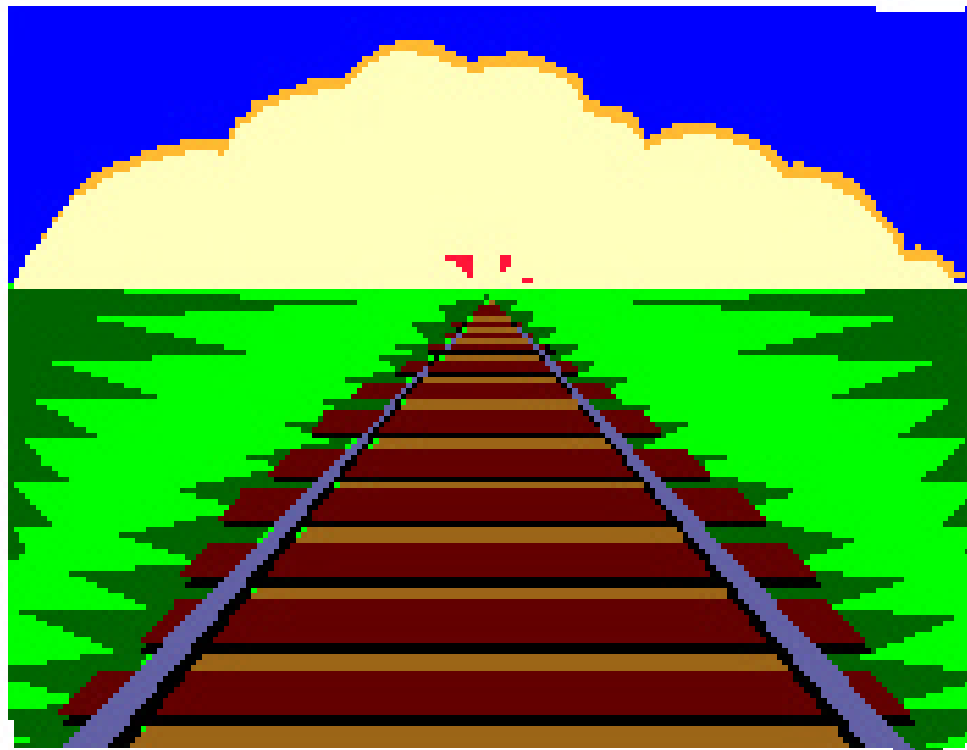


METANOIA



US Standard Railroad Gauge

(distance between rails) is 4 feet, 8.5 inches



← 4' 8.5" →

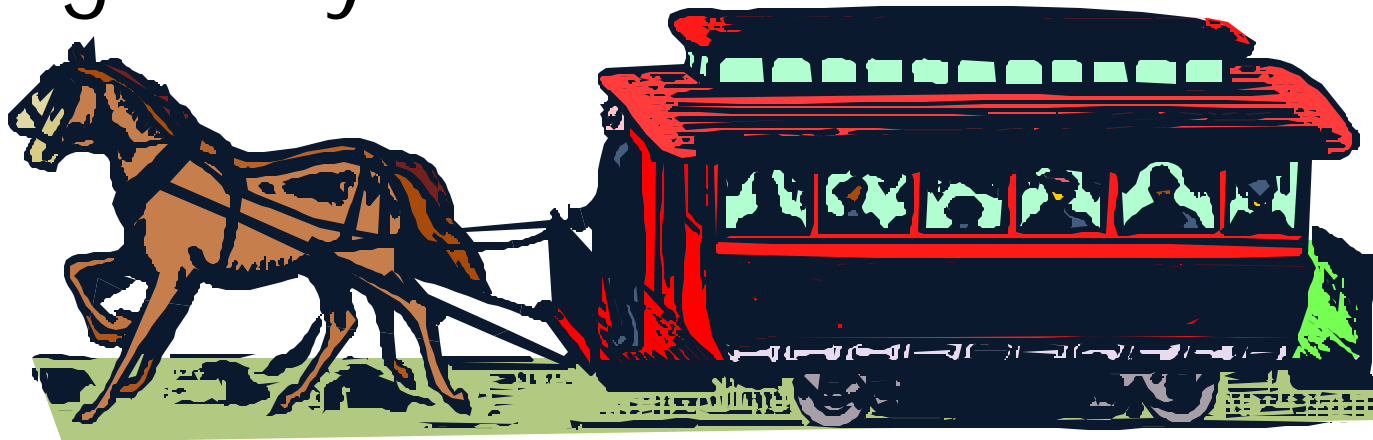
Why?

