Hacking the Planet by Turning a Ship Left



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Images: https://www.marineinsight.com/marine-navigation/understanding-turning-circle-of-a-ship/
https://www.reddit.com/r/Cyberpunk/comments/9xnqkq/real_hackers_tell_us_why_they_love_the_movie/?rdt=58539

presenter@dc33:~$ whoami



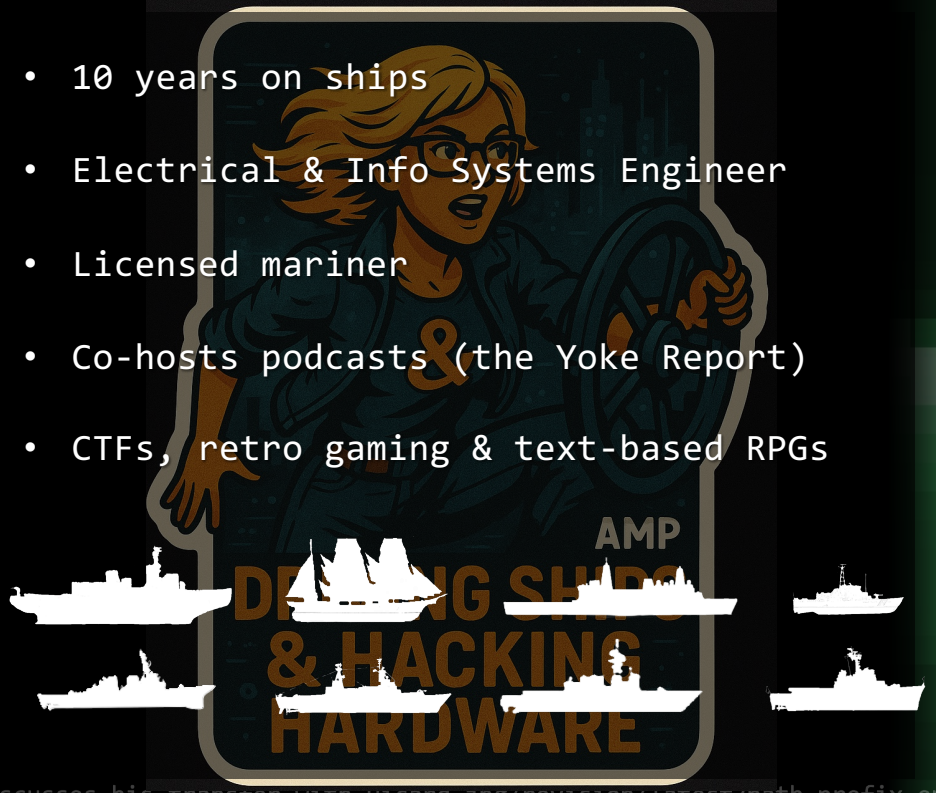


Images: https://static.wikia.nocookie.net/memoryalpha/images/4/40/Data_discusses_his_transfer_with_Picard.jpg/revision/latest?path-prefix=en
ChatGPT generated image

presenter@dc33:~$ whoami

- Retired USAF Cyber Warfare Officer
- USAF Academy, AFIT & CNODP Grad
- NSA Red Team x3 (all) certifications
- Cyber SIGINT x3 (all) certifications
- USCC OCO x6 (all) qualifications
- Air/Land/Sea/Space/Cyber targets with US, UK, Canada, Australia & New Zealand
- DC33 Starship Badges

