in a collective effort to enhance preparedness, individuals contribute to building resilience within their communities. Sharing information, resources, and support networks strengthens community bonds and enhances the capacity to withstand and recover from emergencies.

### Adaptability:

Preparedness initiatives like 30Days30WaysUK encourage individuals to adapt to changing circumstances and develop flexible response plans. As emergencies can take many forms, being adaptable and resourceful is essential for effectively managing different situations.

### Lifesaving Skills:

Learning basic first aid, emergency communication protocols, evacuation procedures, and other lifesaving skills can make a significant difference in emergencies. Participating in the program provides an opportunity to acquire and practice these essential skills.

### Peace of Mind:

Knowing that one is prepared for emergencies brings peace of mind. Instead of feeling



- Campaign involvement is a key way to build community resilience

anxious or overwhelmed during crises, individuals who have taken proactive steps to prepare themselves and their families can approach challenging situations with a greater sense of calm and confidence.

Overall, participating in programs like 30Days30WaysUK not only enhances individual preparedness but also contributes to building safer, more resilient communities capable of effectively responding to emergencies and disasters.

The campaign is also engaging with student EPS members and students from around the UK to break into the world of TikTok to appeal to more younger people, who are increasingly turning away from traditional sources of information. We will be offering students a free membership for the campaigns that stand out and attract the most views. ■

If you would like to know more or if you would like to be part of the PWG, get in touch, email:

[30Days30WaysUK@the-eps.org](mailto:30Days30WaysUK@the-eps.org)

*Swanwick NATS inquiry -*

# The DeViL was in the detail



THE UK Civil Aviation Authority has now published its interim report into the NATS air traffic control failure on 28 August 2023, which affected over 700,000 passengers.

The review into the incident was set up by the CAA following the incident, with an Independent Panel chaired by Jeff Halliwell, beginning its inquiry in October 2023. BOB WADE looks at its findings.

DEAUVILLE is an historic seaside resort on the northern coast of France. In the air traffic control sector, locations are selected as ‘waypoints’ to chart an aircraft’s flight path. Each location has a code – the waypoint code for Deauville is D V L.

Devil’s Lake is the largest natural body of water in North Dakota, USA. The waypoint code for this location is also D V L ... And so the problems began on 28 August.

## The cause

AIRLINES operating flights through designated airspaces have to file a flight plan with the relevant air traffic controllers. The UK is a participating nation state in the Integrated Initial Flight Plan Processing System, called IFPS, with other European states (known as Eurocontrol).

The National Air Traffic Services (NATS) operates two air traffic control centres in the UK. The main centre is at Swanwick in Hampshire, and the other in Prestwick in Ayrshire. NATS Swanwick controls 200,000 square miles of airspace over England and Wales, as well as the complex airspace above London.

The NATS flight planning system is known as NERL, and they use a software programme called FPRSA-R. In between IFPS and NERL’s software programme is the AMS-UK system, which distributes data from Eurocontrol to the participating national air traffic control services (sorry about all the abbreviations!).

On 28 August 2023, a Bank Holiday Monday in the UK, an aircraft operated by France Bee – Flight BF37 – took off from Los Angeles for Paris, with a flight path that would take it through US, Canadian, Oceanic, UK and finally French airspace.

It registered its flight plan with the IFPS, with appropriate waypoints identified. Waypoints of course can be added or amended by air traffic control, dependent on weather conditions, air traffic volumes, airport congestion etc – it is a moveable feast, particularly for long haul flights.

Receiving the flight plan at Swanwick from the IFPS via the AMS-UK system for the UK and French leg of the journey, the FPRSA-R

system extracted data from it, and began the search for an exit waypoint from the UK into France.

It rejected the first two waypoints for various reasons, but accepted the third waypoint, which was Deauville, or waypoint DVL. DVL was already in Flight BF73’s flight plan – but for Devil’s Lake in North Dakota.