Because that's the way they built them in England, and the U.S. railroads were built by English expatriates.



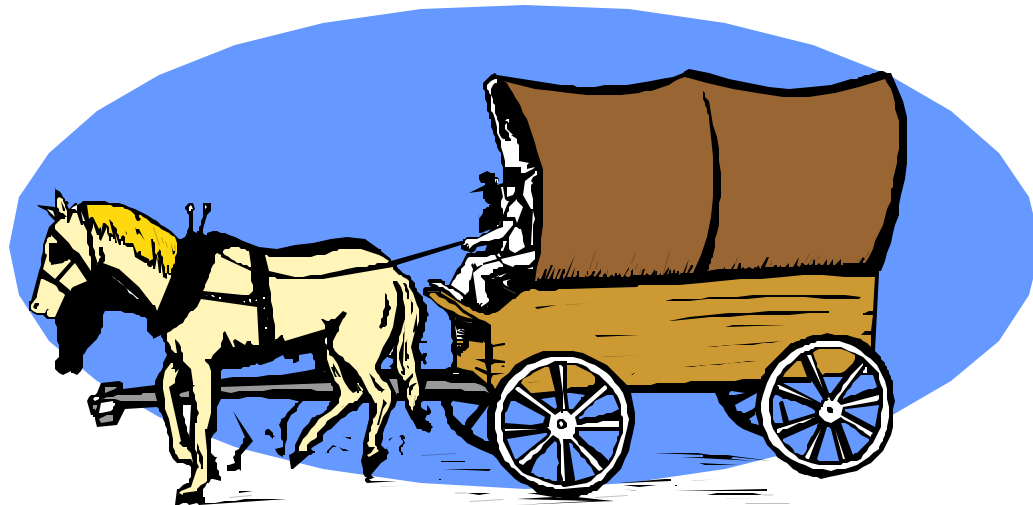
Why did the English build them like that?

Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.



Why did they use that gauge?

Because the people who built the tramways used the same jigs and tools that they used to build wagons, which used that wheel spacing.



Why did wagons use that spacing?

Because any other spacing would break the wagons on some of the old, long distance roads. Those roads had spacing from old wheel ruts.



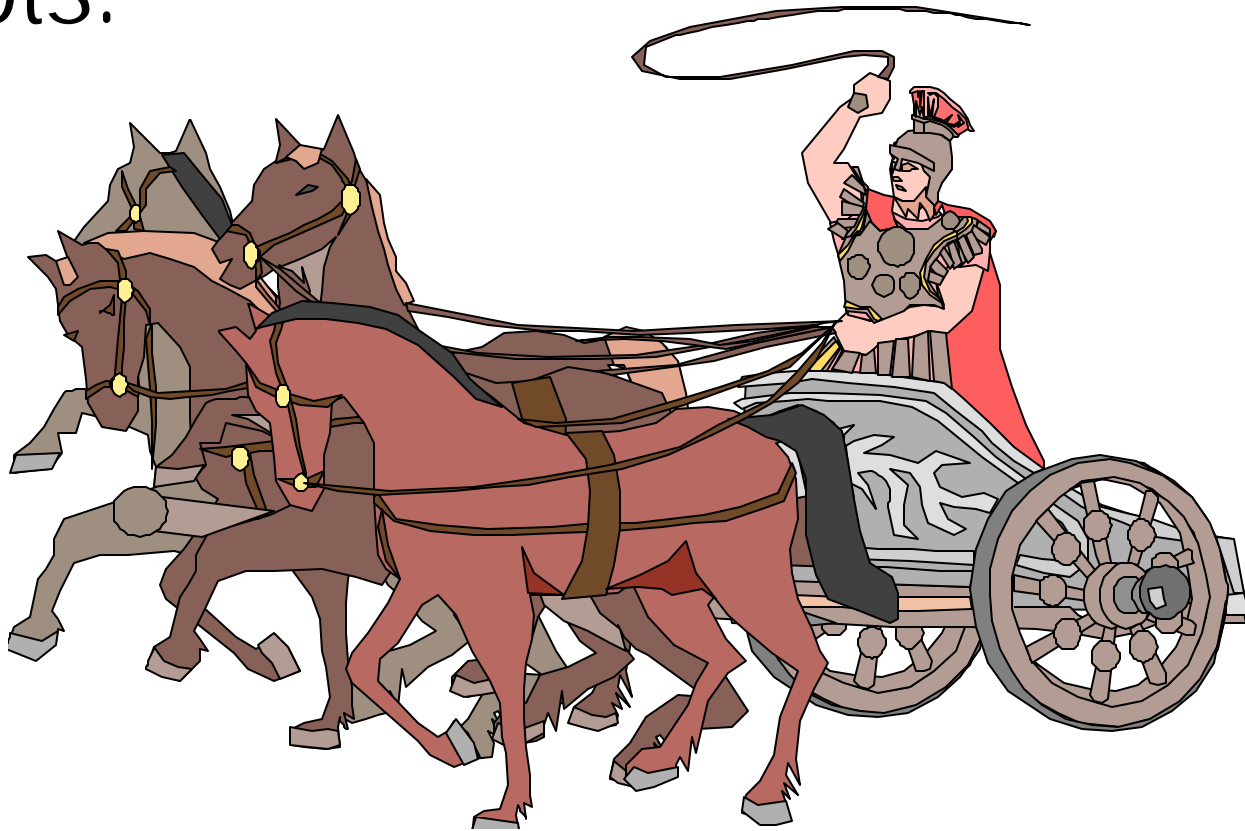
Who built these old rutted roads?

