



AGILITY UNDER FIRE

WATU's playbook for modern cyber defence

How historical wartime innovation informs sovereign cyber resilience in 2025

Speakers



Andrea Van Unen-Smith

Chief Marketing Office,
Senetas



John Karabin

Chief Cyber Security Strategist,
McGrathNicol Advisory



Julian Fay

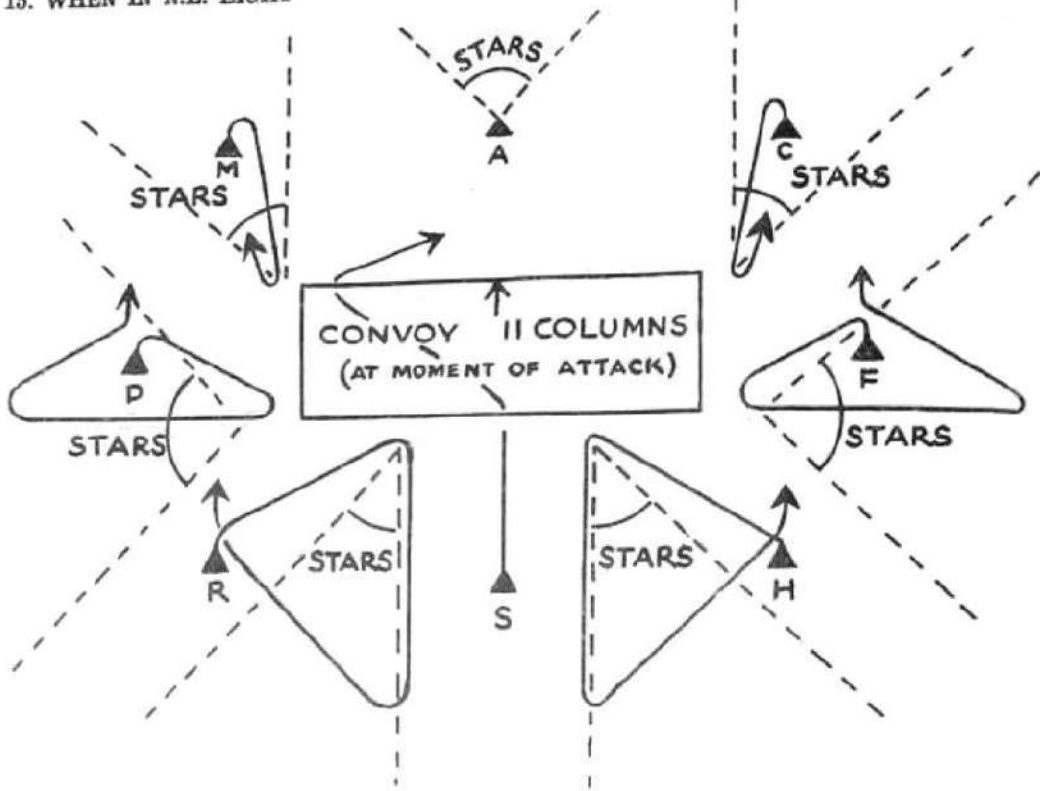
Chief Technology Office,
Senetas

What Do Raspberry, Artichoke & Pineapple Have in Common?

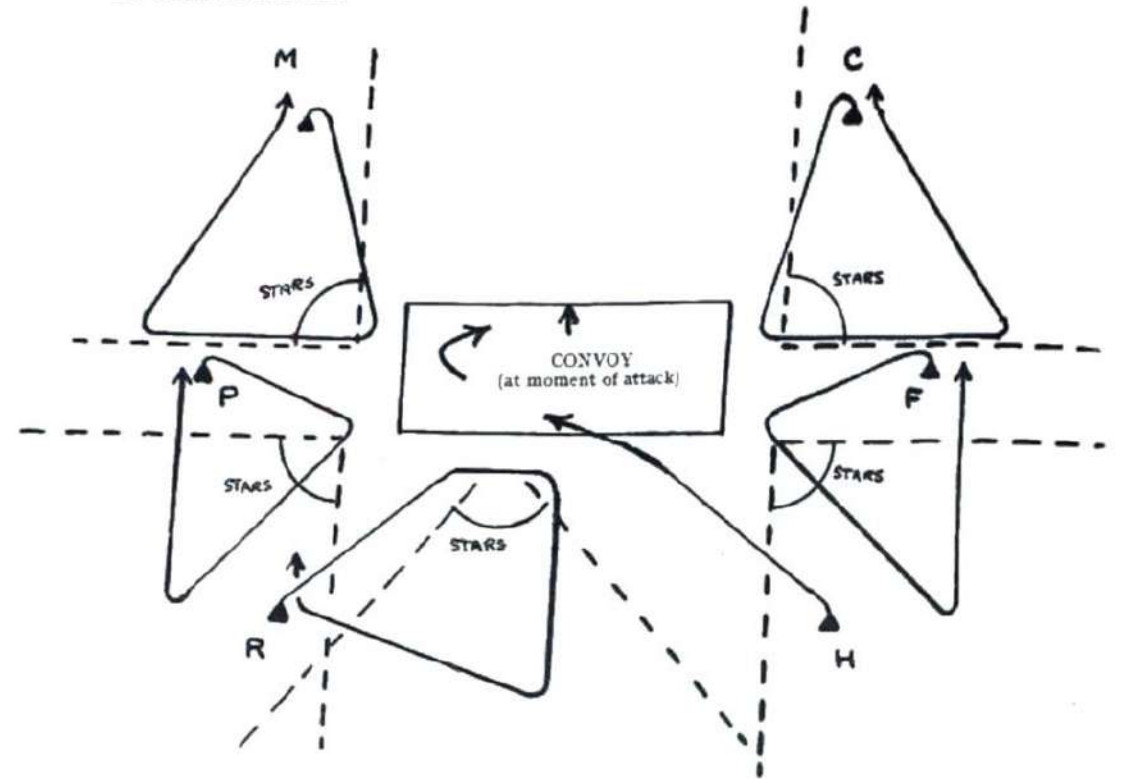


Tactics designed by the Royal Navy & WRENS

15. WHEN IN N.E. EIGHT



13. When in N.E. Six.—



Reference Wikipedia
British Royal Navy - Atlantic Convoy Instructions

Understanding context and vulnerabilities

THE SUPPLY CHAIN

- Over 68 million tons a year were shipped to Britain using the merchant navy
 - 95% of fuel was imported
 - 70% of food was imported
- If that drops below **27 million tons**, called the “Red Line” the country grinds to a halt - capitulation and defeat were inevitable.
- “The Battle of the Atlantic” ran from September 1939 to May 1945
 - The longest Campaign (war ended 2nd Sept 1945)
- Churchill was convinced the outcome of war rested on winning the Atlantic