The CAA report states what happened next:

*“The FPRSA-R has now identified a flight whose exit point from UK airspace, referring back to the original flight plan, is considerably earlier than its entry point. Recognising this as being not credible, a critical exception error was generated, and the primary FPRSA-R system, as it is designed to do, disconnected itself from NAS and placed itself into maintenance mode to prevent the transfer of apparently corrupt flight data to the air traffic controllers.”*

In other words, ‘computer said no...’ No problem, NERL have a secondary FPRSA-R system for such an event, which recognised its primary system had disconnected itself from Swanwick, and immediately kicked in to take over. It went through the same process as the first, and then it too shut itself down for all the same reasons.

And now NATS had no automated flight processing system, and everything would have to be done manually by air traffic controllers.

All the above process took place within 20 seconds.

But the next major contributory factor to the incident were problems with NERL’s IT emergency management response plans.

NERL have three levels of engineers who can fix



■ The software failure resulted from two ‘waypoints’ having the same code

IT problems, and delays occurred as the Level 2 Engineer (it was a Bank Holiday) was not on site, but on roster working from home, and the engineer discovered a full system restart couldn’t be performed remotely. Equally, the NERL engineers had excellent knowledge of the FPRSA-R system, but not of the AMS-UK system.

Hence a delay of four hours to put everything right. The report outlines what happened - (please note: ‘Frequentis’ is the overall system designer with expertise in all systems involved):

*“Several factors made the identification and rectification of the failure more protracted than it might otherwise have been. These include:*

1. The Level 2 NERL engineer was rostered on-call and therefore was not available on site at the time of the failure. Having exhausted remote intervention options it took 1.5 hours for the individual to arrive on-site in order to perform the necessary full system restart which was not permitted remotely.

2. The engineering team followed escalation protocols which resulted in the assistance of the Level 3 NERL engineer not being sought for more than three hours after the initial failure.

3. The Level 3 NERL engineer was unfamiliar with the fault message recorded in the FPRSA-R log.

4. Adherence to escalation protocols meant that the assistance of Frequentis was not sought for more than four hours after the initial failure despite their having a unique level of knowledge of the AMS-UK and FPRSA-R interoperability.”

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**The failure of the primary software system, and the subsequent failure of the secondary back-up system, all happened in 20 seconds**

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# The impact

THE FPRSA-R system can process 800 flight plans per hour. Processing flight plans manually, as the Swanwick operators now had to do, can only achieve 60 flight plans per hour. Hence the sudden massive 'backing up' of air traffic.

A further problem identified by the enquiry was that information on the system was only stored for a four hour period, leading to much re-inputting.

It is estimated that over 700,000 passengers were impacted, including 300,000 people by cancellations, 95,000 by long delays of over three hours, and a further 300,000 by shorter delays.



## Report: 'more emergency planning, more exercising and one Incident Manager needed'

THE report says that the incident was exacerbated by three main failings – lessons had not been adequately learned from previous incidents; such scenarios should have been exercised and prepared for; and there should have been one overall Incident Manager.

On the first point, the report says: "... some findings that remain relevant today, arising from previous incidents, such as the major NERL outage on 12 December 2014 and recommendations in the CAP1515 report, do not seem to have been progressed. Examples include advancing regulatory and structural reform as well as formalising resilience issues through licence changes.

"... fundamentally it is clear there is a significant lack of pre-planning and co-ordination for major events and incidents that targets the alleviation and remediation of major incidents above and beyond normal operating variances."

The report points to the Industry Resilience Group (IRG), which was formed in 2018 and included airports, airlines, air traffic control and regulators. The IRG was established to ensure the activities and changes identified by the earlier 'Voluntary Industry Resilience Group' were delivered, which were to "support a systemised approach to the way in which the UK's aviation network is planned and operated to enhance its day-to-day operating resilience,

reduce delays and the associated costs to both industry and passengers".

The CAA inquiry panel clearly felt this had not been achieved by the IRG, although said the panel "has yet to reach a conclusion on whether it considers resilience planning should be mandated through licensing or statutory provisions. However, in a similar way to regulators in other sectors, the CAA should have a strong part to play in any improved future model to ensure that stakeholders have a strong regulatory collaboration and co-ordinating reference point."

