# Expeditionary Logistics Integration

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# *The Speed of Innovation!*

**Biplane**
**Fighter**
**Speed: 186 MPH**

**Messerschmitt Me 262**
**Speed: 541 MPH**

**Man-in-Balloon**
**Spotting**

**Radar/Sonar**

# *Then…and Now….*

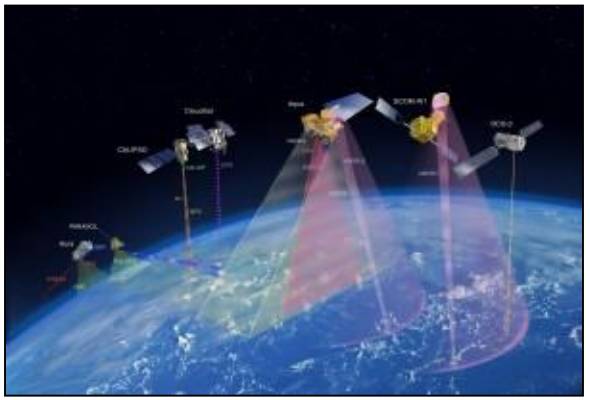
***Three dimensions of warfare…….***

**Air**

**Sea**

**Land**

***Five dimensions of warfare…….***



**Space**

**Air**

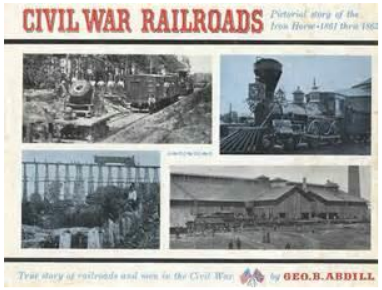
**Sea/Sub-Surface**


**Cyber**

**Land**

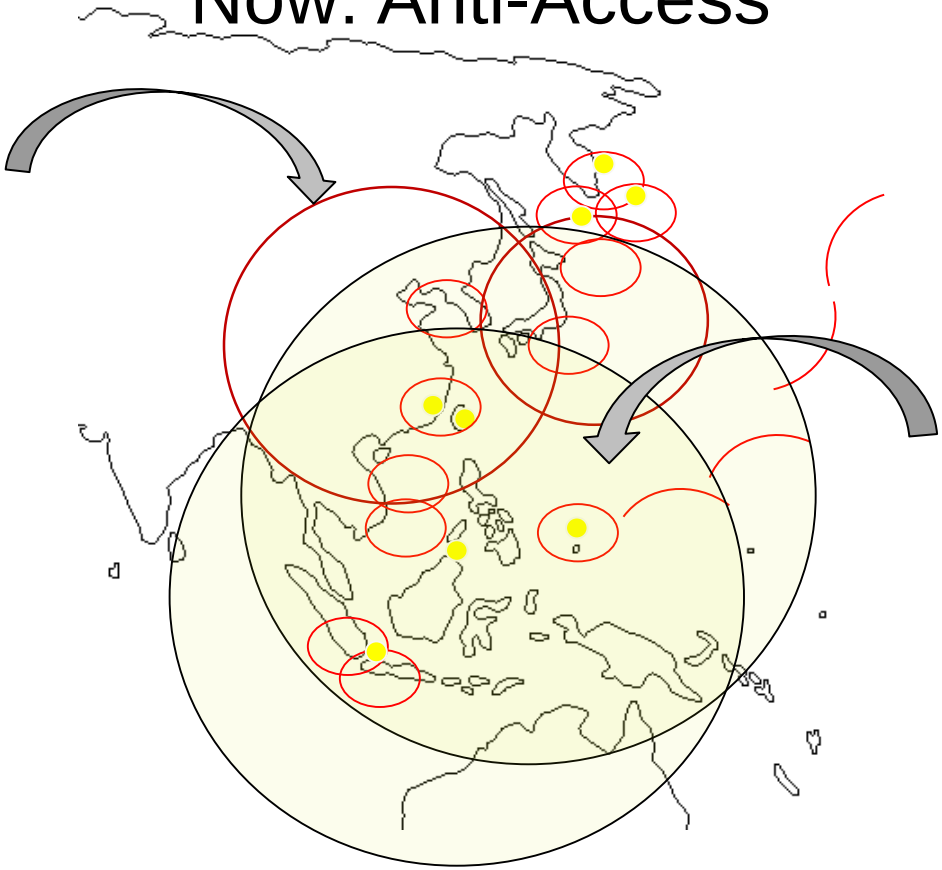
# *The Need for Hybrid Logistics*

## Then: American Way of War



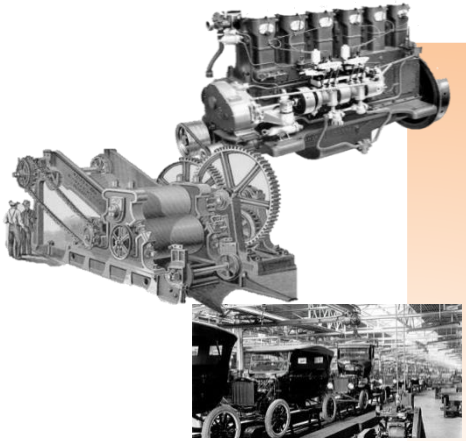


## Now: Anti-Access



- **Contested Air / Sea / Space**
- **Intermittent Air / Sea LOC's**
- **Degraded C4I**
- **Fluid – Dynamic AOR (s)**

# *Maturing Technology: Past & Future*

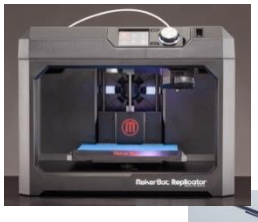


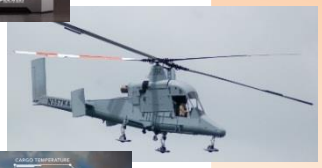
***Maturing Tech: Past***

**Combustion**

**Interoperable Parts**

**Mass Production**





***Maturing Tech: Future***

**Additive Manufacturing**

**Unmanned Platforms**

**Smart Logistics**

# *Naval Logistics Integration and Hybrid Logistics CONOPS*

**Unmanned Logistics Systems (ULS): For Transportation, Medical, and Maneuver**

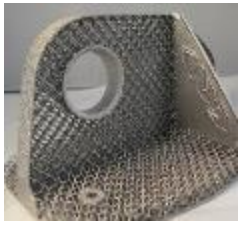
cargo drones | self-driving vehicles | quadrupeds | robotics | autonomy




**Additive Manufacturing (AM/3D Printing): For Maintenance, Supply, Engineering, Medical**

desktop 3d printing | supply chain AM for legacy parts | AM-unique platforms & materials




**Smart Logistics (SmartLog): For Supply, Transportation, Maintenance, Engineering, Medical, …**

internet of things | ubiquitous sensors | advanced analytics | machine learning | big data

blockchain security | mobile computing | lightweight apps | virtual/augmented reality