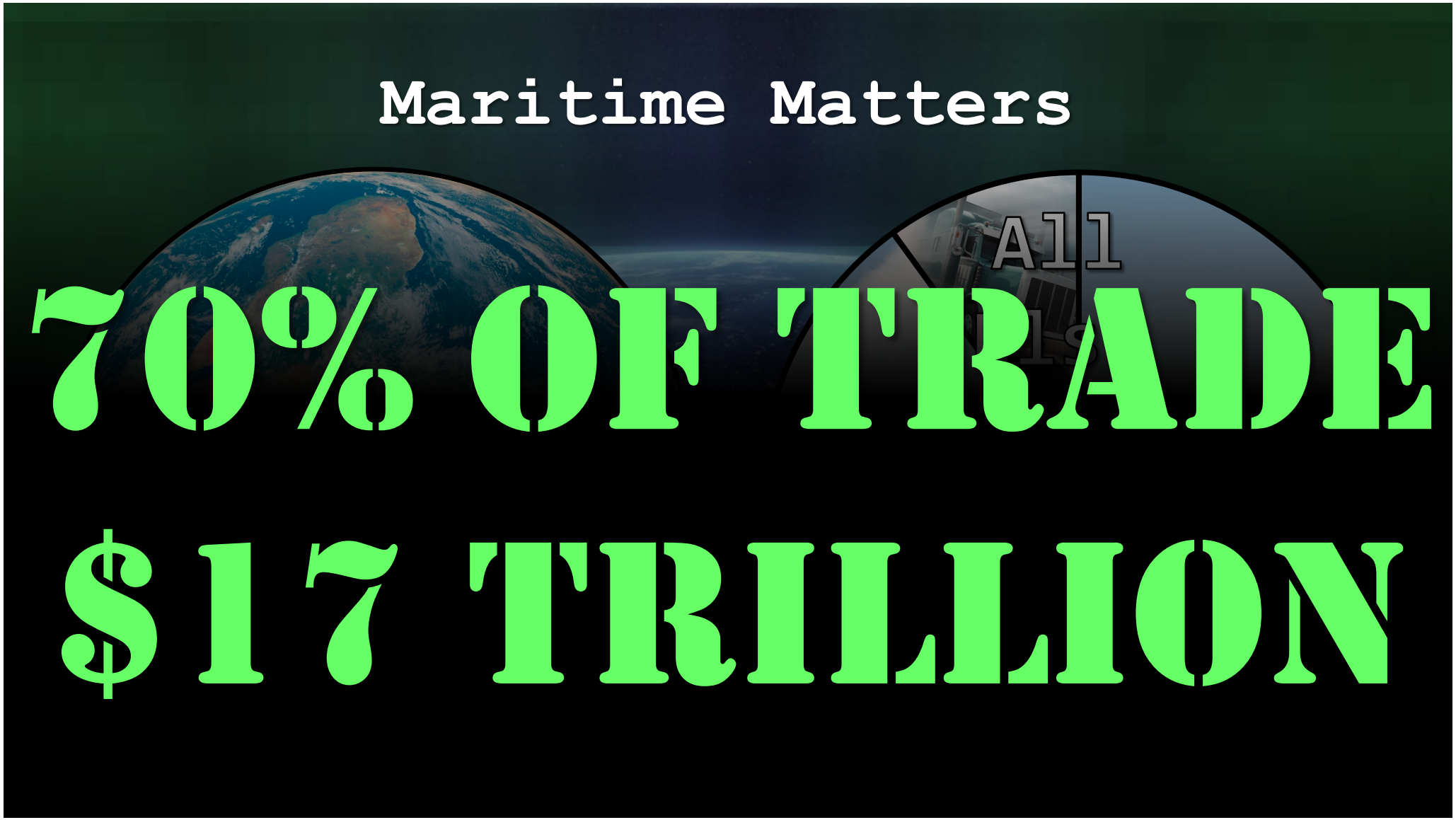
- 10 years on ships
- Electrical & Info Systems Engineer
- Licensed mariner
- Co-hosts podcasts (the Yoke Report)
- CTFs, retro gaming & text-based RPGs



Images: https://static.wikia.nocookie.net/memoryalpha/images/4/40/Data_discusses_his_transfer_with_Picard.jpg/revision/latest?path-prefix=en
https://static.wikia.nocookie.net/marveldatabase/images/6/6c/Amp_%28Michelle%29_%28Earth-90631%29_from_Exiles_Vol_2_2_0001.jpg/revision/latest?cb=20110707060936 (modified with AI & Photoshop)


Fed?
Salty
Fresh


Just to be Clear
PORT
STARBOARD


Maritime Matters
All
70% OF TRADE
$17 TRILLION

The Real Target(s)







CONFIDENCE

Oceans Rule



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Images: https://m.media-amazon.com/images/I/61f7S5aaegL._SL1490_.jpg
https://www.amnautical.com/products/cfr-33-complete-set-navigation-waters
https://www.amazon.com/IMDG-Code-Supplement-2024-IMO/dp/928011798X
https://www.amazon.de/-/en/IMDG-Code-2024-42nd-English/dp/9280117963