The report accepts that the complex issues involving the software failings may not have been foreseen.

But it makes the point that "... it is possible that a different set of factors could create a similar scenario and without improvements to resilience planning the impact could also be significant.

"In its final report the Panel will make recommendations on how all aspects of risk planning (including safety, efficiency and consumer impact) could be addressed to provide for a more comprehensive framework of resilience preparation."

The report also concludes that NERL should have one overall person in command when such a crisis hits, rather than groups of managers.

It says: "The joint decision-making model used by NERL for incident management

■ The CAA report can be found at [www.caa.co.uk/our-work/publications/documents/content/cap2981/](http://www.caa.co.uk/our-work/publications/documents/content/cap2981/)

meant there was no single post-holder with accountability for overall management of the incident, such as a senior Incident Manager." ■



■ Grounded - over 700,000 travellers were affected by the software outage

# Plymouth UXB: a complex operation



PHOTO: Devon and Somerset Fire & Rescue Service

ON 20 February, a man in St Michael Avenue in the Keyham area of Plymouth was digging out the foundations for an extension to his home. He hit a large object with a spade, but couldn't make out what the cylindrical obstruction was. A drainage pipe he was unaware of perhaps?

With weather closing in, and now an obstruction to sort out, he suspended work for the moment. After a week of foul weather, he returned to the project and to his shock the days of rain had washed away the mud and made it very clear what was lying beneath. He immediately phoned the police, who in turn rapidly began evacuating people – Operation Foster was underway.

DEBS BROOKER-EVANS of Plymouth City Council explains what happened





■ The Keyham area of Plymouth. The house circled shows where the 1,000 lb bomb was discovered. The compact residential area shows that had the bomb detonated there would have been catastrophic damage. Even a controlled explosion with mitigation measures still would have left many homes destroyed or damaged.

# DAY 1

**IN February 2024, Plymouth saw one of the largest UK peacetime evacuations when a World War II bomb was uncovered in the back garden of a property in the Keyham area of the city. While all local authorities regularly test emergency response arrangements, few have had to put plans into practice on such a large scale - so we want to share our experience.**

**A**s a coastal city with a rich Royal Navy heritage, we are used to unexploded bombs. We have a large naval base at Devonport, so when devices are found, the Navy bomb disposal team assist without too much drama. But on Tuesday 20 February,

**'Initially around 3,250 residents were evacuated. It became clear very quickly that people would not be able to return that night'**

when the 80-year-old bomb was found, they were concerned about the stability of the device and their ability to remove it safely, and called upon assistance from their Army colleagues.

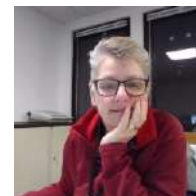
Following the declaration of a Major Incident on Tuesday 20 February, the Council's emergency response arrangements were activated. A multi-agency Strategic Coordinating Group (SCG) and Tactical Coordinating Group (TCG) was set-up that day, with supporting internal Gold and Silver arrangements.

Multi-agency cells were established to look at:

- vulnerabilities and evacuation
- volunteers
- communication
- rest centre arrangements
- logistics
- recovery

## By Debs Brooker-Evans

Debs Brooker-Evans is the Civil Protection Service Manager for Resilience and Emergency Management, at Plymouth City Council



Each had regular meetings, all reporting through the TCG and when necessary, up to the SCG for key decision making.

While the military swiftly put in a 214 metre cordon around the bomb, the Council and multi-agency partners helped source 350 tonnes of sand to pack the area around the device, and initially around 3,250 residents were evacuated.

It became clear very quickly that people would not be able to return that night.

Working with our partners, we set-up an assistance hub at a local community centre which offered both information and support.

The brief was for somewhere to keep people safe and provide a place for people to go (if they had nowhere else). ▶

## Day 1 *(continued)*

We then looked at overnight arrangements - most people could stay with friends and family, but lots could not, and we wanted to make sure that everyone had a proper bed for the night.

