



# **Battlefield Logistics Operations in the 21st Century**

# Battlefield Logistical Operations – 21<sup>st</sup> Century Comments - Ukraine

**Combat  
Engineer and  
Logistics  
Symposium**

**Mark  
MacCarley  
Major General  
(Ret.) US Army**

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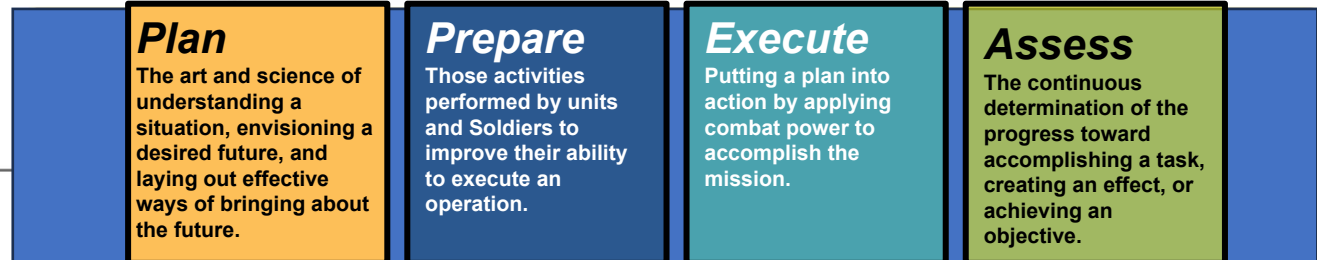
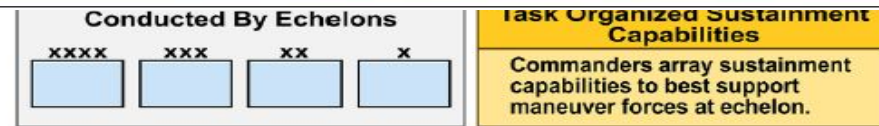
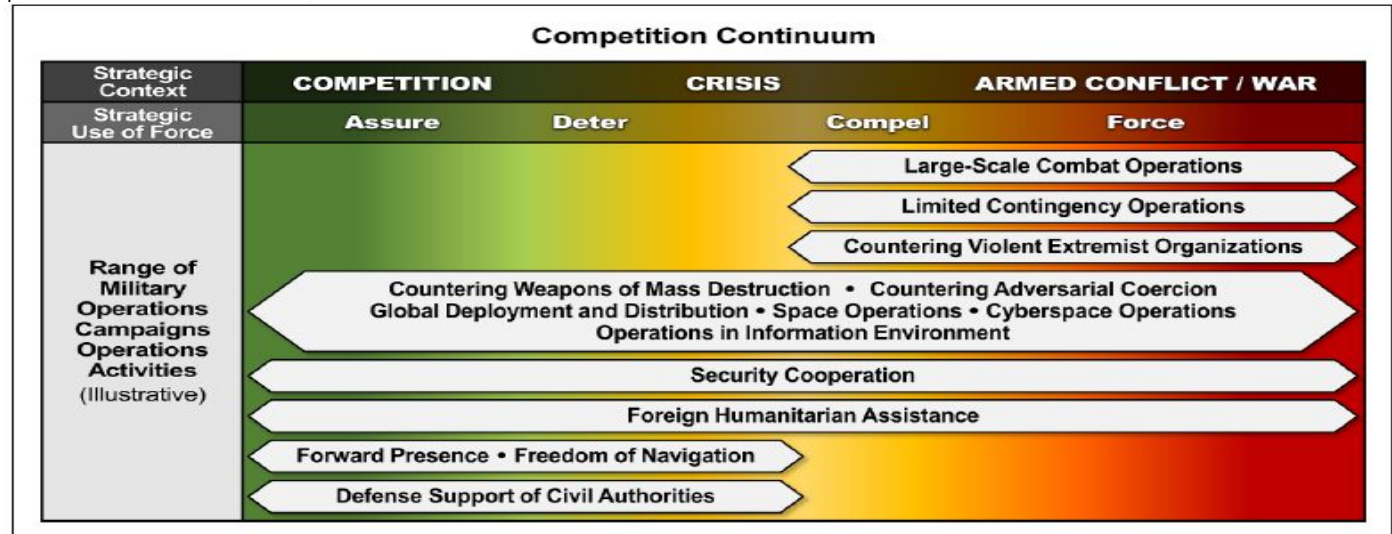