Reference Wikipedia

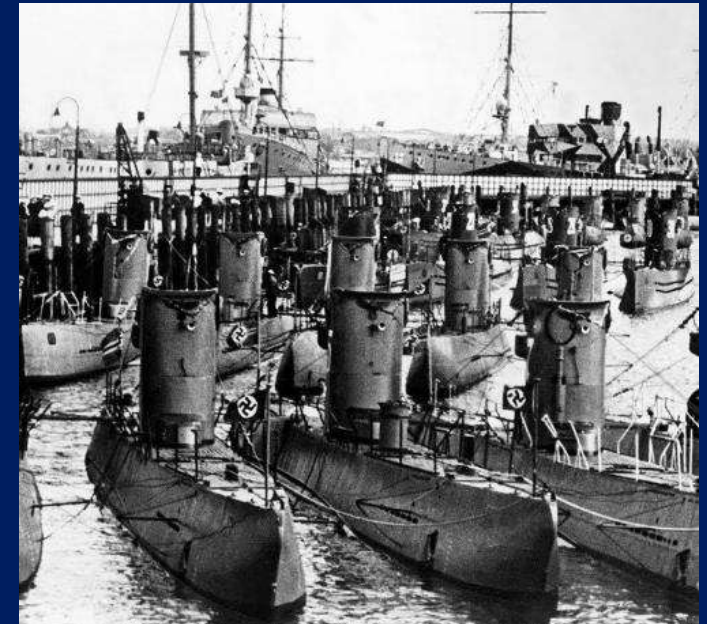
The rise of the 2nd generation submarine

THE GERMAN U-BOAT

- Karl Dönitz as Grand Admiral
“Befehlshaber der Unterseeboote”
- A commander of the submarine fleet in WW1
- Supreme commander of the U-Boat fleet in WW2
- Responsible for the Wolfpack tactic



Reference Wikipedia



A large, stylized blue opening quotation mark on the left side of the slide.

... the only thing that
ever really frightened me
during the war was the
U-boat peril.

- Winston Churchill

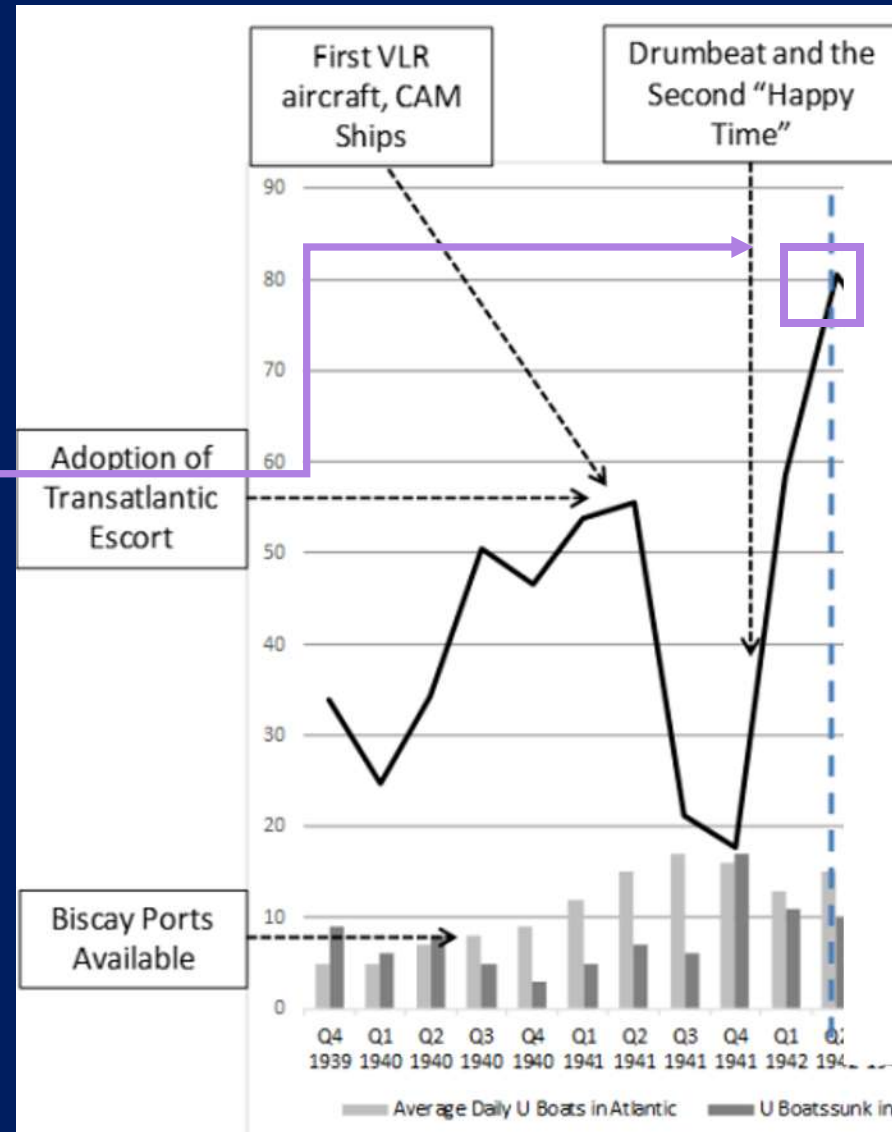
A large, stylized blue closing quotation mark on the right side of the slide.

Losses towards the redline

- Even state-of-the-art technologies such as radar, sonar, and signal intercept couldn't counter rapidly evolving U-boat tactics
- The supply to Britain was reduced to 27m tons
- Facing national collapse, Churchill ordered a radical rethink and instigated a strategic "wargaming" division run by retired Captain Gilbert Roberts



Reference Wikipedia





“

Find out what is
happening and sink
the U-boats!

- Winston Churchill



”

Western Approaches Tactical Unit – W.A.T.U.