Candy Ships







https://zeymarine.com/worlds-largest-container-ships/
https://upload.wikimedia.org/wikipedia/commons/thumb/0/02/Willis_Tower_From_Lake.jpg/960px-Willis_Tower_...
Images: https://s3.amazonaws.com/cka-dash/023-0824-TPL24103/model1.webp

~~Candy~~ Ships:
Hard Outside, Gooey Inside



≠

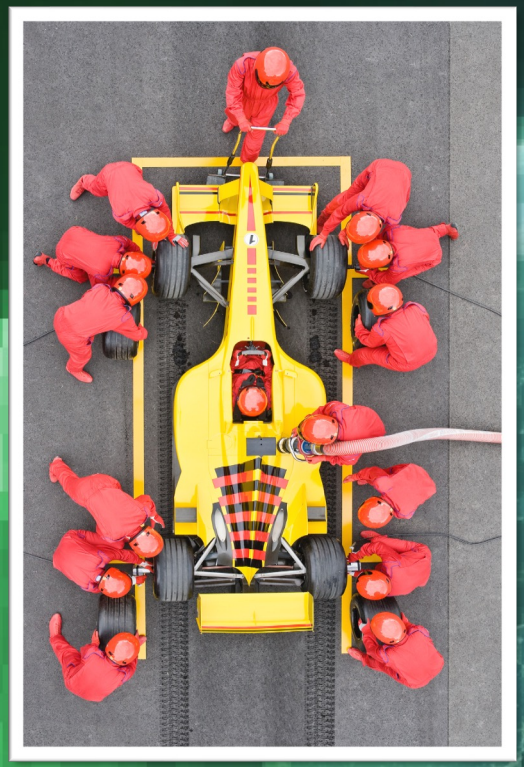


https://zeymarine.com/worlds-largest-container-ships/
https://maritimecybersecurity.nl/



https://www.writeups.org/wp-content/uploads/Leonard-Bones-McCoy-Star-Trek-DeForest-Kelley.jpg

Crew ≠ SOC







Attack Chain

- NMEA sentence -> equipment does stuff
- Twiddle the bits of the sentence -> “surprise”
- For anyone whose spent time at sea, you’ll here “colorful metaphors” in that particular instance