# Understanding Modern Warfare and Logistics Fundamentals

Peer Threats
Characterized By
<ul style="list-style-type: none"> <li>Information Warfare</li> <li>Isolation</li> <li>Systems Warfare</li> <li>Preclusion</li> <li>Sanctuary</li> </ul>

Anticipated Operational Environment
Characterized By
<ul style="list-style-type: none"> <li>Anti-Access Area Denial</li> <li>Contested LOCs</li> <li>Degraded Sustainment Networks</li> <li>Adversary Overmatch</li> <li>Hybrid Threats</li> <li>Multidomain Operations</li> </ul>



# Framework for Analysis: MILITARY REVOLUTIONS

Military Revolution	Implications
	First Revolution
Westphalian System	Revenue generation, banking and taxes for financing wars, and professional militaries
	Second Revolution
French Revolution	National mobilization, levy en masse, and large-scale armies with conscription
	Third Revolution
Industrial Revolution	Mass production, standardization, and large-scale economic exploitation
	Fourth Revolution
World Wars I & II	Combined arms, armored blitzkrieg, carriers, bombers, and jets
	Fifth Revolution
Nuclear Revolution and missiles	Nuclear weapons and intercontinental ballistic missiles
	Sixth Revolution
Information Revolution	Command and control, connectivity and instant global reach, imagery, and cyber levy en masse by violent extremists
	Seventh Revolution
Autonomous Revolution	Autonomous weapons, swarms of robotic vehicles in multiple domains, self-organizing defensive systems, automated weapons, big data analytics, and machine and deep-learning programs