Imperial Rome for the benefit of their legions.



And the ruts?

They were first made by Roman war chariots.



SO WHAT?

World's Most Advanced Transportation System



Why the Need for a Shift in Thinking?

- Guns/Ammo have greater demands.....
 - Robustness Trades
 - More Sensitive "Systems" Influences
 - Real Acquisition Costs
 - Industrial Base Readiness

**IT ALL STARTS WITH
ENGINEERING!**

But Watch Out For Engineering Plagues!





*Fiddler
on the
Roof*



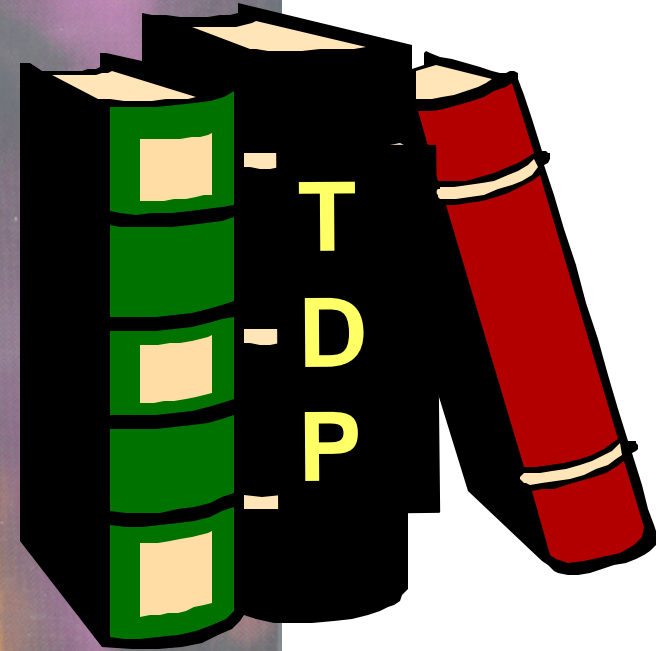
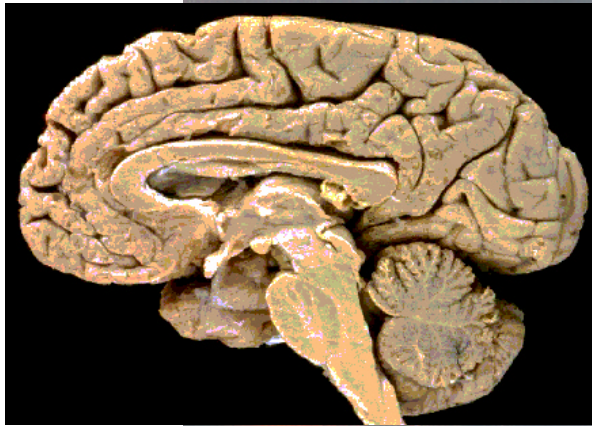
THE THREE BEARS