We set up a helpline and found hotel, bed and breakfast and Airbnb rooms for anyone who had nowhere to go and by midnight, everyone who approached the Council for accommodation support, had somewhere to stay.

In terms of needs, we wanted to understand which residents were known to us within the cordon - older and vulnerable people, those with disabilities or children we support, so we searched our records and contacted them to see if they needed help with accommodation, equipment or transport.

■ The bomb disposal team at work. The mitigation sand walls can be seen on each side of the bomb. However, it soon became clear that many houses would be destroyed or damaged if the bomb detonated, or a controlled explosion was carried out.



# DAY 2

WEDNESDAY 21 February brought worrying news as the bomb disposal experts informed us they did not think that they could safely detonate the device without catastrophic damage to at least four properties.

We appointed a Council Family Liaison Officer for the owners of the most impacted properties and along with the Military and Police, had some difficult but honest conversations with them. We needed to strike a

balance between compassion and practicality – how could we support those who could lose their homes?

We offered each of the four households a removal service and volunteers to empty their properties and put their furniture and personal belongings into storage; that way the damage would be to bricks and mortar only. To see so many volunteers work so hard to pack and box up personal possessions and remove them from the properties in such a short space of time was remarkable.

When it became clear the incident would not be over by Wednesday evening, we continued our offer of providing accommodation and this continued to be co-ordinated from the assistance hub. However, due to an extended 309 metre cordon and the expected increase in the number of residents needing support, it was decided that we would move our assistance hub overnight to a leisure facility and escalate it to a full blown Rest Centre, which opened at 7am on Thursday morning.

To do this, we closed the leisure facility to customers which in turn provided a larger, more central location to support those affected by the evacuation. The centre was staffed by Council and volunteer workers and the facilities at the centre included refreshments, prayer room, children's play area and a place where residents could get information and access our offer of providing alternative accommodation. ▶



■ The Rest Centre set up ready at the Life leisure centre.

# DAY 3

THURSDAY was a game changer. As the day progressed, further assessments of the device were undertaken and it appeared that the damage from a controlled detonation on site had been underestimated.

Rather than four houses being catastrophically damaged, the number was much larger, and we were told that nearly all properties within the cordon could suffer some form of damage.

Through the SCG, and with the support of our multi-agency partners, we pushed the experts to revisit their plans and come back with any other options. Following much consultation and head-scratching, at 11pm

on Thursday night the experts advised that they could move the bomb from its location out to sea, but they would need an extended cordon either side of the identified transportation route.

Overnight, council officers and key agencies worked solidly on a further evacuation plan and a time limited cordon was mapped. It was decided that anyone who lived within 309 metres of the route would be asked to leave their property for three hours between 2-5pm. This necessitated a total evacuation of over 4,000 properties and approximately 10,320 residents. ▶

## Debs says:

“ I am so proud of my colleagues, they worked tirelessly, with compassion and kindness to support the people of Keyham. They worked at pace, problem solving and most importantly, as part of a team. This response sums up the importance of local councils in an emergency and demonstrates the key roles and responsibilities that we undertake. The way we worked seamlessly with our multi-agency partners was fantastic and certainly demonstrated that planning and exercising together pays dividends when it comes to the real-time activation of arrangements. ”



■ Supplies stockpiled at the Rest Centre, and a children's play area ready for the thousand plus people who would use the facility

## Top facts from Plymouth UXB incident

Properties Evacuated	>4,200
People Evacuated	>10,300
Households Accommodated	180
Agencies Involved in Response	>32
People Who Attended Rest Centres Over 3 days	>1000
Calls Taken on the PCC 24/7 Helpline	>1000
Hits on the Emergency Online Hub Website	>73,000
Hits on the Evacuation Postcode Tracker	>3000
Sand Mitigation Acquired in Less Than 24 hrs	350 tonnes
Schools/Early Years Settings Evacuated	6
Volunteers Assisting with Door Knocking	>200

# DAY 4



■ Bomb disposal officers carefully winch out the 1000 lb bomb, ready for transportation to the sea



■ The military vehicle that would transport the bomb being readied with sand banks to help mitigate any explosion



■ The truck now ready for transportation

HAVING formulated our plans by 9am on Friday morning, they were presented to the TCG before going to the SCG for approval. By 11am the decision had been made and we were going to move the bomb and execute the evacuation plan.