Turn Left, Break Everything



Left
Rudder

Image generated by AI

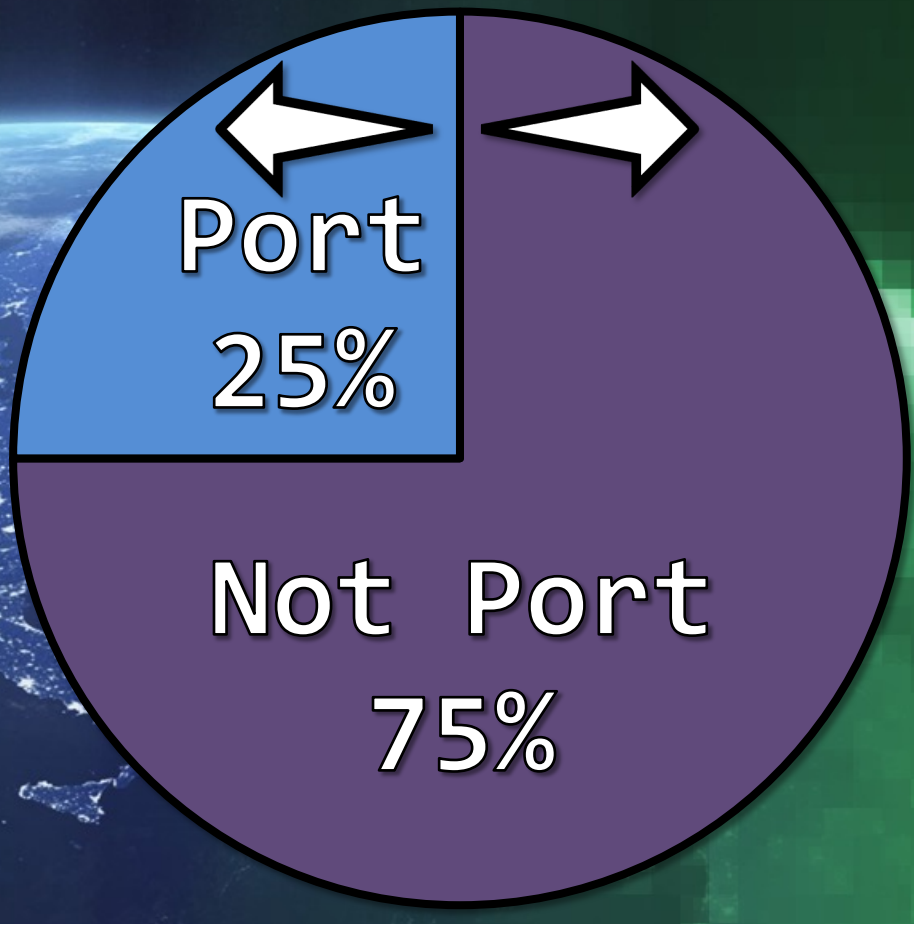
What It's Like At Sea



Image generated by AI

Why It Works


Department of Homeland Security
United States Coast Guard
Navigation Rules and Regulations Handbook
Containing - International and Inland Rules of the Road and their respective Annexes
- Bridge-to-Bridge Radiotelephone Regulations
- Vessel Traffic Managment Regulations
- Other pertinent regulations for waterway users
Latest Edition as of
April 2025
As Amended August 2024


Port
25%
Not Port
75%

Cyber Risk vs. Human Risk



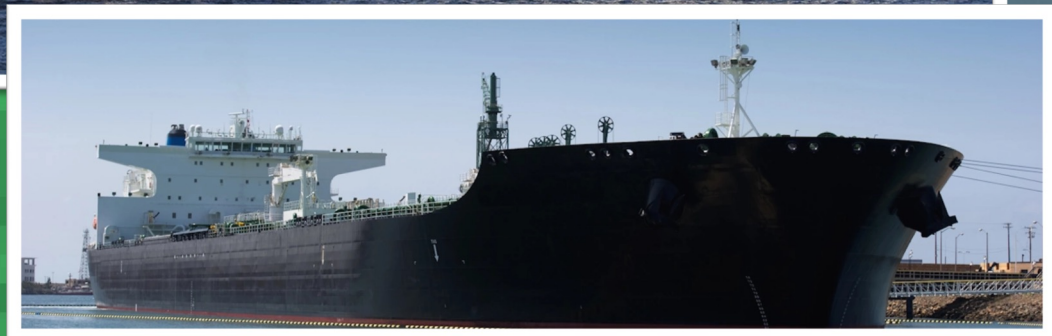


Images: System failure generated by AI,
https://media.tenor.com/Z0hiS989lYEAAAAe/deer-in.png
https://media.zenfs.com/en/buzzfeed_articles_778/084c0bb2e989a7230c6b78827ae0053a

It's Happened Before



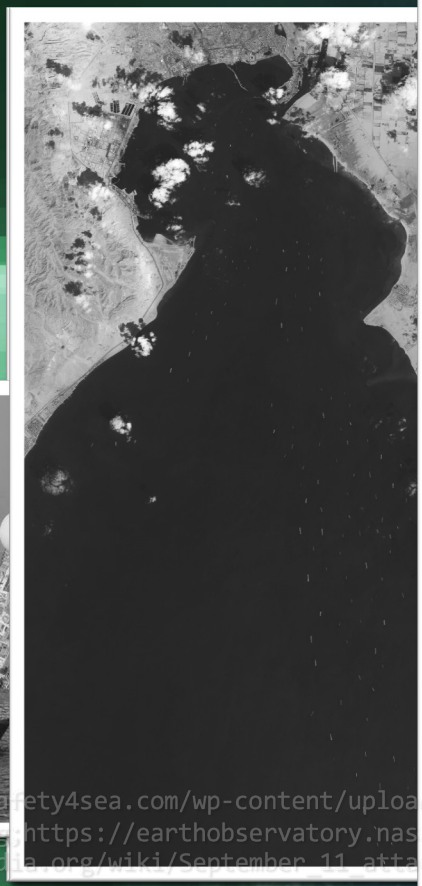




Images: https://upload.wikimedia.org/wikipedia/commons/6/66/US_Navy_170821-N-OU129-022_Damage_to_the_portside_of_USS_John_S._McCain_%28DDG_56%29.jpg, https://safety4sea.com/wp-content/uploads/2018/01/costa-concordia1-e1515690349220.jpg, https://industrialcyber.co/wp-content/uploads/2025/03/2025.03.19-Cydome-analyzes-Lab-Dookhtegan-cyber-attack-on-Iranian-oil-tankers-provides-mitigation-action.webp

“But Does It Scale?”