DONALD SUTHERLAND BROOKE ADAMS LEONARD NIMOY JEFF GOLDBLUM VERONICA CARTWRIGHT

INVASION OF THE BODY SNATCHERS

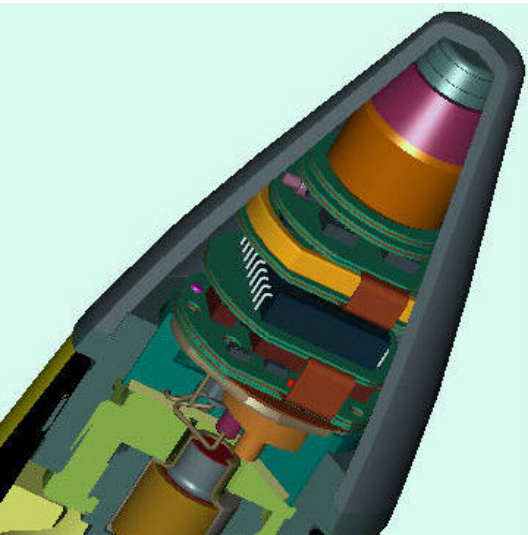


- Industry should challenge the appropriateness and effects of the specifications
- Government should demand consistent adherence to these requirements

A Definition

tech•ni•cal ex•cel•lence (te'ni-kəl ek'sə-ləns) *n.*
Develop a robust design and effectively
manufacture the same every time.

Bursting Ammunition Fuze



OICW



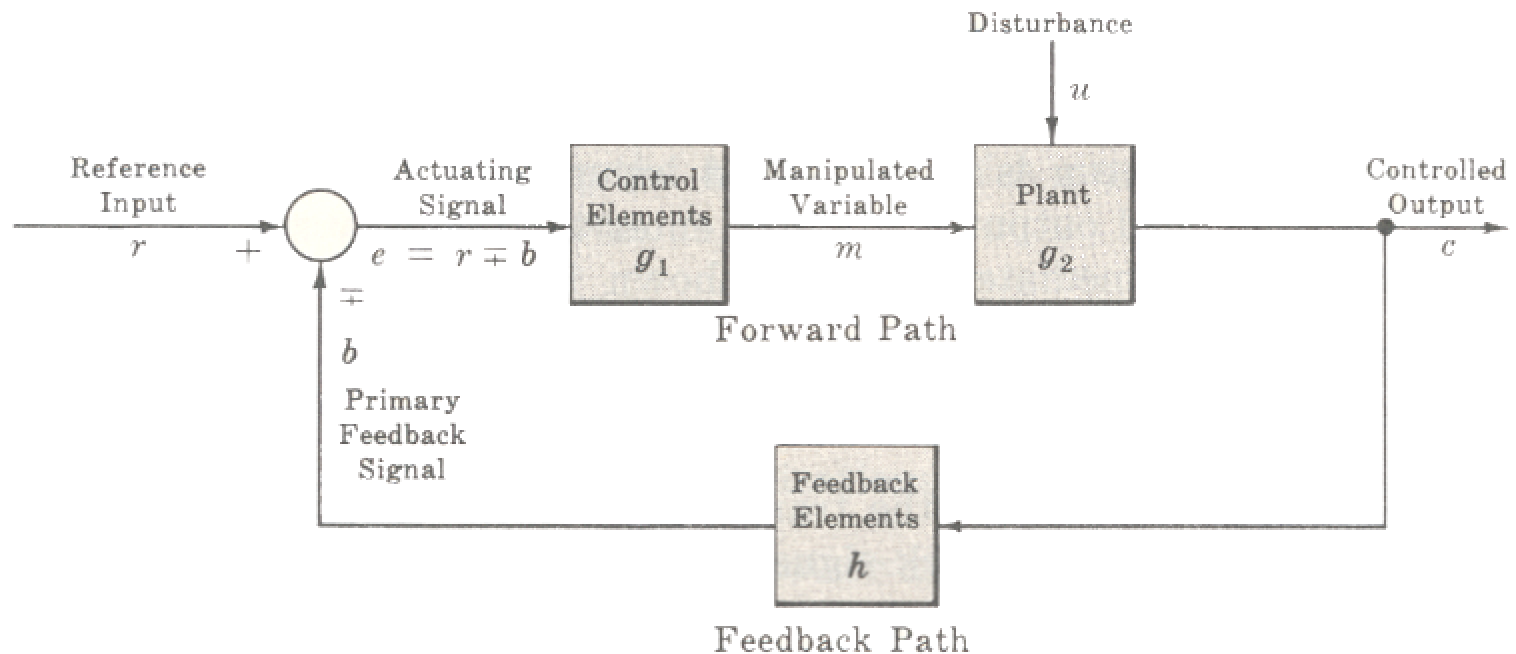
**We Need To Put A
Greater Emphasis On
Margins of Safety....**

i.e. Robustness

Good Engineering Prioritizes Boundary Conditions

Guns & Ammos Are NOT Commodities.....

