



AFCEA

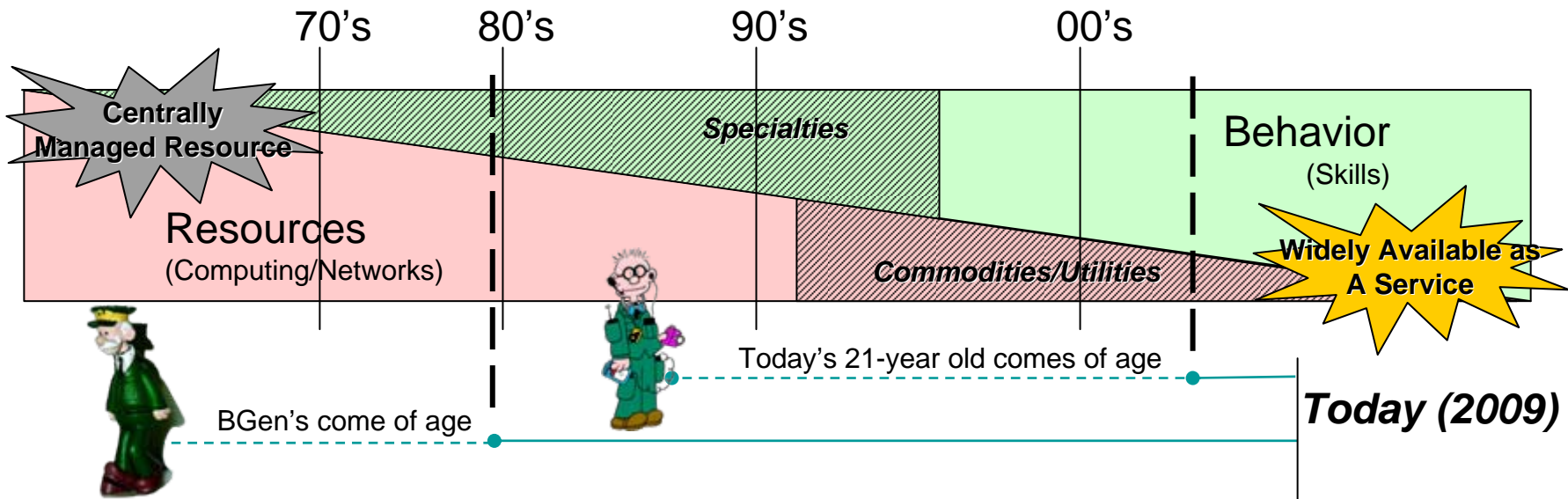
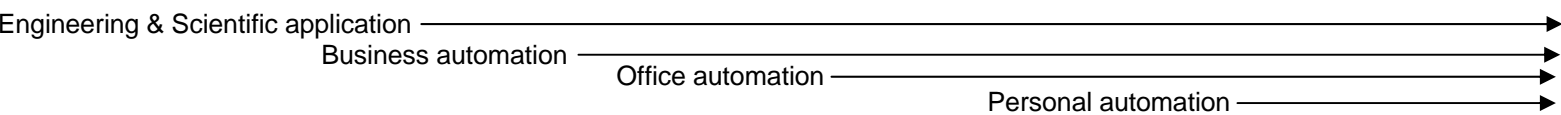
Quantico-Potomac