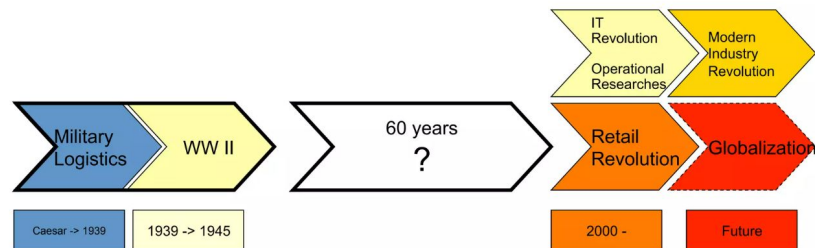
**Russian-Ukrainian War**





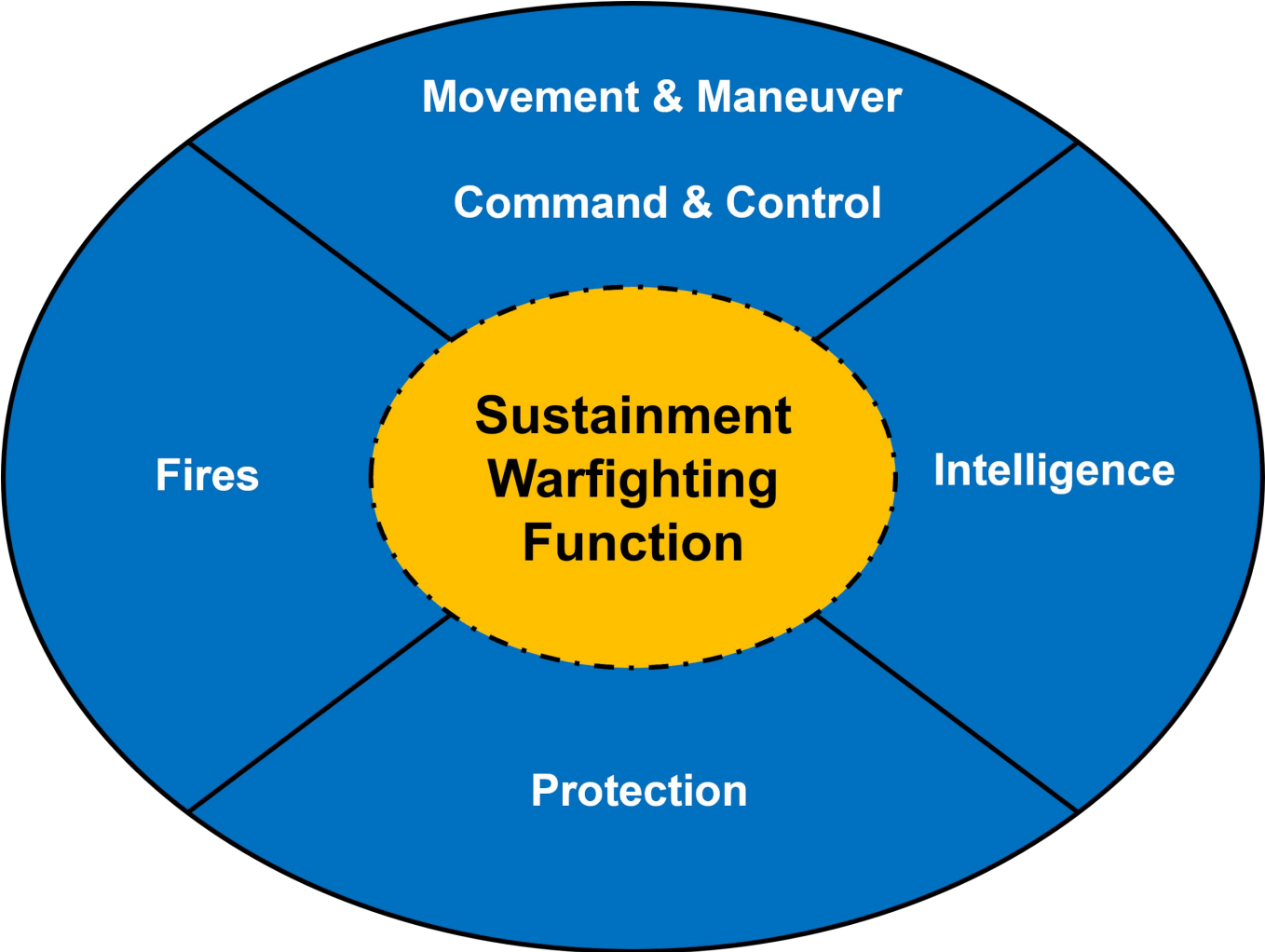
<b>Maneuver formation</b>	<u>U.S. sustainment formation</u>	<u>Russian sustainment formation</u>
<b>Battalion</b>	Company	Platoon
<b>Regiment</b>	Battalion/Squadron	Company
<b>Brigade</b>	Battalion	Battalion
<b>Division</b>	Brigade	Battalion
<b>Corps</b>	Brigade	None
<b>Combined Arms Army</b>	N/A	Brigade

**Fact 1 : A specific history of Logistics in Russia**



NCO Corps, C2, Support Relationships, Distribution Method “Pull vs. Push”, Conscripts vs All volunteer Force, Information Management, LOG OB, Strategic Reserves, Modes, Nodes and Sources,