They Are Systems



The Integrated Program Team (IPT) Approach is an Ideal “Systems” Solution



Bullets &

Lemma

**A weak financial company
will cause extra technical
grief.**

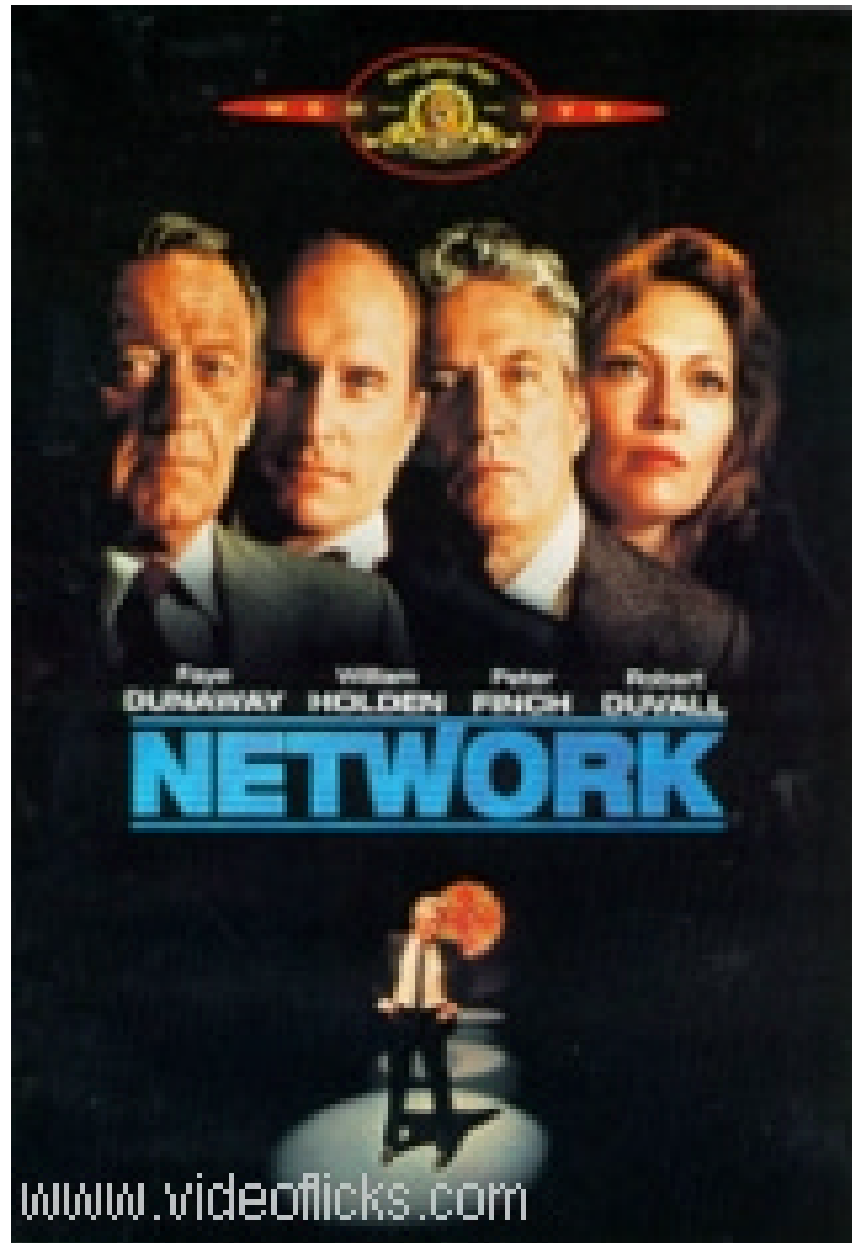


A Suggestion

The Technical community should take an excursion to the “dark side”

Simply _____

- See if the economics are affecting the technical effectiveness of the product
- Assess the healthiness of the supply chain (industrial base)
 - Sam Walton would be hyper-ventilating!



Technology As An Enabler

- Look at the World
 - This Ain't Easy
- Government/Industry Synchronized Plans
- Recruit the Best

Why the Need for a Shift in Thinking?

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