- In early 1941, the Royal Navy created an experimental ‘tactical think-tank’ in Liverpool: the Western Approaches Tactical Unit (WATU)
- Staffed largely by young women from the WRNS — chosen for analytical ability, not naval rank
- Their outsider perspective proved decisive
- WATU was created because the Navy realised this wasn’t just a technological problem — it was a tactical one



Captain Gilbert Roberts, Jean Laidlaw and team at the WATU A Strategy division

Reference Wikipedia



Context, intelligence & tactical Insight

THE WATU METHOD

Simulation and Wargaming:

- **Fused diverse intelligence sources** to build a full picture of the threat landscape
- **Modelled enemy thinking and intent** not just their movements
- **Experimented with counter-tactics** in a safe but realistic environment
- **Created fast learning loops** enabling adaptation ahead of the adversary
- **Trained command teams under pressure** *“make your mistake here on the oil-cloth and you won’t make them at sea”* - Roberts

Operation Raspberry



Admiral Horton, beaten on the board by Janet Okell and Jean Laidlaw

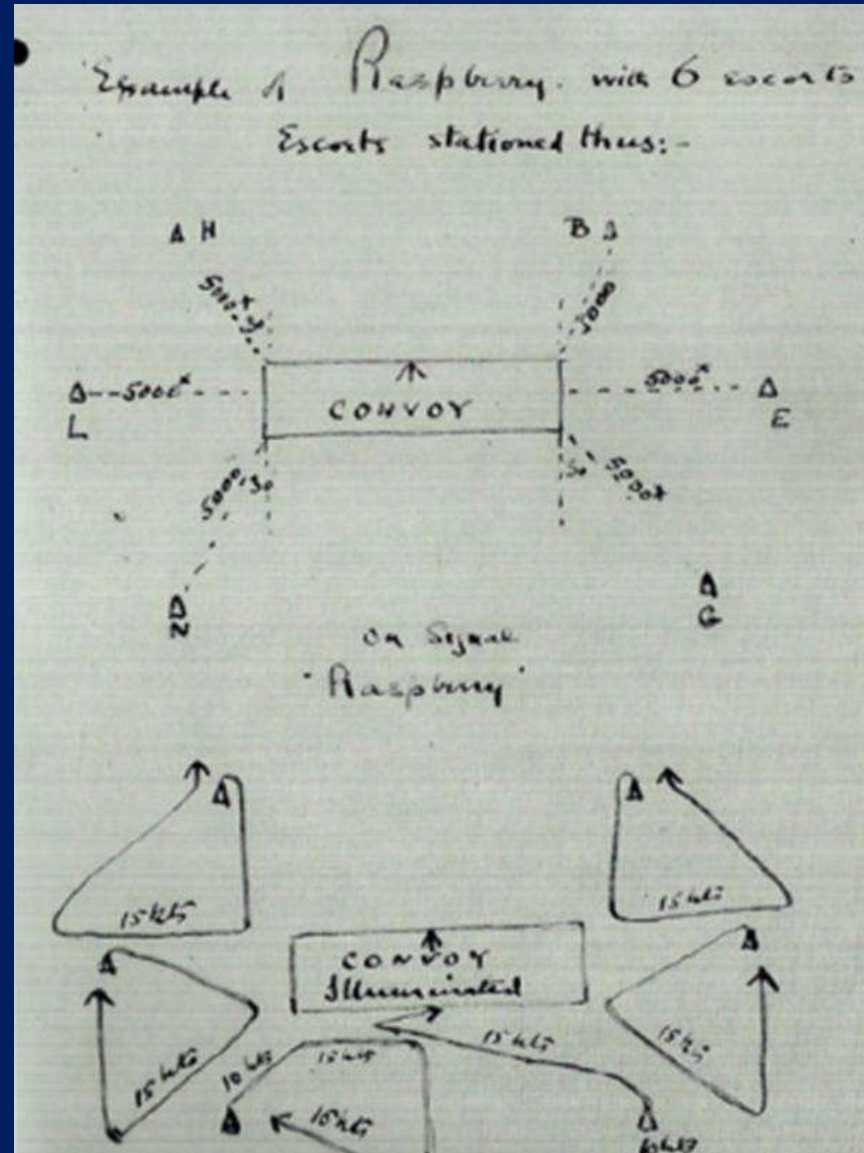
Reference Wikipedia

Operation Raspberry

WATU's first major anti-U-boat tactic to break the Wolfpack advantage

- By mid-1942, U-boat losses quadrupled in a single month
- For the first time in the war, the hunters became the hunted

A manoeuvre that forced U-boats to expose themselves to escort fire



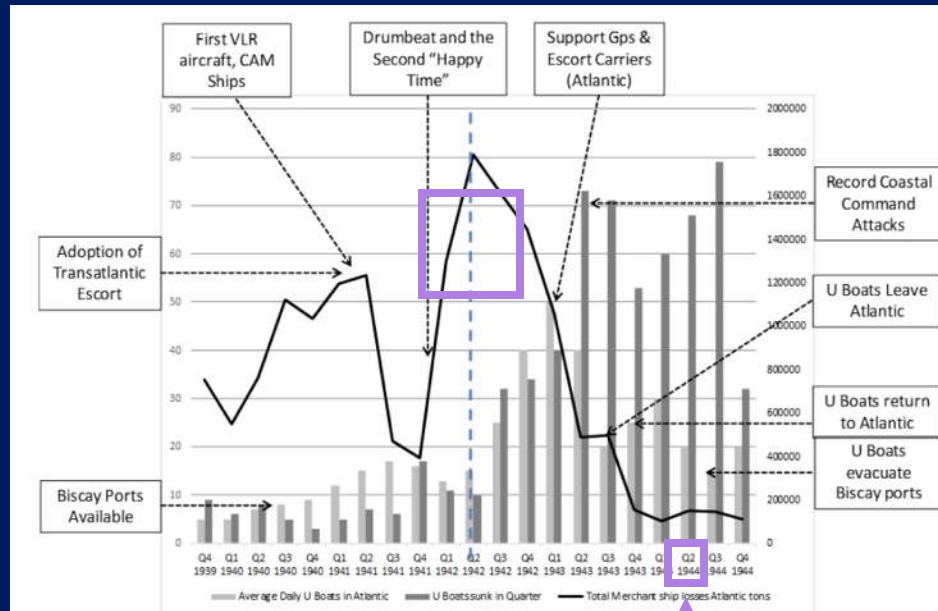
Reference IWM

Losses towards the redline

1942: The Turning Point
– When the Allies Regained Control

Success due to a balanced approach of:

- Technology
- Threat Intelligence
- Training
- Tactics
- Logistics
- Diversity



Reference Wikipedia

D-DAY

Complex threats require coordinated, multi-domain responses – not isolated solutions.