A multifaceted communications plan was drawn up, to ensure communities were kept both informed and safe. As part of this plan, we devised a 'Postcode Checker' to enable residents to check, via the Council's website, whether their address was in the cordoned area.

One significant event was that for the first time we activated the Government Emergency Alert service 'in anger'.

We carried out media interviews, sent e-newsletters and social media posts and had over 200 volunteers knocking on doors, handing out factsheets and asking people to leave their homes by 2pm.

From 2pm, and every half hour after, the SCG checked the percentage of households cleared and by 4.30pm, every property within the cordon had been visited and relevant advice given.

However, there were approximately 130 properties which had people refusing to leave. With the police having no legal power to forcibly remove people, the SCG had to decide whether the operation to remove the bomb could proceed. *Legal advice was sought and if it could be demonstrated that those refusing to leave their homes understood the risks, we could go ahead as planned.*

The city held its breath while the 45-minute military operation took place. The device was carefully removed from the property and transported through the streets of the city by military convoy, with the Police following at a safe distance behind.

By 5.30pm, the bomb had been successfully transferred to sea and later that night, out past the Plymouth Sound Breakwater, it was safely detonated.

When the all-clear was given, communications once again went out – the cordon was lifted and roads reopened, enabling people to return home.

Although while most people could return to normal, for the four houses at the centre of military activities, the recovery journey had just begun. The back gardens of these houses resembled a building site and a huge amount of work was going to be needed to restore them back to some semblance of normal. Work to support these residents continues and we won't see our job as finished until this support is no longer required.





■ The bomb begins its journey to the sea through the deserted streets of Plymouth. In the top right hand corner a police road block can be seen to ensure the safety of the public.

# ‘What advice would we now give to others?’

WE WERE lucky, the bomb did not detonate, no one was hurt and all properties were left standing. But there are some takeaways for others who may be faced with a similar dilemma:

- Don't forget that you have emergency response plans – these should always be your starting point
- Bring your Tactical Co-ordinating Group together as early as possible and ideally face to face, rather than on 'Teams' or video conferencing
- Have a structured battle rhythm in place early, with dedicated admin support for each cell - going from meeting to meeting leaves no time for briefing
- Make sure you have a regular drumbeat for updating Elected Members and identify your 'talking head' for the media as soon as possible
- Have someone with a 'helicopter-view' of the whole incident and make sure everyone is clear who that is. It could be your Civil Protection lead but it needs to be someone who doesn't get bogged down dealing with issues. They need to be the conductor of the orchestra and ensure that everyone is playing the same tune
- Have your communications machine in place. Ensure communications get issued early and regularly, say something even if there isn't much to say. Communicate with your staff as well as your residents
- Remember staff wellbeing – many of our staff were personally impacted by the incident
- Stand back and take a breath. It is extremely easy to get carried away. Be considered and clear with every action and decision. Always think things through and don't forget to plan for the worst-case scenario, despite hoping for the best!

PHOTO: Devon and Somerset Fire & Rescue Service



# Fire Service: our involvement in the Plymouth unexploded bomb major incident

By **Wayne Rawlins**  
Area Manager for Response,  
Devon and Somerset Fire & Rescue Service

This article has been republished from the website of the Devon and Somerset Fire & Rescue Service, with their kind permission

I've been contemplating what was a very intense few days surrounding the events in Keyham - the biggest non-wartime evacuation in the UK.

The plan for dealing with the Second World War bomb changed from potentially detonating in situ, to moving to the sea for detonation. The residents will be eternally grateful with the outcome.

After the initial evacuation, the cordon needed to be extended once it became clear the type of bomb involved and that the military may need to explode the bomb.

This meant further evacuations. The residents of Keyham were amazing, leaving their homes for days, and overall supporting our efforts.