BGen George J. Allen
Director, C4
Headquarters, U.S. Marine Corps

12 Mar 09

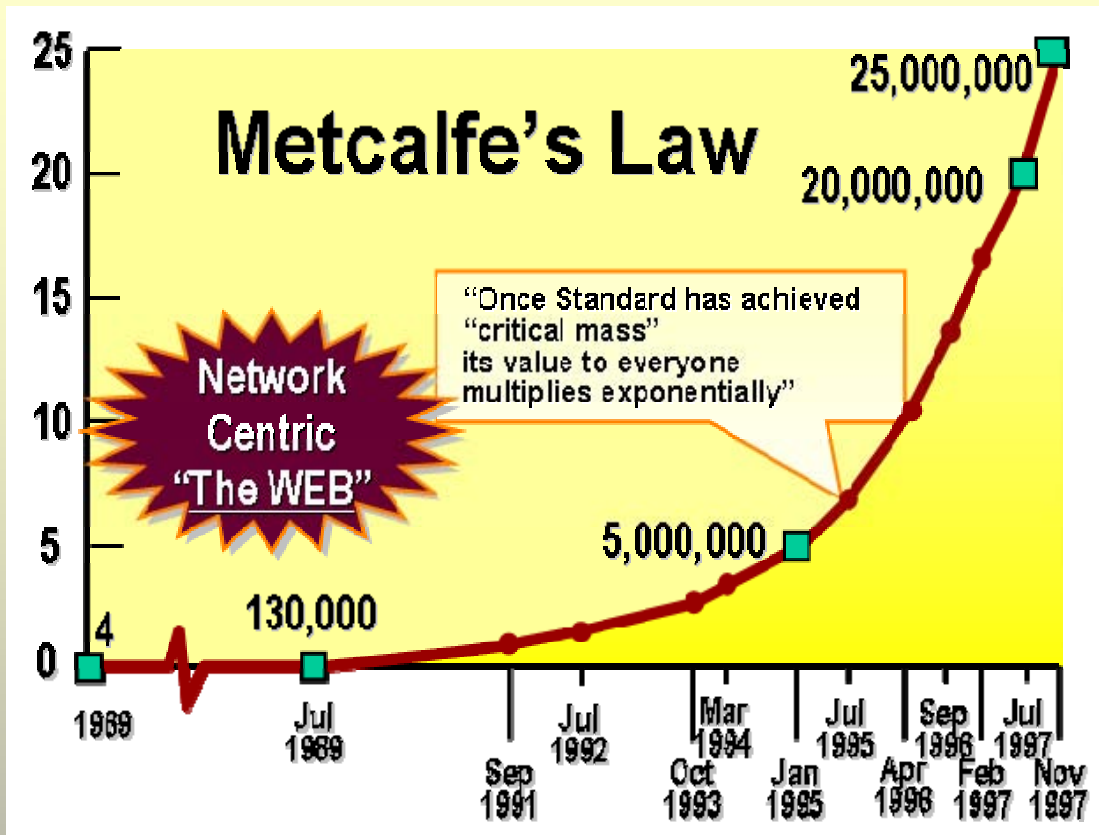


Evolution of Computing



PC Use (millions)	1970	1980	1985	1990	1995	2000	2002	estimate
United States			19.8	48	86	177	206	260
Worldwide			31.4	98	226	523	663	1,07
US population	203.3	226.5		248.7 19%		281.4 63%		303 80-85%

Only suggests per capita growth; not an economic finding



"The usefulness, or utility, of a network equals the square of the number of users"



Robert Metcalfe

3Com Corporation Founder

....first talked about around 1980

....dubbed a law 1993

3COM



Countering The Cyber Threat

“The decision cycle of the future is not going to be minutes, the decision cycle of the future is going to be microseconds.”

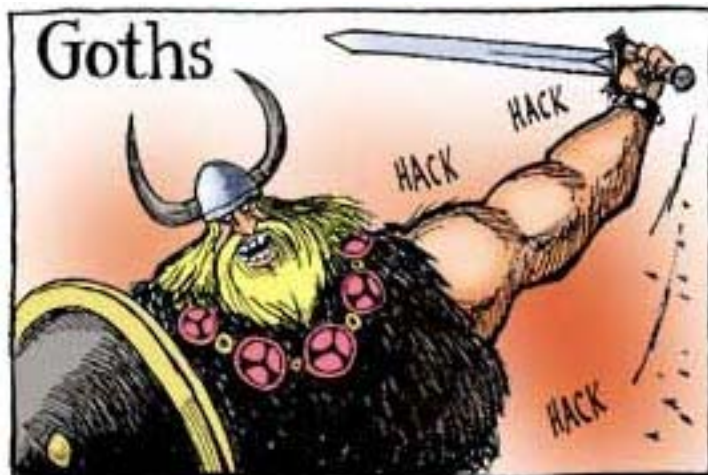
General James Cartwright
Vice Chairman, Joint Chiefs of Staff