The Wolf & the Wire



The Wolf and the Wire

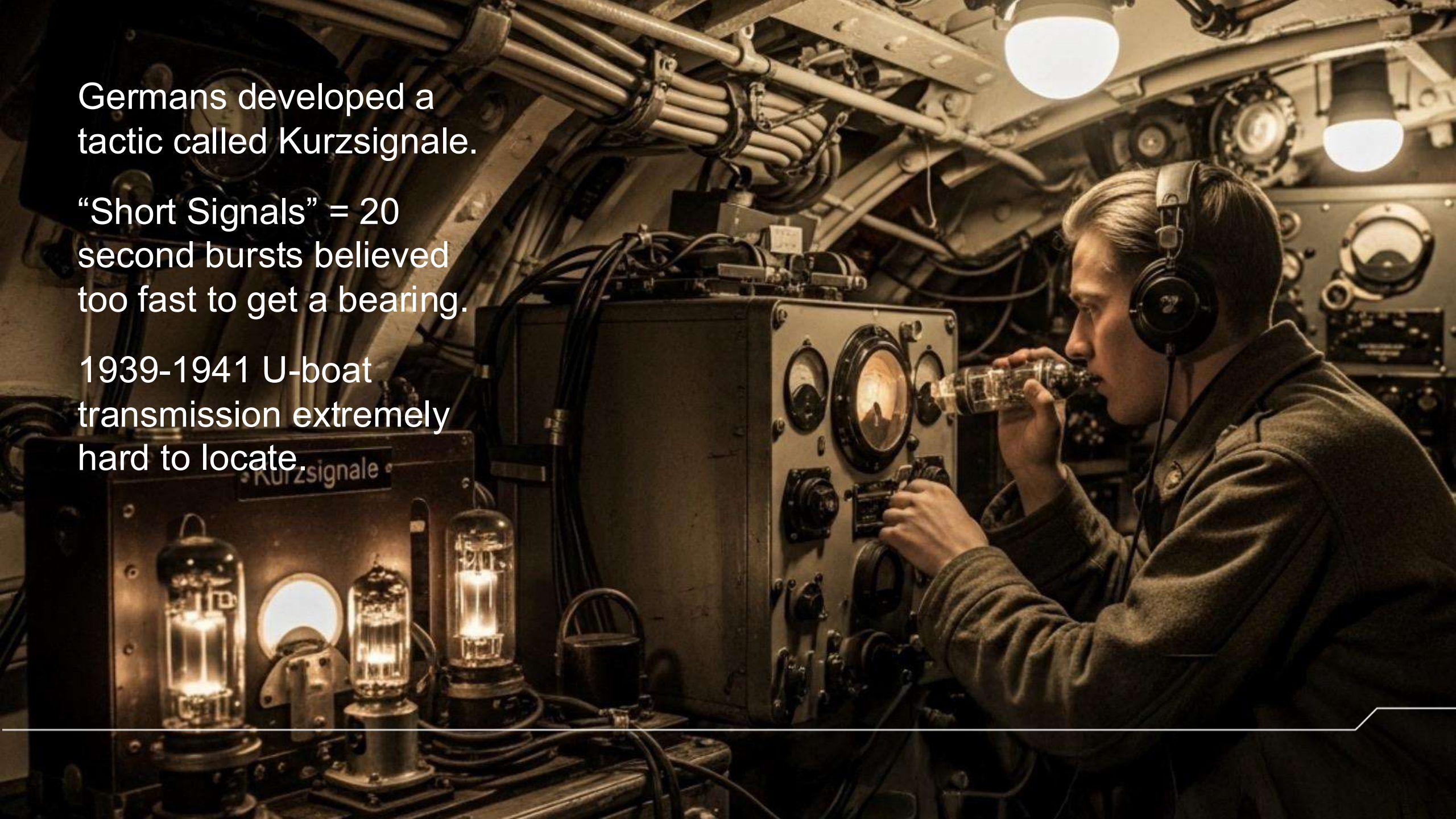
- Radio was the nervous system of the Wolfpack
 - Essential for coordination
 - But it exposed them
- Pre-war: Radio Direction Finding was a known technology
 - One bearing = direction, two = triangulation
- Standard DF technology required manual rotation of antenna
 - Bellini Tosi system
 - Operator listened for a signal and rotated coil
- Traditional direction finders took up to a minute to get a bearing — far too long



Germans developed a tactic called Kurzsignale.

“Short Signals” = 20 second bursts believed too fast to get a bearing.

1939-1941 U-boat transmission extremely hard to locate.