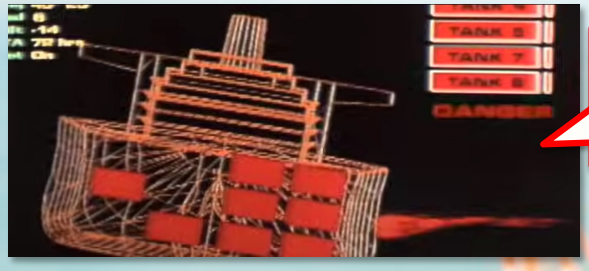
Images: https://safety4sea.com/wp-content/uploads/2018/01/costa-concordia1-e1516903492220.jpg https://earthobservatory.nasa.gov/images/148114/traffic-jam-on-the-suez-canal?src=nha https://en.wikipedia.org/wiki/September_11_attacks#/media/File:Explosion_following_the_plane_impact_into_the_South_Tow[illegible]C_2)_-_B6019~11.jpg

A Matter of Ports



https://cdn.mos.cms.futurecdn.net/jhBxLSTpFgPTq6X5YttJFf-650-80.jpg.webp
https://i.redd.it/wdzznhuc7tgx.png

Port Scanning



Targeted Malware

GPS Jamming & Spoofing

AIS Spoofing

Navigation Hazards

Automated Cranes

Inventory Tracking

Customs

Digital Charts