Historical Perspective

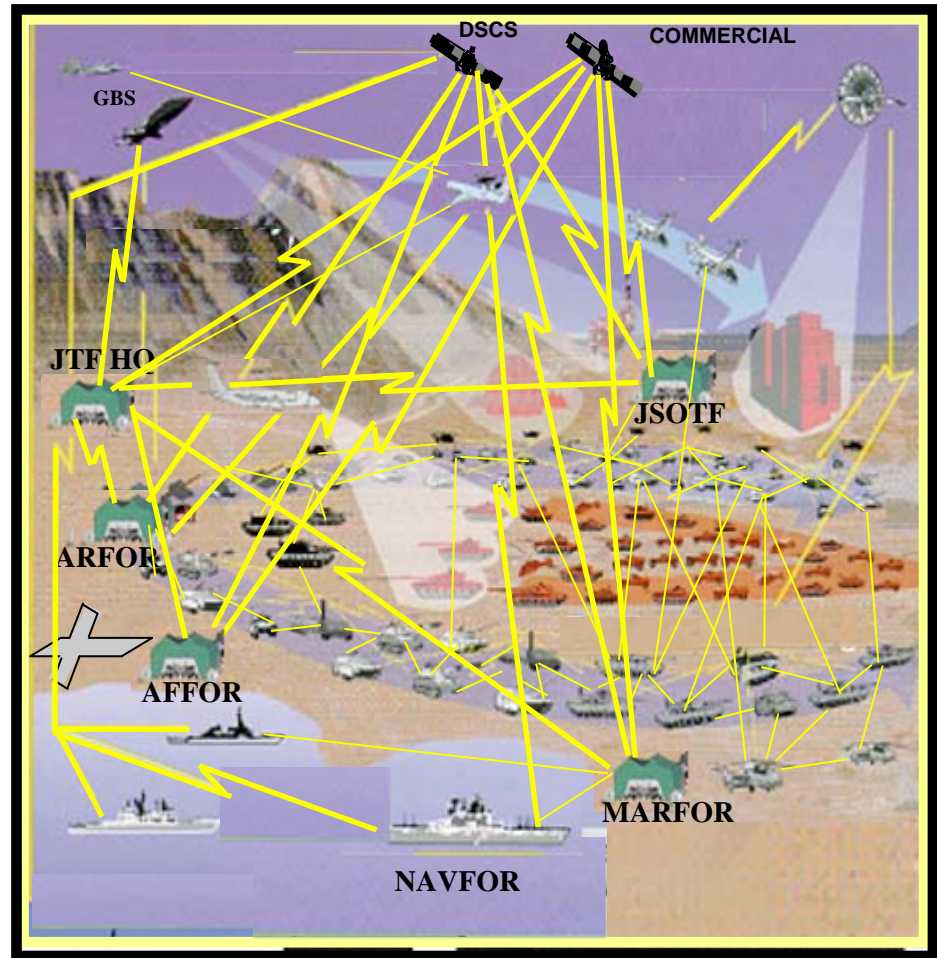
BRINGING CIVILIZATION TO ITS KNEES...





The Reality of the Situation

- Dependence on systems
 - DoD command and control of complex missions; weapons systems acquisition and use; predict weather; manage, pay, **supply the Warfighter**, and support world-wide activities.
 - Dependence will increase as DoD evolves to seamless structure of systems and networks operating as a *utility* supporting war fighting, intelligence and business functions
 - We're more dependant on information technology, therefore more vulnerable to information technology attacks





The Cyberspace Domain – What we are Defending

Working Definition of Cyberspace:

“A domain characterized by the use of electronics and the electromagnetic spectrum to store, modify, and exchange data via networked systems and associated physical infrastructures”

- Cyberspace domain is analogous to air, land, sea, & space domains
- Cyberspace is a place where DoD must be ready and capable to fight
- Cyberspace is global: erases time/space constraints; access straightforward
- Successful operations require: awareness, speed, integration
- Requires similar components--infrastructure, capabilities, resources
 - Science/Technology development and research
 - Industrial Base
 - Inter- and Intra-Governmental Partnerships
 - Doctrine, Training, Education, Skilled Practitioners
 - Operational Concepts, Strategic Thinking, Wargames, Exercises
 - Integrated offensive and defensive capabilities
 - Funding



Weapon of Choice?



- Platform: F-15E
 - COST = \$50,000,000
- Weapon: GBU-10
 - COST = \$40,000
- Operator: Trained F-15E Pilot
 - COST = \$10,000,000