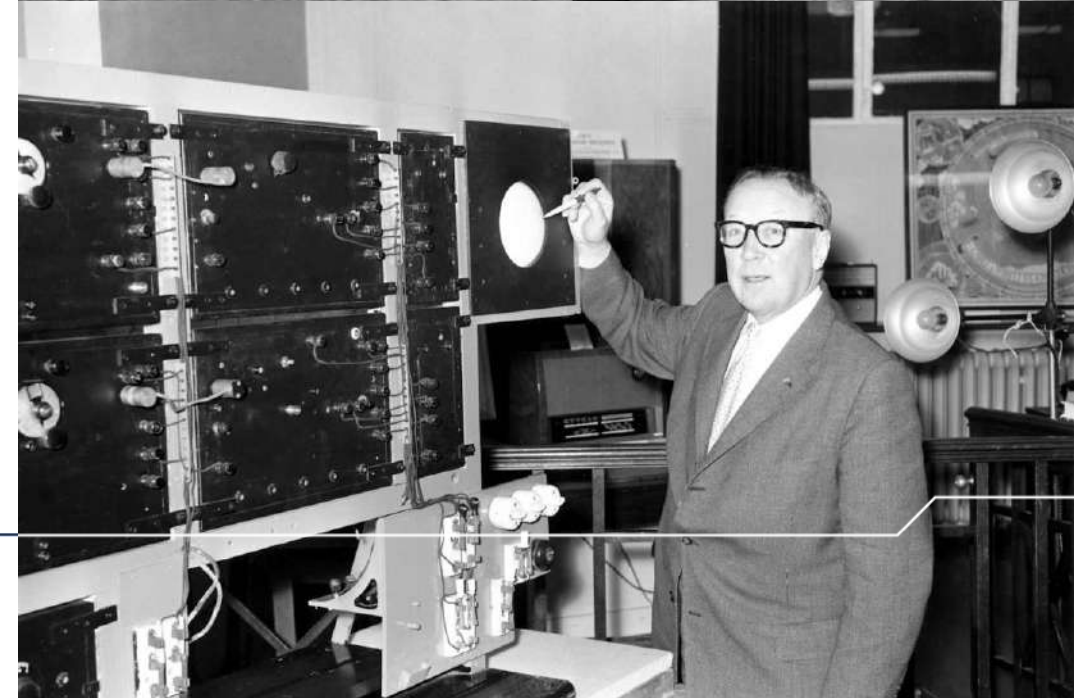
WATSON - WATT

The origin of instantaneous direction finding

- Scottish physicist **Robert Watson-Watt** began by trying to locate lightning using its radio noise (“sferics”).
- Lightning produces **very short, impulsive radio bursts**, making direction finding difficult.
- Watson-Watt realised you could determine direction **instantly** using two fixed antennas at right angles.
- This became the first example of **instantaneous direction finding** – no rotating coils required.
- The same principle later enabled **HF/DF (“Huff-Duff”)** to locate U-boats despite their short radio transmissions.



Source Wikipedia



HF/DF “Huff-Duff”

- **Instantaneous bearings** from very short U-boat transmissions.
- Hard to implement at sea due to **ship-structure interference**.
- **Wacław Struszyński** solved this with:
 - The **birdcage antenna**, **common-mode rejection**, and a **sense aerial** for clear, unambiguous bearings.
 - Enabled HF/DF on **convoy escorts** and in shore **DF networks**.
 - Formed the crucial first step in **FIND–FIX–FINISH**:
 - HF/DF → Sonar → Depth Charges.
 - Credited with **~24% of all U-boats sunk**; a key technology alongside code-breaking and radar



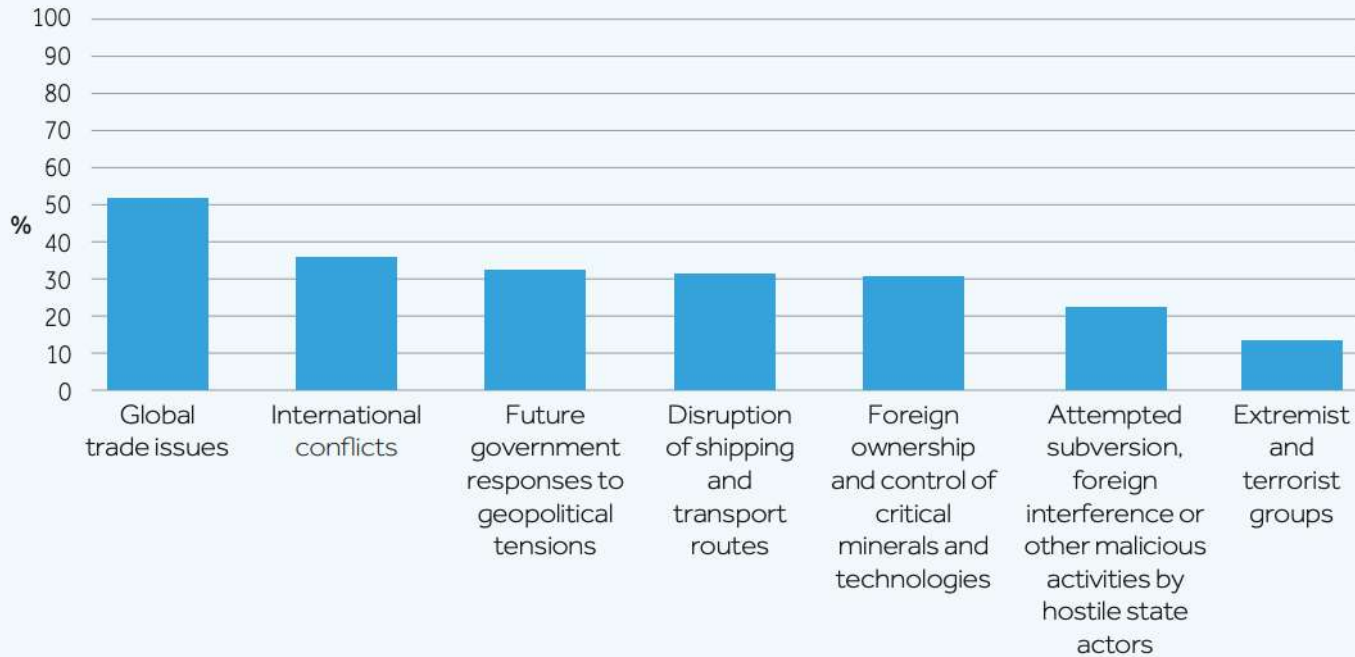
Modern Warfare

Supply Chains at Risk: The Geopolitical Threat



McGrathNicol

Which of the following will pose a challenge to your organisation and supply chain over the next 12 months?