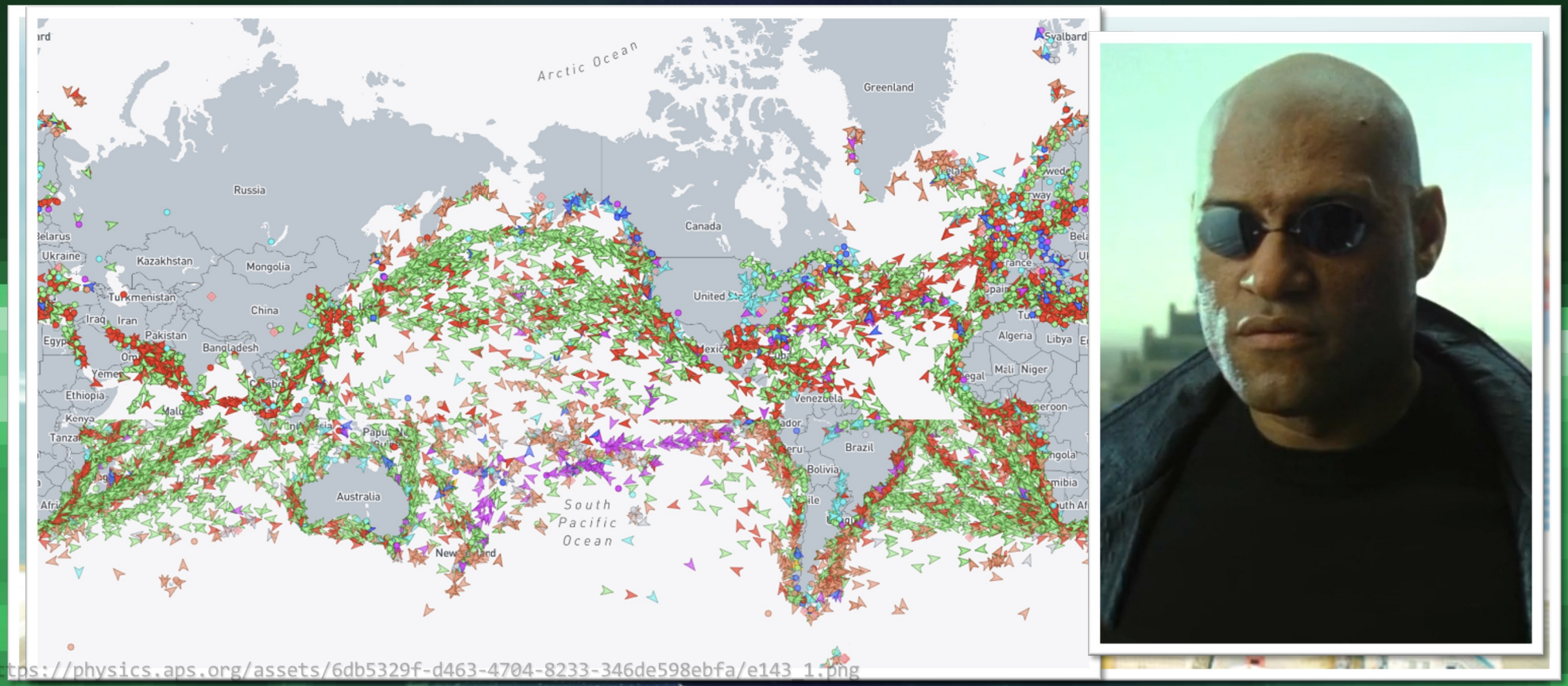
The Cloud

Robotic Container Movement

Ransomware

Photo modified by AI
https://youtu.be/Rn2cf_wJ4f4?t=73

Systems of Systems of Syste…



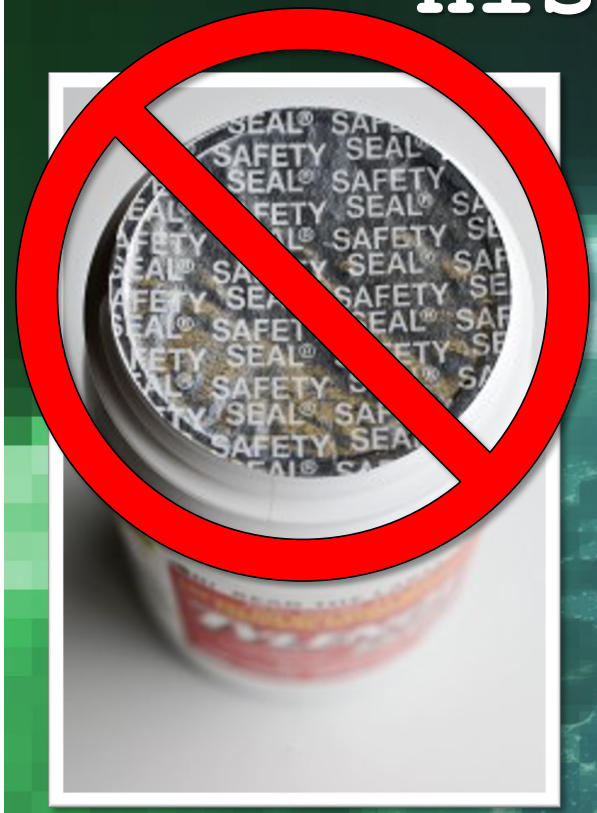
https://physics.aps.org/assets/6db5329f-d463-4704-8233-346de598ebfa/e143_1.png
https://www.marinetraffic.com/en/ais/home/centerx:-9.7/centery:0.0/zoom:2
https://i0.wp.com/erickimphotography.com/blog/wp-content/uploads/2018/07/matrix-cinematography-497260439575..jpg

The Big Con



https://cdn.shopify.com/s/files/1/0496/1383/2342/files/defcon_k_skull-reg_54b34d05-a33f-4c62-bb9f-4b8cc33dfec3.jpg?height=628&pad_color=fff&v=1614319711&width=1200