- Platform: Intel Dual Core processor

- COST = ~\$1200

- Weapon: Logic Bomb

- COST = download for free

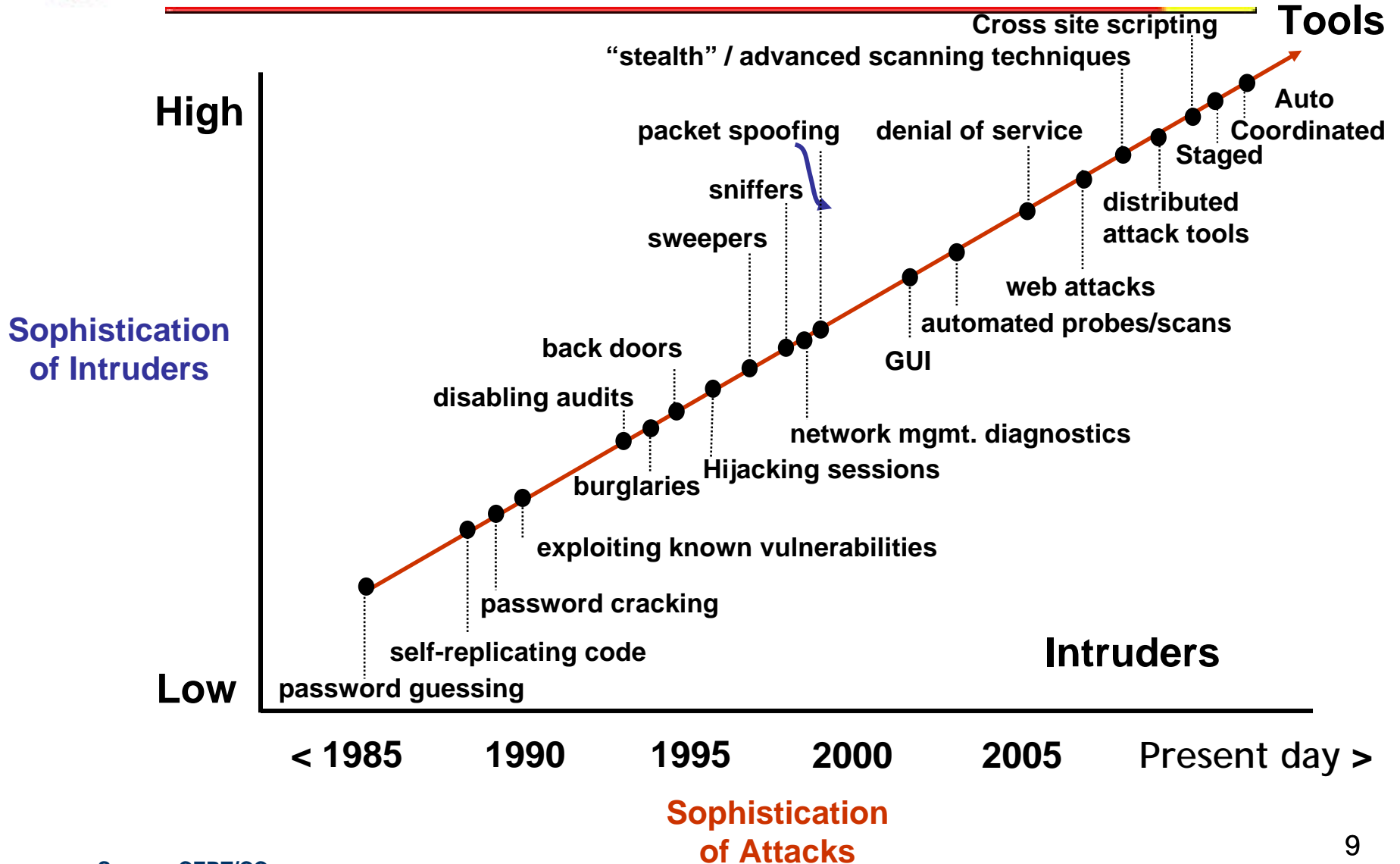
- Operator: Motivated Hacker

- COST = recruited student