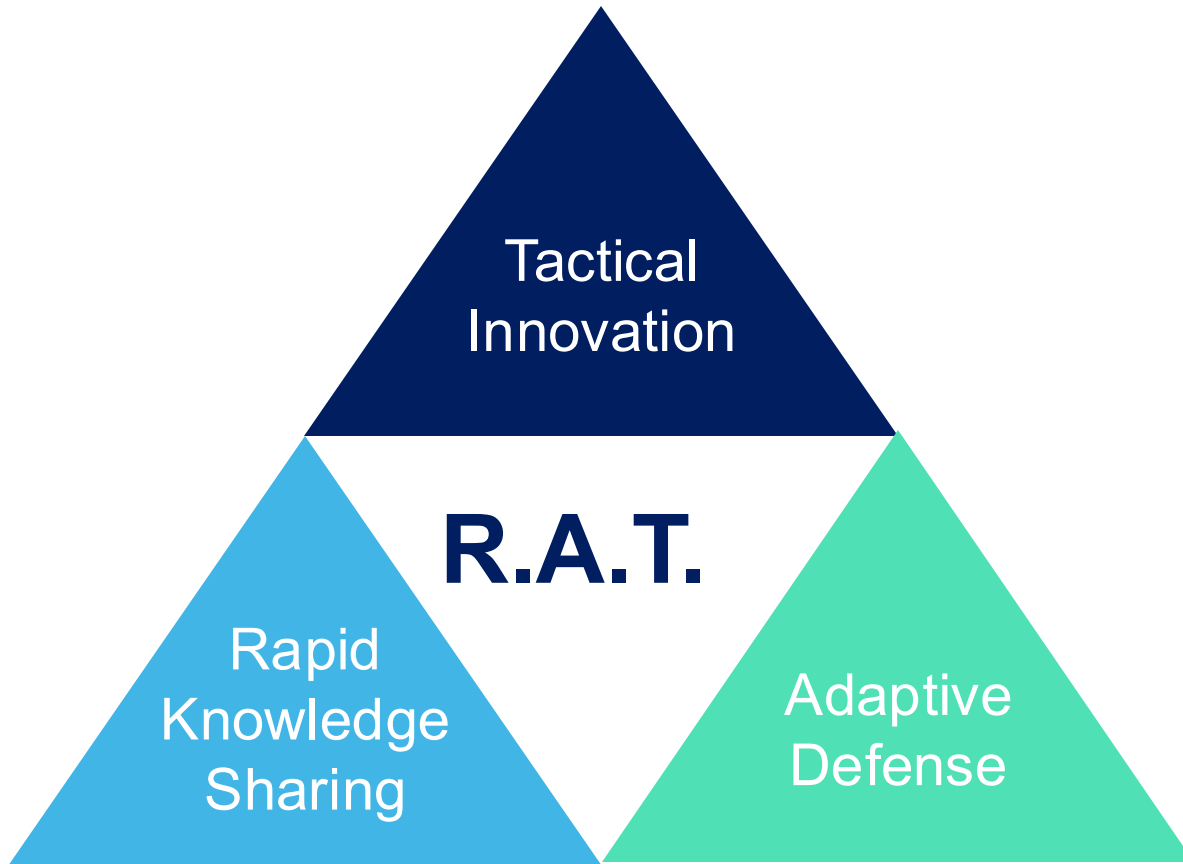


80% Business Leaders

believe geopolitical issues will pose a challenge to their organisation and supply chain over the next 12 months.

Source: McGrathNicol Risk & Security Report 2025

Lessons for Today



Rapid Knowledge Sharing

- Creative and Agile approach to counter evolving threats

Adaptive Defense

- Collaboration and speed disseminating threat intelligence & lessons learned

Tactical Innovation

- Resilience and Flexibility in security posture as environments and attack vectors change

Protection Level of Minimum Controls

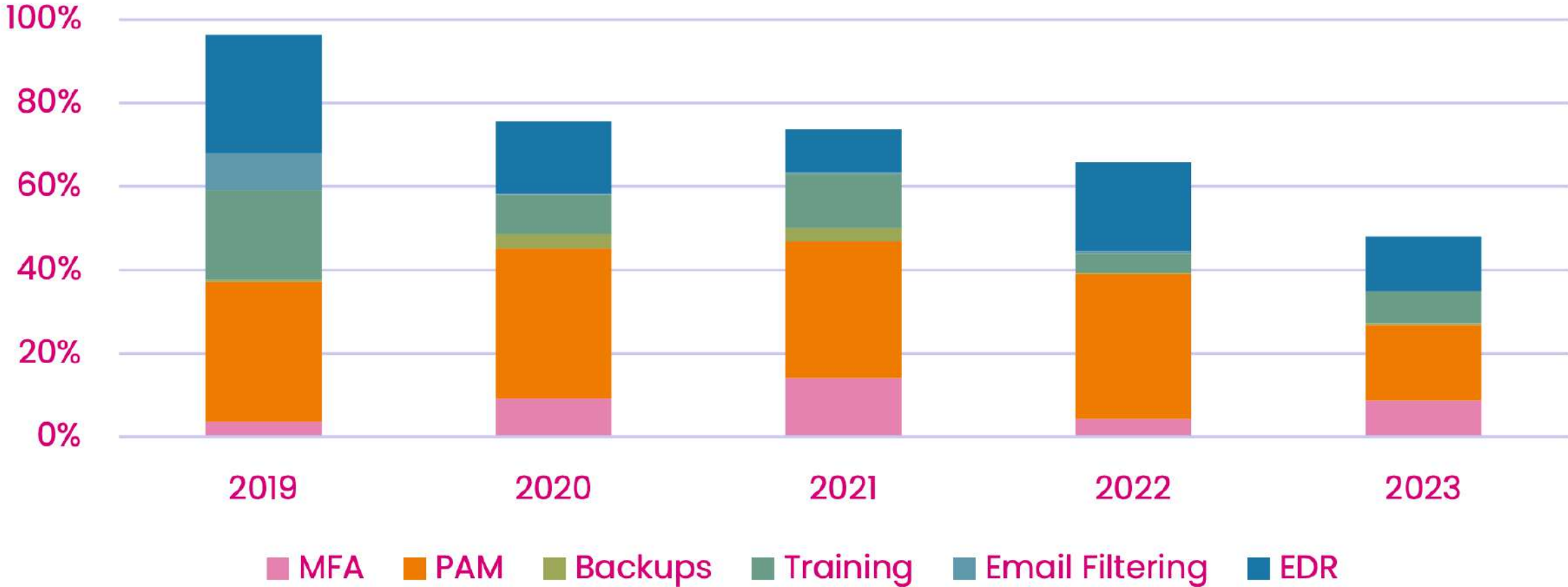


Figure 1: Protection Levels of Minimum Controls from 2019 through to 2023

Counter Shahed / Missile: Adaptation Spiral 2022-2025

2024

Average launches:
5-600 per week

Russians continue tactics adaptation: faster and higher attacks with more drones.

Dev of robotic 50 cal. Improved intercept rate. Mobile teams Gen 3.0

Intercept rate doubles but Shahed numbers per month increases

2025

Average launches:
~1300 per week and increasing

Russian adaptation: faster and higher attacks with more drones.