# Warfighting Function Linkage – Lessons Learned

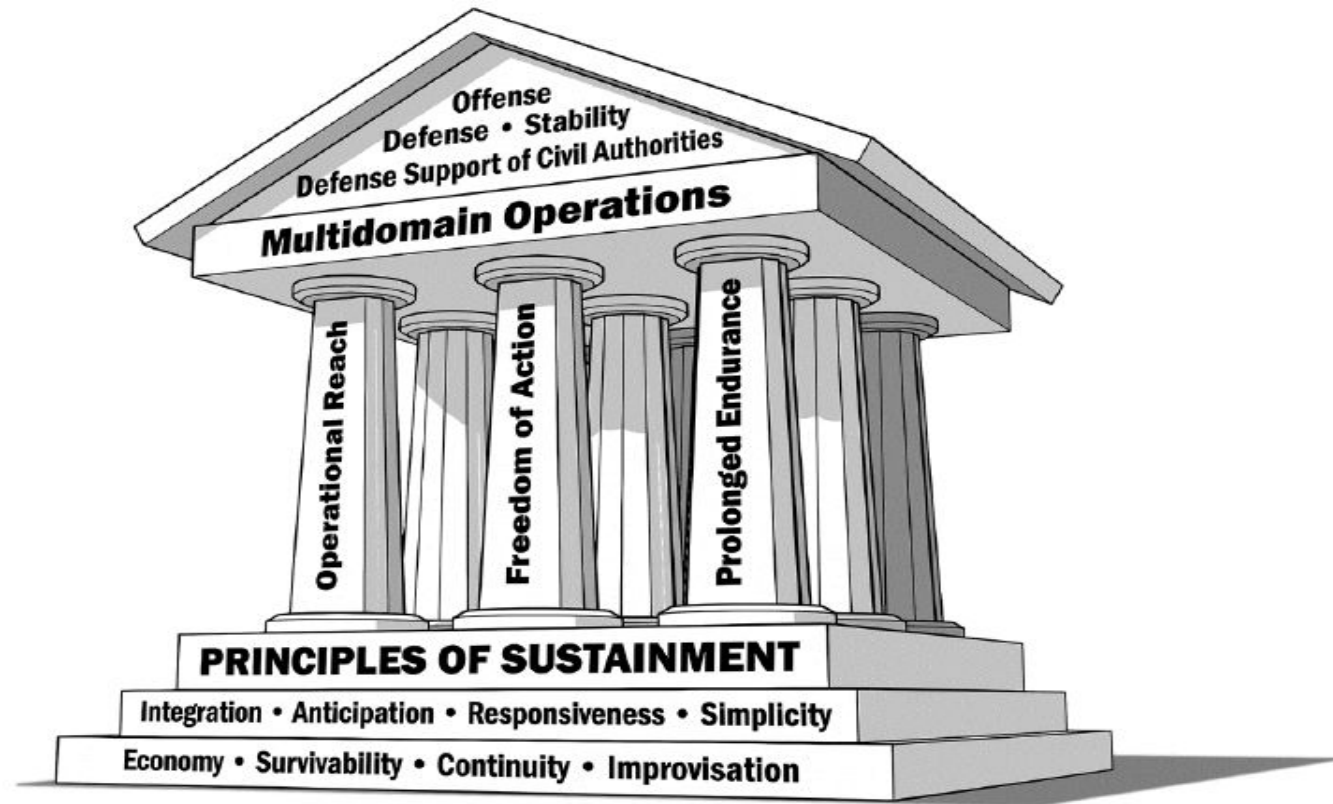


By Executing the Operations Process, the Ukraine has been able to sustain and replenish its units in a timely manner.

# Principles of Sustainment

1-6. The principles of sustainment shown below are essential to maintaining combat power, enabling strategic and operational reach, and providing Army forces with endurance. While these principles are independent, they are also interrelated and must be synchronized in time, space, and purpose.