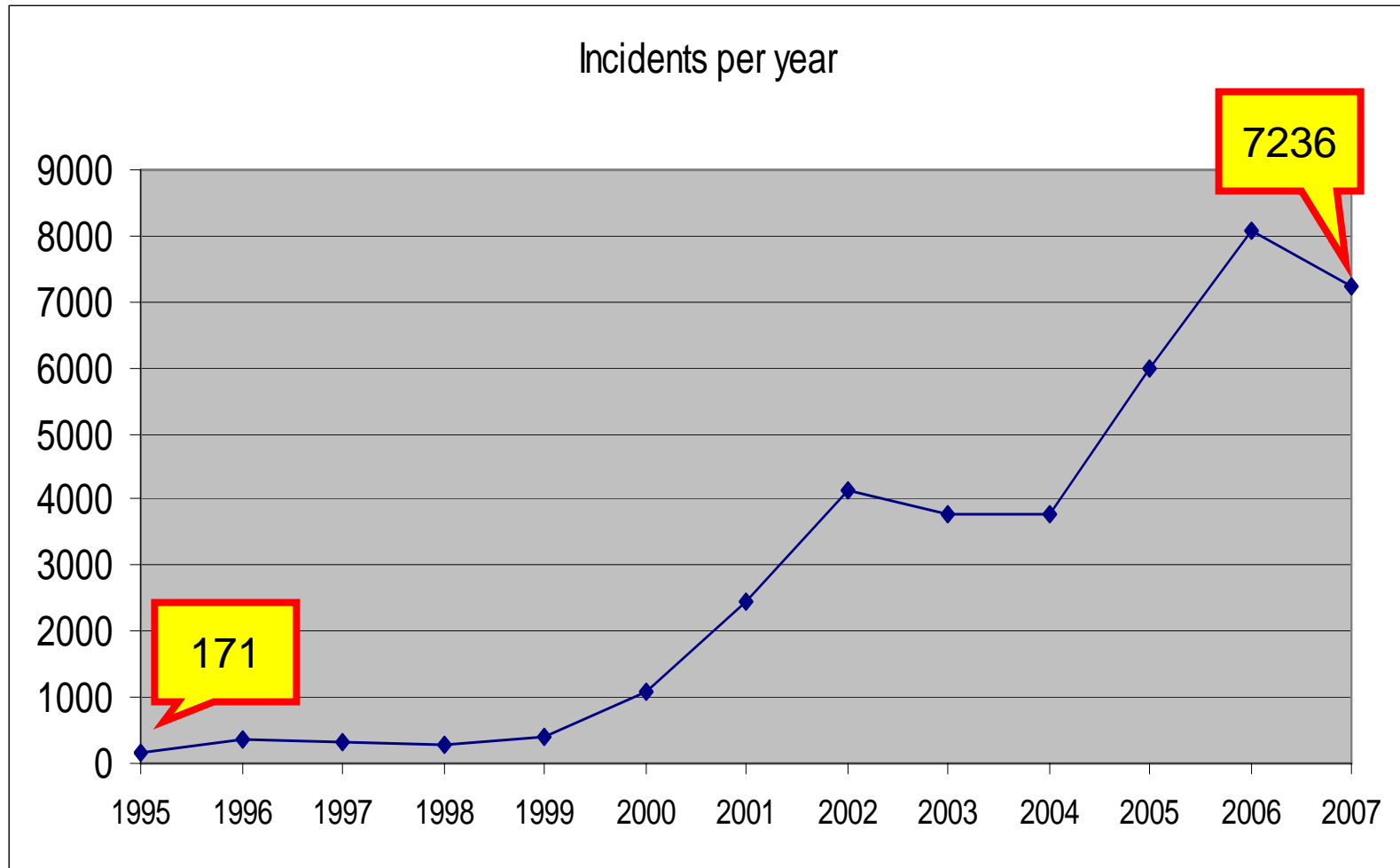


Growth of Threat Capability





US Computer Emergency Response Team incidents continue to increase



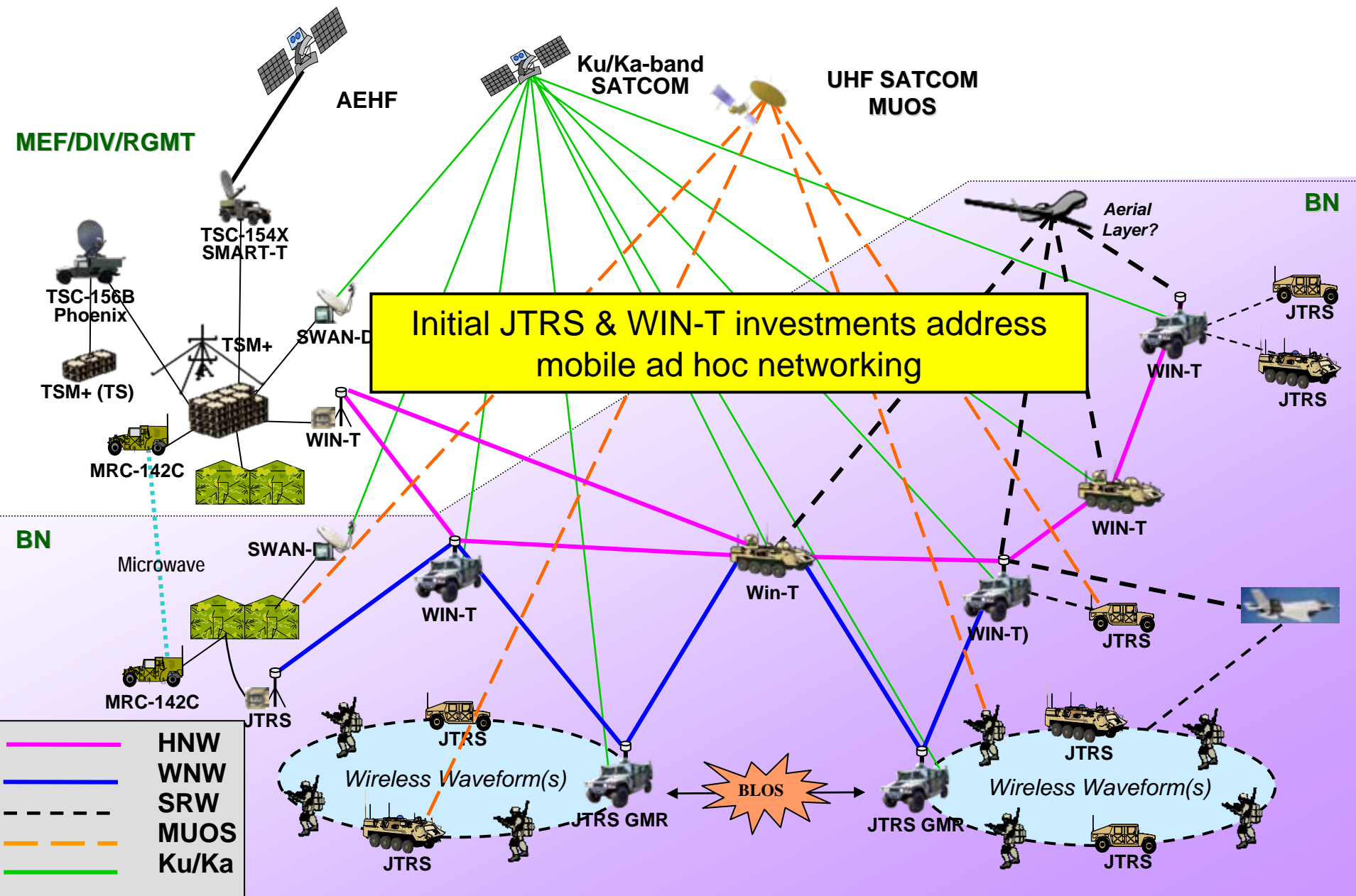
Over 8000 reported incidents to US CERT in 2006