Development of interceptors. Mobile teams Gen 2.0. Increase in MT effectiveness to 45%

Large number of Ukr radars destroyed: AD gaps

Initial Russian Shahed drone attacks exploits gaps

Russians copy Ukrainian mobile team orgs & tactics

Ukr forms special analysis team to improve effectiveness, standardise

Initial Russian missile & rocket attacks in Feb 22

2022

Ukr deploys 14K acoustic sensors

Ukraine unveils new drone designed to intercept Russian Shaheds

Russians raise Shahed op altitude

Sensor data becomes integrated. Effectiveness improved.

Ukr coord centre formed. C2, lessons, doctrine, standardisation

3K+ mobile teams formed

???

Average launches:
~110 per week

2023

Key Enablers:

- Embedded scientists.
- Scientific analysis of all trends.
- Mobilized soldiers with tech skills.
- Learn from every engagement by keeping the data.
- Automation in sharing info.
- Constant enemy focus.
- Single purpose: defend Ukraine.

← **Pentagon Pizza Report** ✓
1,446 posts



Pentagon Pizza Report ✓
@PenPizzaReport

Pentagon Pizza Report: Open-source tracking of pizza spot activity around the Pentagon (and other places). Frequent-ish updates on where the lines are long.

📅 Joined August 2024

78 Following 258K Followers

Follow

Pizza, the Pentagon and connecting the pepperoni dots to China's military parade

A Chinese social media account tracks a trail of orders to chains near the US Department of Defence

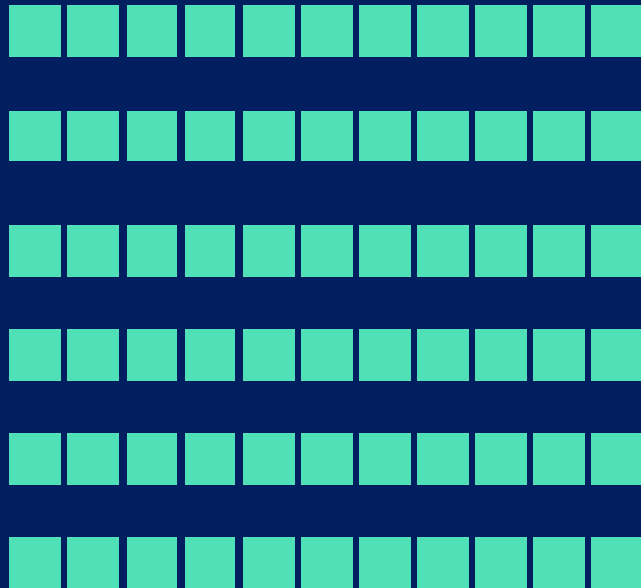
Reading Time: 2 minutes

Why you can trust SCMP



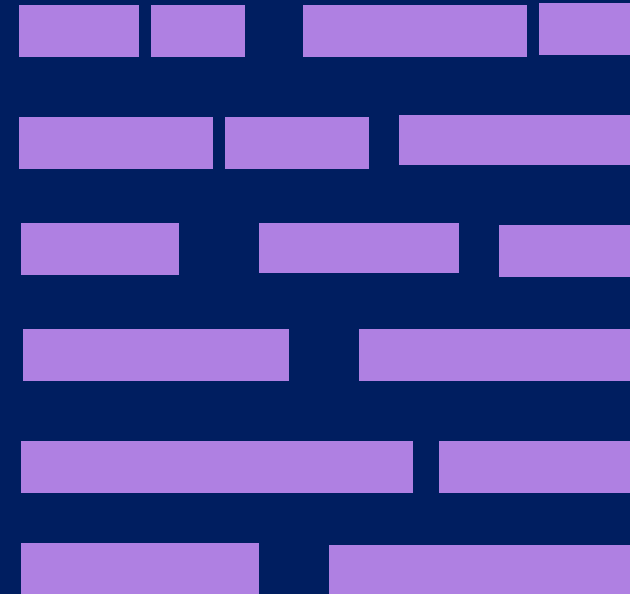
Fixed-frame optical transport

(SONET/SDH, OTN, CPRI)

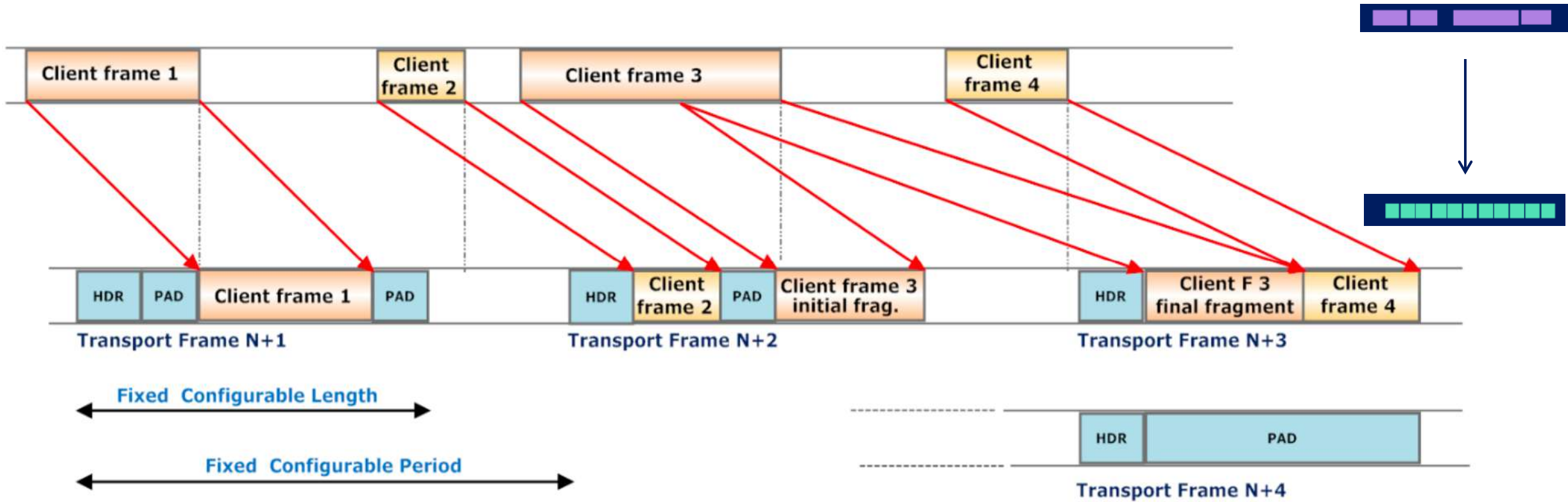


Variable-length packet transport

(ETHERNET)



TRANSEC – Traffic Flow Security



Traffic Flow Analysis on a modern network

INNOVATION > SCIENCE

AI Chat Privacy At Risk—Microsoft Uncovers Whisper Leak Side-Channel Attack

By [Lars Daniel](#), Contributor. ⓘ Lars Daniel covers digital evidence and...