Although, understandably, there were some frustrations over the time - they were being asked to leave their homes - but mainly there was understanding and good spirit.

**'Mustering, organising and briefing the fire crews, military and police as well as volunteers - such as mountain rescue and coast-guard - and others, along with a clear tactical plan, logging who had been spoken too, who had left, who had stayed and why, was a challenge for the multi-agency teams'**

■ **Volunteers from all sectors went door to door to outline the evacuation plans and ensure public safety**



A great reflection on the community and people of Keyham who have been through so much of late.

Intense work on plotting those that couldn't or wouldn't leave, re-visits and pleas, and eventually we had a clear 150-metre cordon, but still some individuals within the wider 300-metre zone. Some mitigation measures were put in place using boarding up and sandbags.

Our fire crews were at the centre of all of it. Evening time Thursday, intense work by the military to build mitigation around the bomb. More deliveries of sand planned. Utilities ready to dig up the road to cut off gas mains in the immediate radius of the blast, water mains shut.

The plan came in overnight in the early hours of Friday, I received a call at 1.30 am, when the extent of the potential damage had been modelled, and further tests on the bomb had reduced the risk of moving the ordnance to 'tolerable', but clearly still not without risk and consequence.

Overnight, there was intense planning and preparation, before the plan was presented and signed off by the Strategic Co-ordination Group on Friday morning.

The signal to go came at about 10.30 am. We had three and a half hours to co-ordinate and evacuate more than 7,500 people in a 300-metre radius along the entire planned route of the bomb, with a planned lift and move time of 2pm.

Mustering, organising and briefing the fire crews, military and police as well as volunteers - such as mountain rescue and coast-guard - and others, along with a clear tactical plan, logging who had

been spoken too, who had left, who had stayed and why, was a challenge for the multi-agency teams.

Boots on the ground by just before midday, going door-to-door, warning and informing messaging through media outlets, and the first non-test use of the national emergency alerting system. The evacuation was further challenged by the people who couldn't move or wouldn't move.

There was intense activity in the multi-agency hub, with various planning cells working frantically. We had set a tight timeline with some margin as we knew the evacuation would be a challenge.

By 3pm we had evacuated over 80% of residents.

By 5pm, every resident had been spoken to, asked to evacuate and presented with the risks of staying, as well as receiving a letter making it clear they needed to evacuate

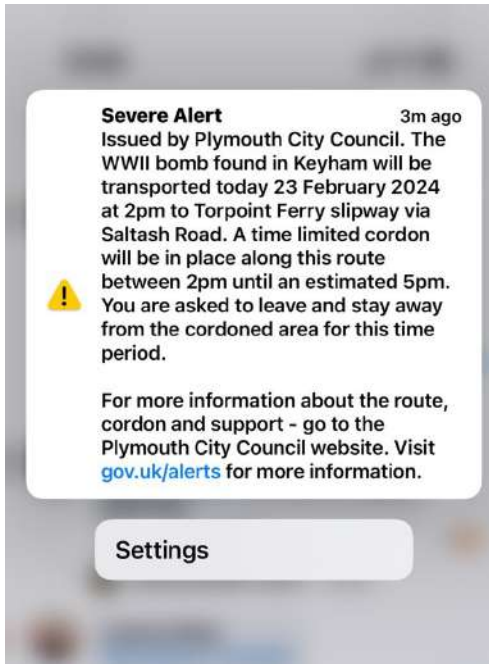
## Fire Service *(continued)*

or what the risks were if they didn't leave. We had used ours and partners' vulnerable people lists to evacuate those that were not mobile and couldn't move themselves. Or, where they couldn't be moved, created a place of relative safety within their homes. Rest centres were open. Life didn't stop for those affected, including a mother giving birth and acute care for the very sick. It all still went on. Schools, GP surgeries, care homes, all had been evacuated and rail lines closed. With about 130 people left in the 'can't move' or 'won't move' category, and inside the 300-metre cordon and with time fast approaching 5pm the decision was made - it's now or never.