Video

Play Bourne Video Here



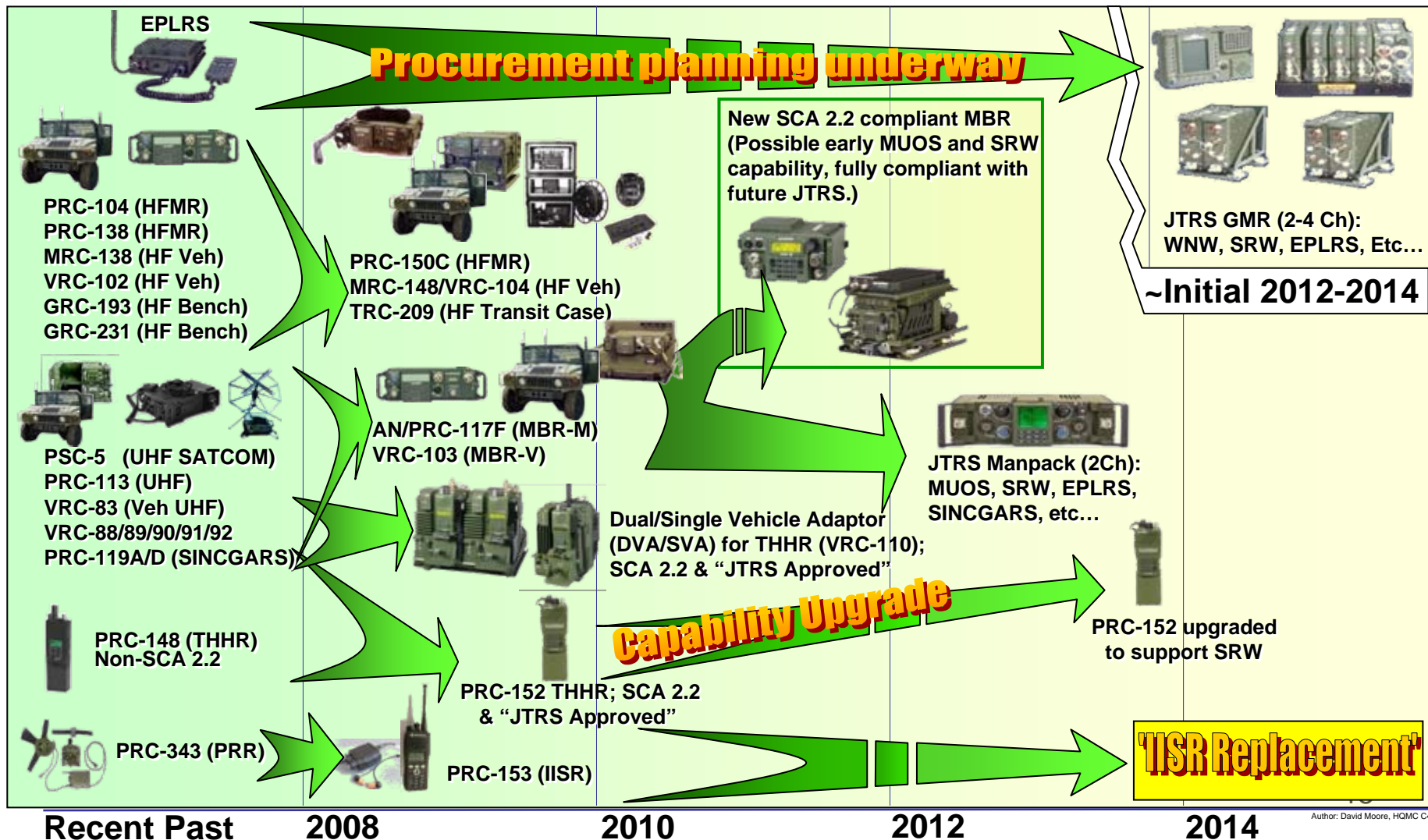


TCM Purpose & Strategy

- Replace all legacy radio systems
- Increase capability at small unit level
 - Tactical Handheld Radios & Integrated Intra Squad Radios
- Equip all tactical vehicles with radios
 - This includes tactical vehicles in MAGTF units
- Support 202K increase
- Plan transition to Mobile User Objective System (MUOS) terminals
 - MUOS replaces failing UFO Constellation