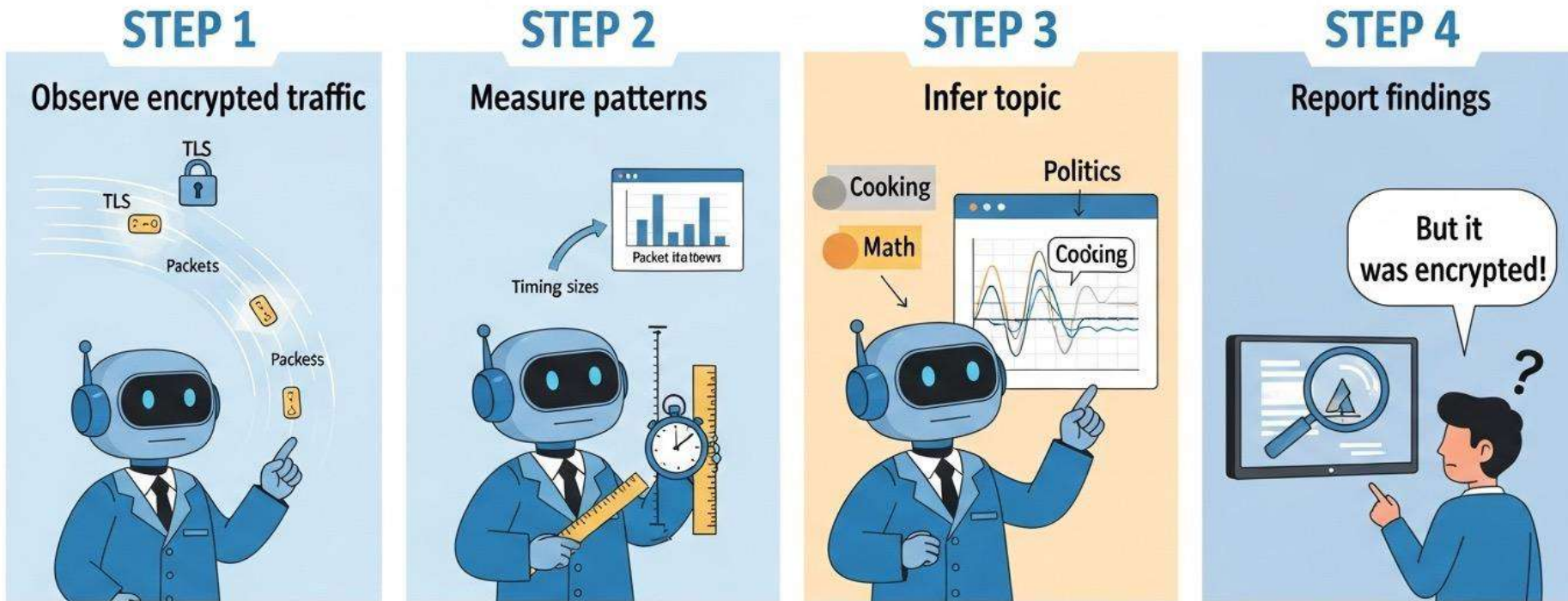
Follow Author

Published Nov 09, 2025 at 02:09pm EST

<https://arxiv.org/html/2511.03675v1>

Traffic analysis for LLM privacy agent

WHISPER LEAK



Where is the leakage

Lessons learnt

POSTSCRIPT

A story of courage, resilience and diversity

At war's end, Admiral Sir Max Horton, who had been defeated on that memorable day in 1942 by two young Wrens, sent a personal signal to all who had served in the unit – a powerful tribute to their quiet but momentous achievement.

Jean Laidlaw became one of Britain's first Chartered Accountants retiring as chief accountant for Baker & Mackenzie. She stayed in touch and was part of the Wrens until she died peacefully in 2007.



WRNS, Jean Laidlaw

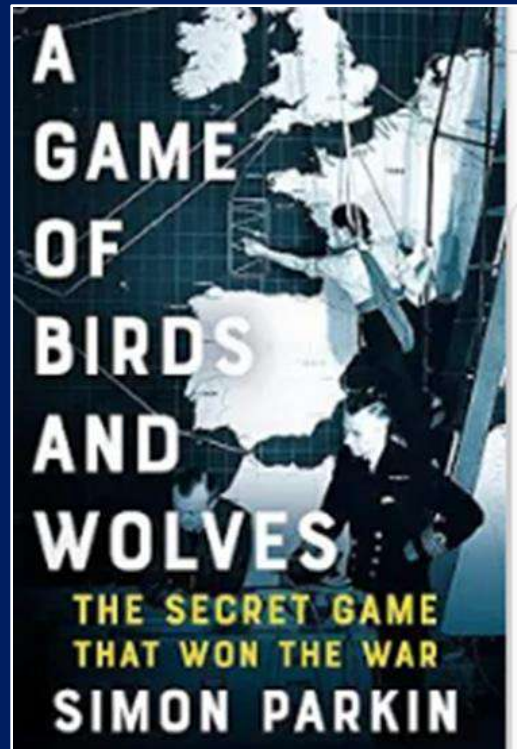
A large, stylized blue opening quotation mark on the left side of the slide.

On the closing down of WATU I wish to express my gratitude and high appreciation of the magnificent work of Captain Roberts and his staff, which contributed in no small measure to the final defeat of Germany.

- Admiral Sir Max Horton

A large, stylized blue closing quotation mark on the right side of the slide.

In 1975 the British government issued a decree stating that the stories from the battle for the Atlantic could be told.





Thank you

senetas.com