*ADP 4-0, Sustainment*



# **Simplified Rules for Logistics Operations (1)**

- **Generate to a high level of credibility an inventory of major end items, durable equipment, and spares.**
- **Identify sustainment priorities – requirements - consistent with both current realities and future modernization efforts.**
- **Develop, install, rigorously maintain and police an ERP (Enterprise Resource Planning System) which will continuously provide real-time visibility into inventory levels across all locations and used and at all activities/operations.**
- **Integrate budget, acquisition, and sustainment activities. An example is the mission statement of the US Army Futures Command - The command executes six essential functions in pursuit of military security strategy and capabilities development – future operational environment, research, concepts, experimentation, requirements and integration – with support from industry, academia and Joint and multinational partners. (Cross-Functional Teams)**

# Simplified Rules for Logistics Operations (2)

- **Dependent on time and the operational environment, develop and implement a receiving and storage capability – “Iron Mountain” or “Just in Time Logistics”**
- **Prioritize distribution based upon operational needs or unit readiness requirements.**
- **Implement a resilient multi-modal (if required) distribution system with robust asset visibility tools that feed into the Common Operating Picture**
- **Develop maintenance priorities and implement force structure or contracted capability to do so.**
- **Level excess and establish mechanisms for collection, disposal, and disposition of retired, obsolete, or damaged equipment.**

# Contested Logistics

## Challenges

Near peer adversaries will present challenges in all domains and from the homeland to the theater of operation. New threat capabilities will target sustainment operations, facilities and supply chains.

## Lines of Effort

Overarching themes to achieve sustainment advantage and support the Joint Force. Sustainment must never be the reason maneuver forces culminate on the battlefield.

## Opportunities

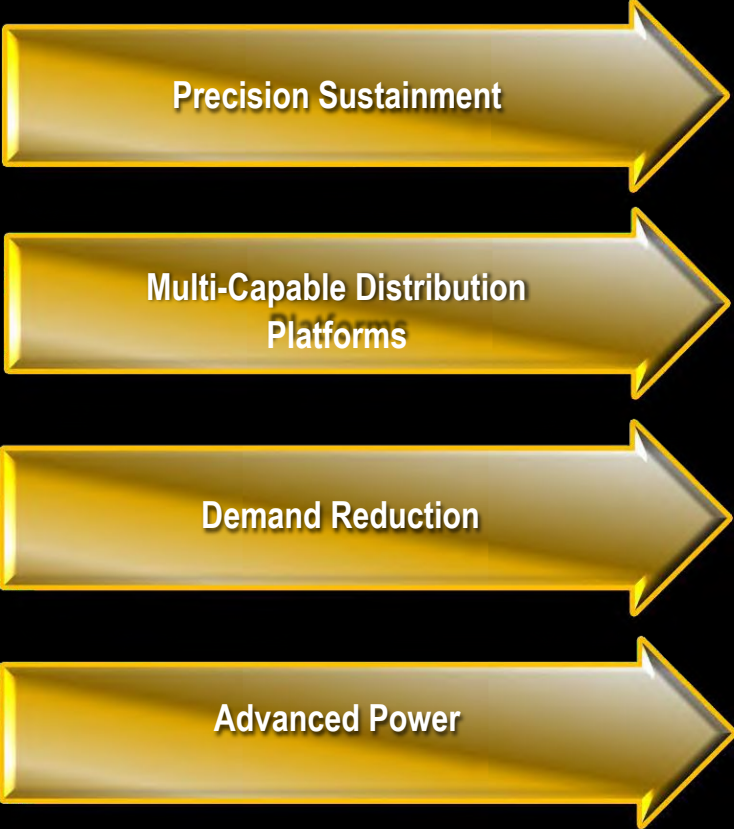
Sustainment is a warfighting function that must operate at the speed of the maneuver forces. Next generation sustainment capabilities will provide enhanced operational reach, better security, and greater flexibility.