The operation would be more challenging in the dark and there was a risk that residents might start returning to their homes if they were delayed further. Our operational crews were deployed at strategic locations ready to respond if needed.

We held our breaths watching the live drone feed as the military went about their business. Those very brave individuals who had worked night and day, put their lives on the line again for the greater good of others, professional and selfless. They lifted and moved the ordnance along the evacuated corridor to the sea where it was moved to a safe place by boat and destroyed.

It was an amazing effort by all involved, not least the residents who were remarkable in their stoicism. Many teams and organisations worked together: the local authority, the volunteers, police, coast-guard, ambulance, health, and our own fire crews, who also put together plans should the worst happen, as well as taking a very active part in the coordination and execution of the evacuation. The military were outstanding, and we should be very proud of



■ A significant event took place during the Plymouth UXB incident - the first use 'in anger' of the new Government Emergency Alert service

them. Almost 80 years after that bomb was dropped on the residents of Plymouth, no doubt on a night when many Plymouth residents lost their lives, this bomb laid dormant, but still deadly. There are many reasons why some bombs didn't explode but also many reasons why they can again become lethal. In 2010 in Germany, three bomb disposal experts were tragically killed when a second world war bomb detonated while they were trying to make it safe. Two others were killed in Salzburg in 2003. Others have lost their lives on construction sites as bombs have been exposed.

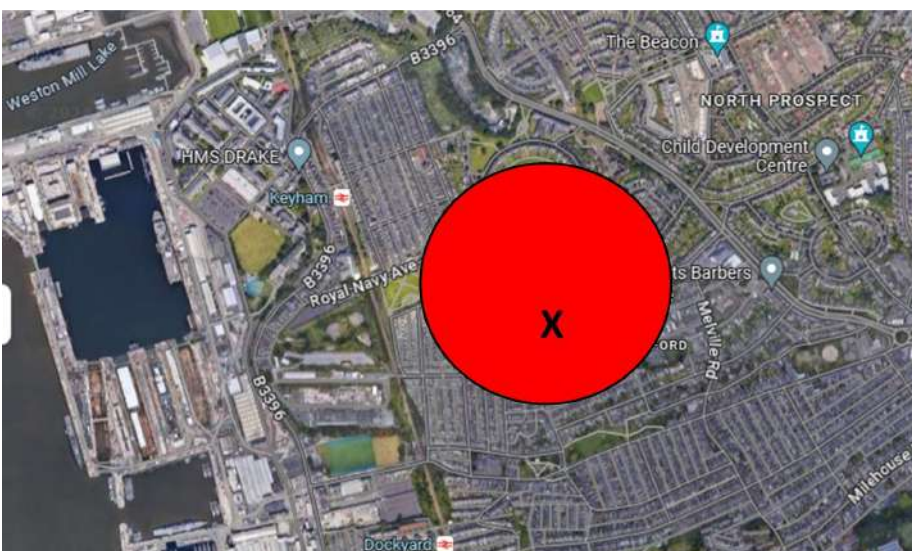
Thankfully, due to the professional multi agency teams and a few exceptional military individuals, we had a good outcome. No loss of life and all property saved. A job well done. Feeling very proud of our people and all of the teams involved. ■



**'The military were outstanding, and we should be very proud of them. Almost 80 years after that bomb was dropped on the residents of Plymouth, no doubt on a night when many Plymouth residents lost their lives, this bomb laid dormant, but still deadly'**

## The initial cordon

A SATELLITE view of Plymouth, with the initial 309 metre cordon shown, over the Keyham area. The X marks the site of the bomb, before the operation to transport the bomb to the sea, which involved widening the cordon. Throughout the incident, over 100 households could not or refused to evacuate. On taking legal advice, the view was that if the authorities had made clear to all the risks of remaining, the operation to mitigate the bomb could go ahead.



# The legacy of WWII - still with us after over 80 years

By the editor:

THE legacy of the Blitz can still bring chaos to the UK with alarming regularity. Of over one million bombs and incendiaries dropped by the Luftwaffe, one in 10 failed to explode – this failure rate was due to the rushed production methods necessitated by war-time, or blatant sabotage by the foreign workers enslaved by the Nazi regime and forced to work on munitions.

