CYBERSECURITY

EW

TALES FROM THEATER

The Counter Improvised Explosive Device Electronic War

YOU HAD A QUESTION ABOUT MY LEADERSHIP STYLE?

TALES FROM THEATER

- Early on - Solders had no experience with Electronic Warfare
  - Nine different jammers were fielded in first few years
  - Threat specific jammers
  - Deployments across theater often resulted in mismatching jammers to threats

- A black box that screwed up their radios!

TALES FROM THEATER

- Some jammers attacked each other!
  - System labeled 6.6 was followed by system labeled 6.12
  - Many refused to believe 6.12 was the improved system and wouldn't give up their old systems
  - One attacked pacemakers!
- Did the jammer work or were there no bombs?
- Initial strategy – One jammer to multiple vehicles
  - Create a "Bubble" around a convoy
  - Line of sight in urban environments
  - Increasing sophistication of threats

TALES FROM THEATER

- Congress ordered purchase and deployment of a specific Jammer

- T&E proved it didn't work!
  - System deployed with T&E Information included
  - System never left the CONEXs
    - No CONEX with these Jammers were ever hit by an IED!

TALES FROM THEATER

- Cell phones rapidly became a problem
  - Important component in rebuilding infrastructure
  - Could not jam the uplinks
- Needed to replicate massive networks
  - Cell in box was too easy to defeat
  - Central switches ~ $7M + $2M/yr
    - Needed 6 to cover all technologies
- Line of sight an issue in urban environments and on large vehicles

IMPACT OF NO T&E

- State Dept security forces in theater bought commercial jammers based on Trifold advertisement about performance

- State Department immediately requested DoD systems!

TALES FROM THEATER

- One U.S. Company provided a backdoor that engineers had left in place to fix problems
  - Resulted in System capable of "turning off" IED trigger device (Cyber or EW?)
- Theater was uncertain about effects of some jammers on cell networks
  - Labs custom built a test set to measure effects during actual missions
  - Resulted in 40% increase in effectiveness
    - TTPs changed across theater

CYBER OR ELECTRONIC WARFARE?

CYBER VS EW

- Just AI techniques to EW waveforms?
  - Or the last mile delivery of a Cyber bullet
    - I.E. a Cyber gun
- Identify phone signals that are benign and those that are hostile
- Need a box that is capable of thinking outside the box

COGNITIVE JAMMER

- Needs to be better
- Needs to be able to explain what it did and why
- Able to adapt its parameters
- Coexist
- Backward compatible
- Baby steps
  - Assist humans
  - Freq planning
  - Ew mission planning

COGNITIVE JAMMER

- A jammer that could decide that it wants to be a paperweight
- What motivation would make a system decide to be a good or great jammer?
- Cognitive jammer that almost gets shot down learns,
- Cognitive jammer that gets shot down does not learn
- Cognitive jammer that decides not to play? (WOPR)

MOSUL TO HARBORGATE

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SFC FROM LSA DIAMONBACK

- "The guys just wanted me to thank you, you are the first A$$h#le from the pentagon to come over here and put your A$$ where your numbers are"

- T&E - its not just numbers-

  It's soldiers lives!

Hughes

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ARMY

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