### CHALLENGES



- Near-Peer Adversaries
- No Sanctuary
- Cyber Attacks
- Communication Network Attacks
- Loss of Modes, Nodes & Capabilities
- Fort-to-Port and Port-to-Port Attacks
- Logistics Operations Targeted Globally
- Drones
- Sabotage
- Targeted Surveillance

### LINES OF EFFORT

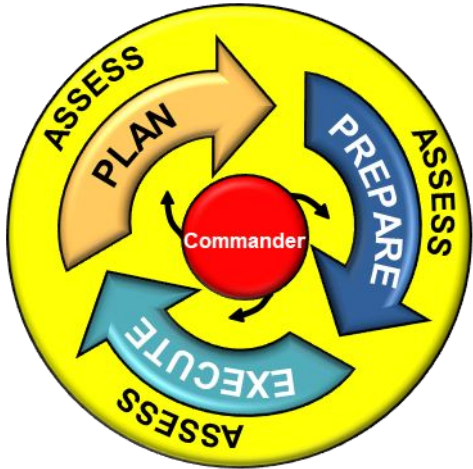


### OPPORTUNITIES

- Autonomous Resupply (Air, Ground, Water)
- Cyber Protection
- Secure Networks
- Artificial Intelligence
- Resilient Installations
- Enhanced Vehicle Ranges
- Reduced Supply Demands
- Field Power Generation
- Predictive Logistics
- Precision Sustainment
- Secure Supply Chain
- Modernized Industrial Base
- Advanced Manufacturing
- Redundant Capabilities
- Afloat Stocks
- Allies and Partners
- Data Analytics
- Watercraft Operations