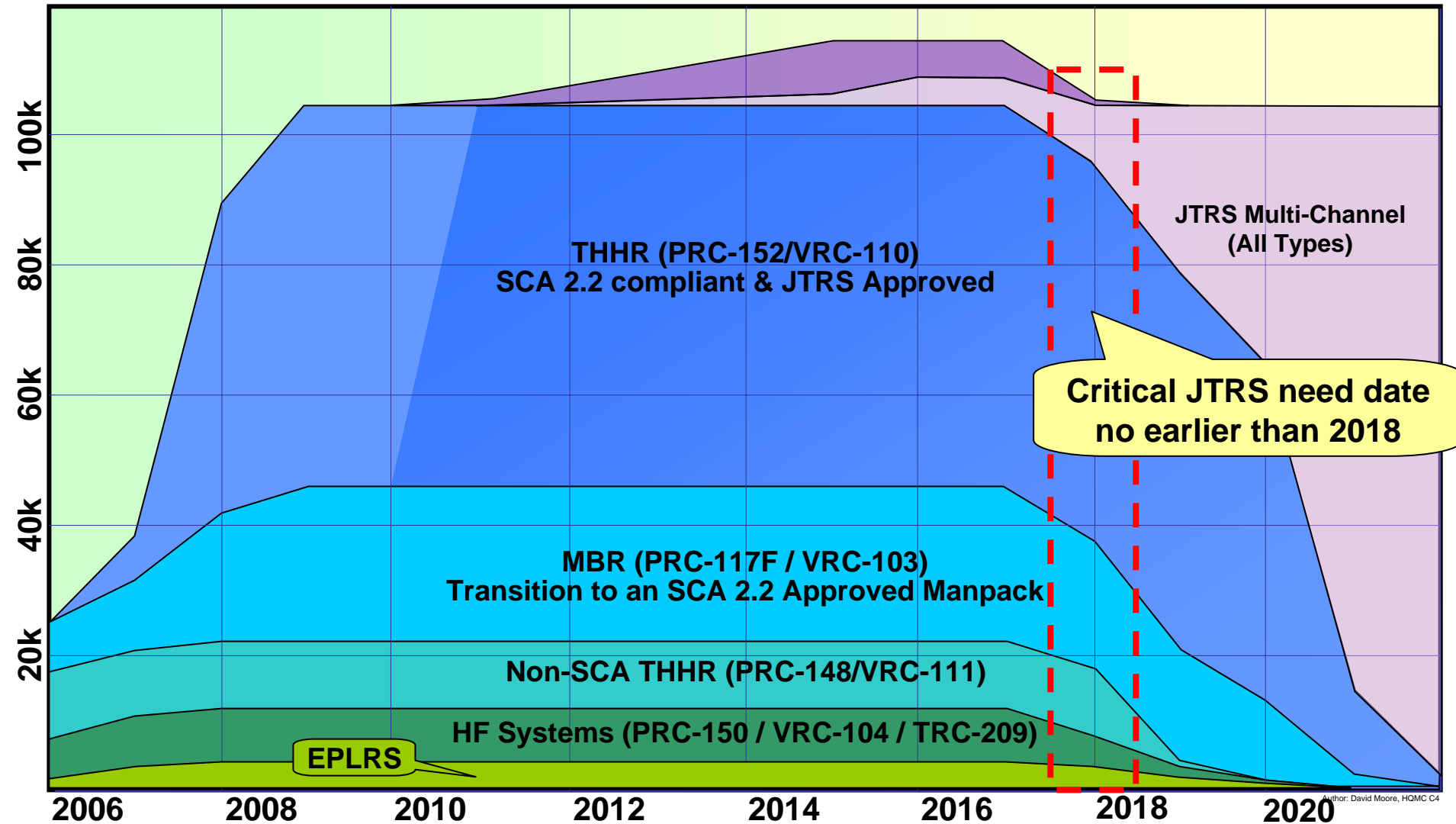


Tactical Radio Roadmap





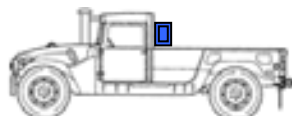
Tactical Radio Capabilities





Pre-OIF Rifle CO Radios

Co HQ (x3/Bn)