Studies of ariel surveys made by the RAF after the war and the maps created by insurance companies have found that there could be up to 21,000 sites throughout the UK where unexploded ordnance is likely to be found.

The cities with the highest number of suspect sites are London, Birmingham, Plymouth, Bristol and Manchester. Plymouth saw more than 50 heavy air raids during World War II.

Most of the devices were 'iron bombs', basic ordnance dropped from the sky, ranging between 50kg – 250kg in weight, half of which is the explosive charge, the other half the metal casing. The bomb in Plymouth however, the SC-500 type, was of the larger variety, weighing 500 kg (1,102 lb).

The same type of SC-500 bomb was disposed of by a controlled explosion off the coast of Guernsey last year, and the blast registered as the equivalent of a 2.7 magnitude earthquake.

The bombs, obviously, usually emerge during excavations on construction sites. The Construction Industry Research and Information Association (CIRIA) point out that between 2006-2008 alone, a staggering 15,000 devices were uncovered during building work, from large Luftwaffe bombs to small Home Guard hand grenades.

The ordnance was produced in the pre-digital age, so the methods to diffuse them are still basically the same as in World War II, save for a few additions that modern technology can provide such as remote 'stethoscopes', enhanced drills and better pumps. But, as in World War II, the basic vital tool is a very brave bomb disposal officer.

Making UXBs safe is called the Render Safe Process (RSP). One advantage of open, total



warfare on an industrial scale – as opposed to the asymmetric terrorism and hybrid warfare of today – is that there is no need for the assailant to hide their tracks in the mass production of weapons.

Hence, fuses can usually be identified rapidly through codes stamped on them during the mass production process – so long as that part of the bomb is visible of course.

Dependent on the type of bomb, 'Fuse Immunisation' as it is called, differs from bomb to bomb. Typically, it involves drilling into the fuse and introducing solutions that neutralise the fuse. For bombs that were dropped with a time-delay fuse (the Luftwaffe favoured periods of between two to 80 hours, to maximise chaos), the procedure can be to pump salt water into the fuse. It is then left there for a period of time, then expelled leaving behind salt crystals that clog up the works.

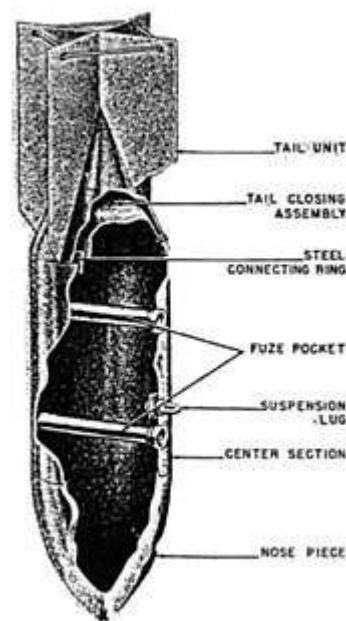
Once the fuse is neutralised, there are three basic methods of disposal:

- The ideal way (after the bomb is made safe) is to transport the ordnance to a remote area and detonate it.
- Another method is to drill a hole into the bomb and (carefully!) steam out the explosive.
- The third method is the least desirable to the public: detonation on site. Given the location of the Plymouth bomb, surrounded by residential houses, this was the least favourable option.

This can involve a huge mitigation operation (building sandbanks etc), but still threatens subsequent damage to nearby properties (and insurance headaches) that can bring widespread disruption – just as Hitler had originally planned.

■ Defiance - exhausted rescue workers in Plymouth during the Blitz hang a Union Jack from a lamppost. Plymouth, the important naval town, suffered more than 50 heavy air raids during World War II

Ariel surveys made by the RAF after the war and maps created by insurance companies, have found that there could be up to 21,000 sites throughout the UK where unexploded bombs are likely to be found



■ A training illustration of a SC-500 bomb





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