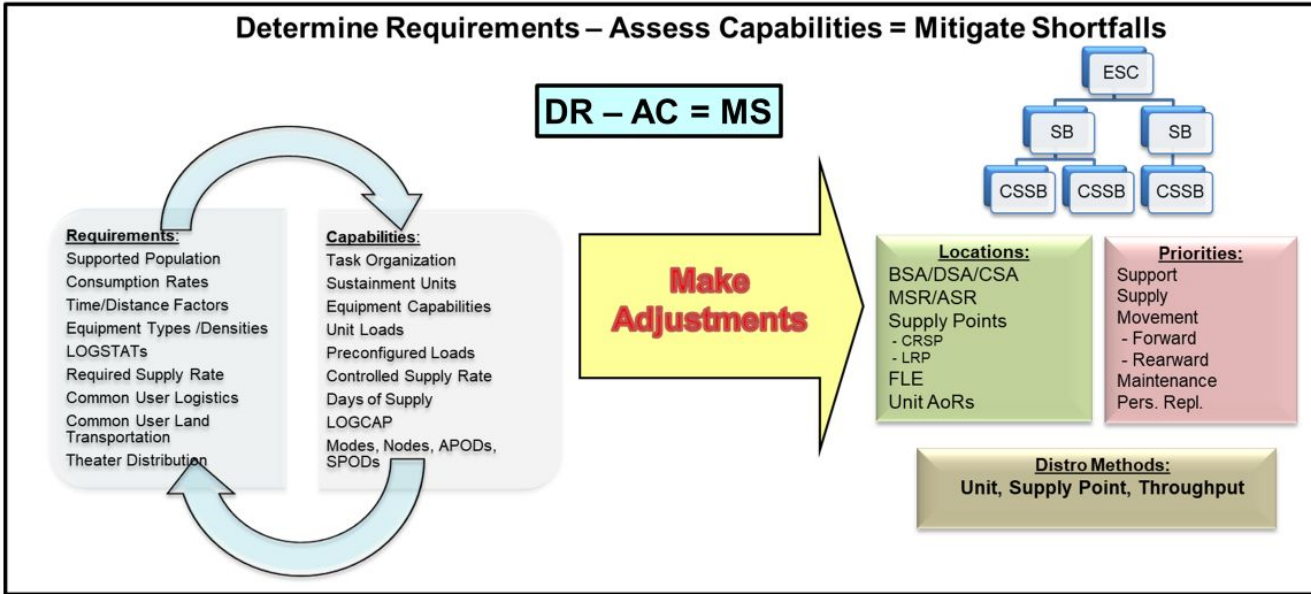
# Initial Planning

## Requirements – Capabilities – Execution

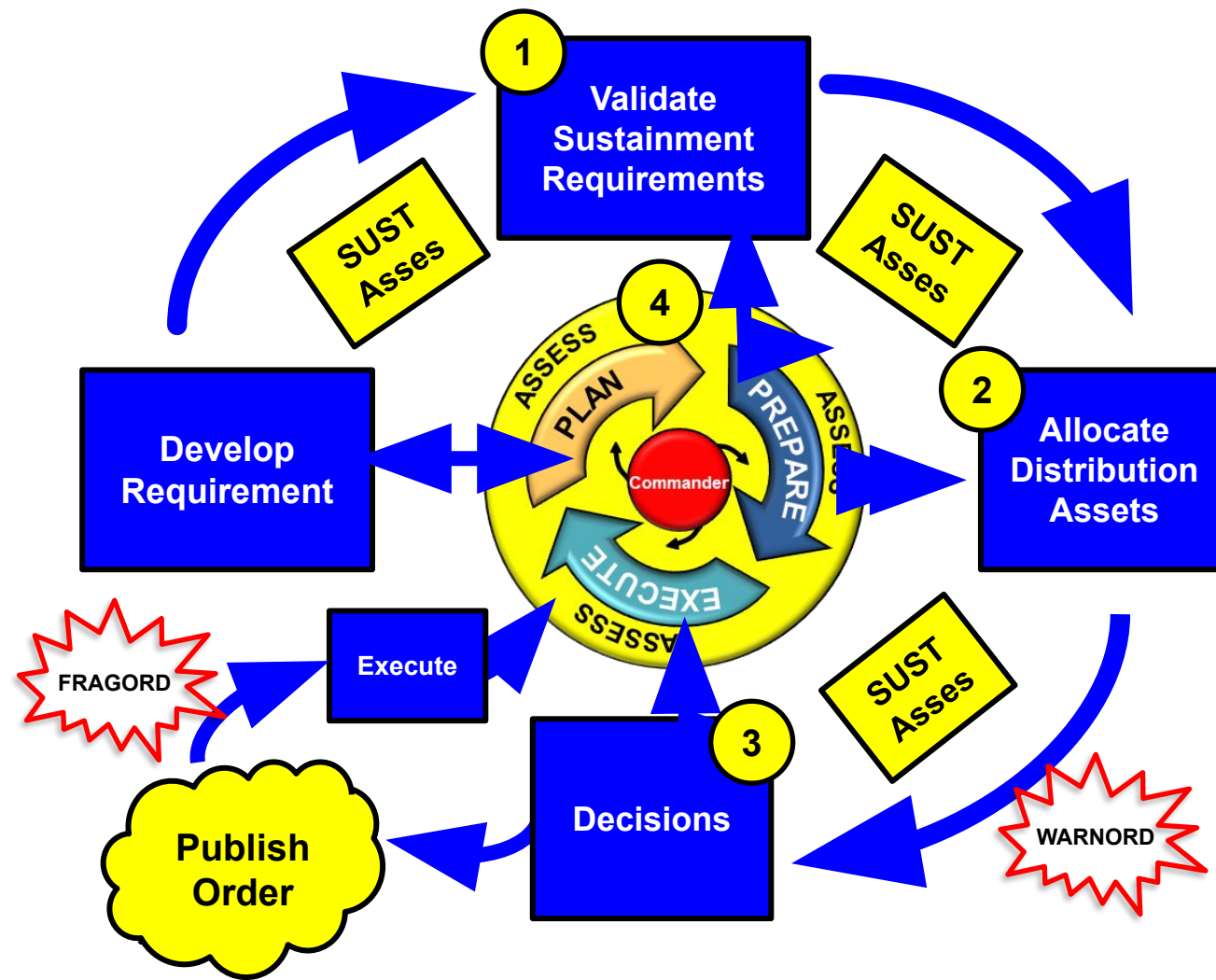


**Plan**  
The art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing the future about

**Assess**  
The continuous determination of the progress toward accomplishing a task, creating an effect, or achieving an objective.