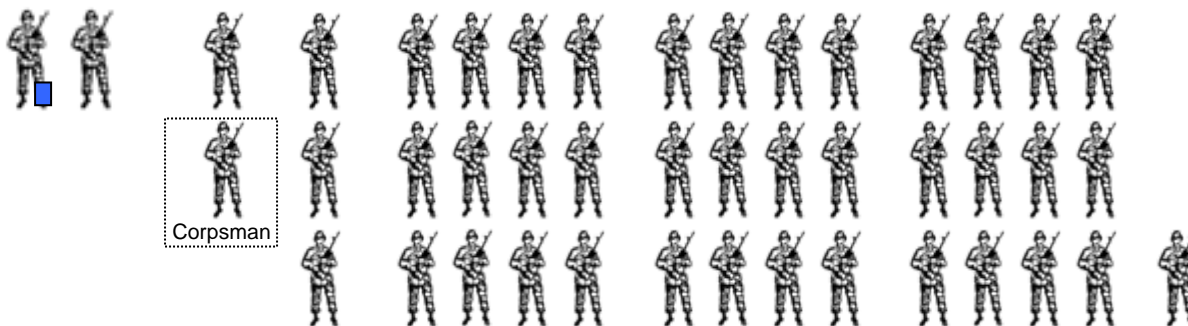


Mounted in M998A1

T/O 6 Officer/176 Enlisted

	VHF-V (VRC-88):	1
	VHF-M (PRC-119):	7
	UHF-M (PRC-113):	1

RFL Plt (x3/Co x9/Bn)



Radio Weights

Marine – N/A

Plt – 15 lbs

Co – 192 lbs

WPNS Plt (x3/Bn)



MG Sect

Mortar Sect

Assault Sect



TCM Rifle CO Radios

Co HQ (x3/Bn)



Mounted in M1123A2s

T/O 6 Officer/176 Enlisted

■	MBR-V (VRC-103):	1
■	MBR-M (PRC-117):	5
■	HFMR (PRC-150):	5
■	DVA (VRC-110):	2
■	THHR (PRC-148/152):	35
■	IISR (PRC-153):	176

RFL Plt (x3/Co x9/Bn)



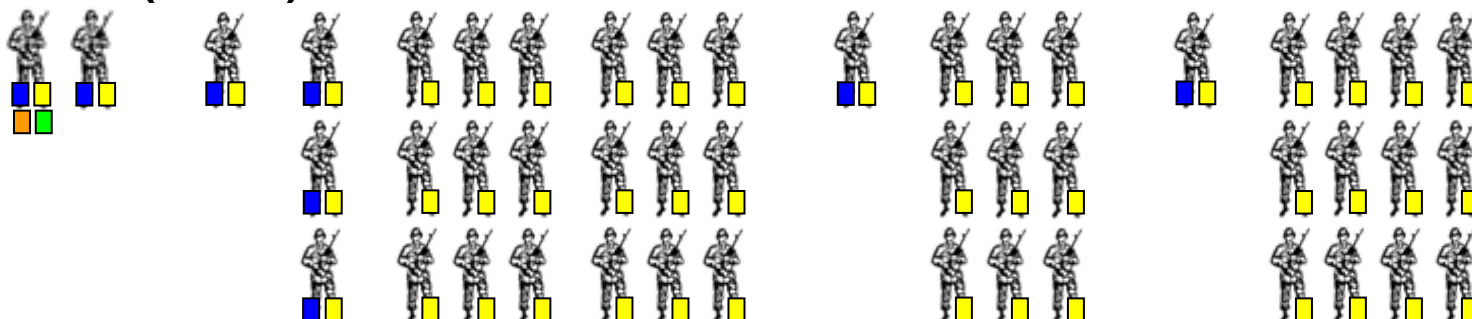
Radio Weights

Marine – 1-4 lbs

Plt – 78 lbs

Co – 534 lbs

WPNS Plt (x3/Bn)



MG Sect

Mortar Sect

Assault Sect



Summary

- Dramatic increase in tactical radio assets
 - Combat multiplier for the Marine Corps
- Moving closer to network capable radios
 - Will allow further extension of critical network resources to decision makers
- More capable than ever before!

“Radio Operators Up!”



08/01/2008 - U.S. Marines communicate with their command operation center during a raid on a Taliban headquarters in Afghanistan Aug. 1, 2008. The Marines are from Fox Company, 2nd Battalion, 7th Marine Regiment based out of Marine Air Ground Combat Center Twentynine Palms, Calif. DoD photo by Sgt. Freddy G. Cantu, U.S. Marine Corps. (Released)