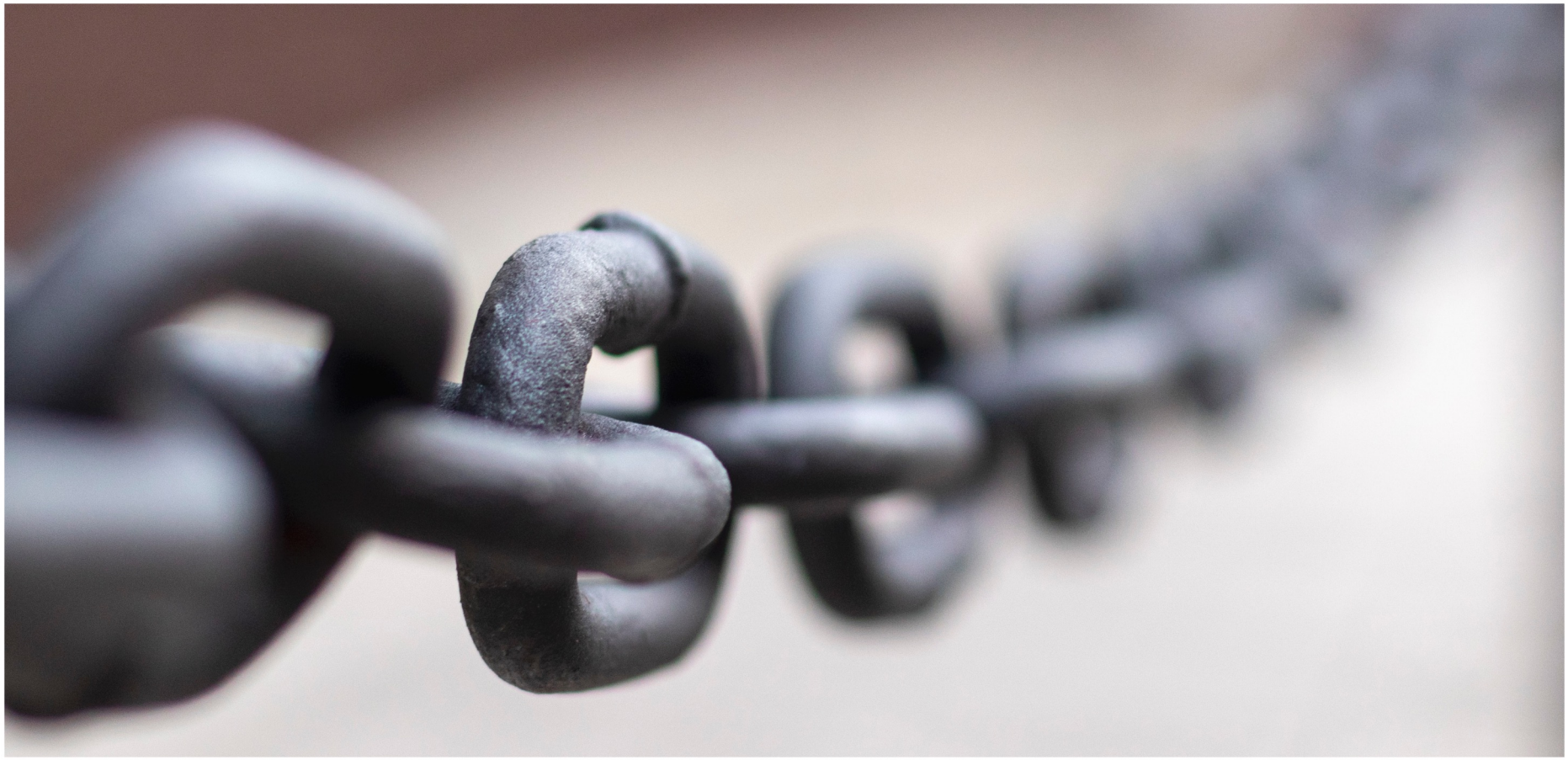
Historical Parallels





https://d3i6fh83elv35t.cloudfront.net/static/2014/09/95797955-1-207x300.jpg
https://media.nbcnewyork.com/2022/11/Large-Razor-blade-in-3-Musketeers11-03-2022-22-47-44.png

What Would It Take?





https://lh3.googleusercontent.com/proxy/fun9ydlEYGz-tb4tvFlQKg-leHr5Ns4M_kvLSWuhbcOYhJEDuTHNMzI1b9Ssx8K7LQ1gcuOv48-F3z60APJ7eoJMLOgifaYgVNeI4W5wvm7lxhQc5NvPQsqB6CbYXgNCQRls6hoTWiF-Cr37CTSiwsQv1BbQxlZb1yU; 'I Believe' created by AI

Hacking the Planet by Turning a Ship Left



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https://www.reddit.com/r/Cyberpunk/comments/9xnqkq/real_hackers_tell_us_why_they_love_the_movie/?rdt=58539

Recommendations

- Engineer verification into the trust process
- Out-of-Band Security Systems
- Network Segmentation
- Multi-source Navigation
- Build for resilience, not just compliance
- Regular Penetration Testing
- Cybersecurity Culture
- International Coordination