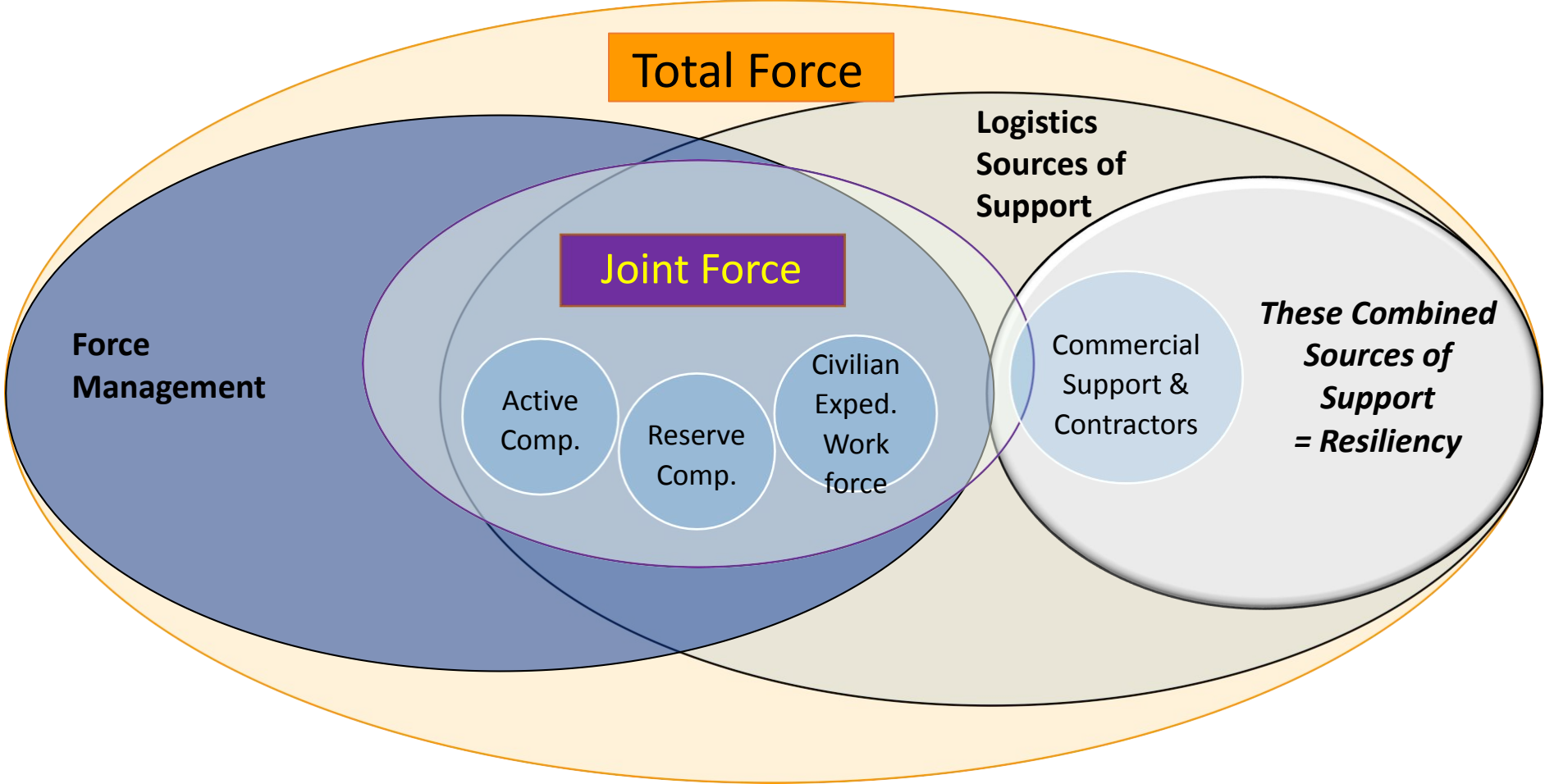
# Sustainment Integration – “A Way”



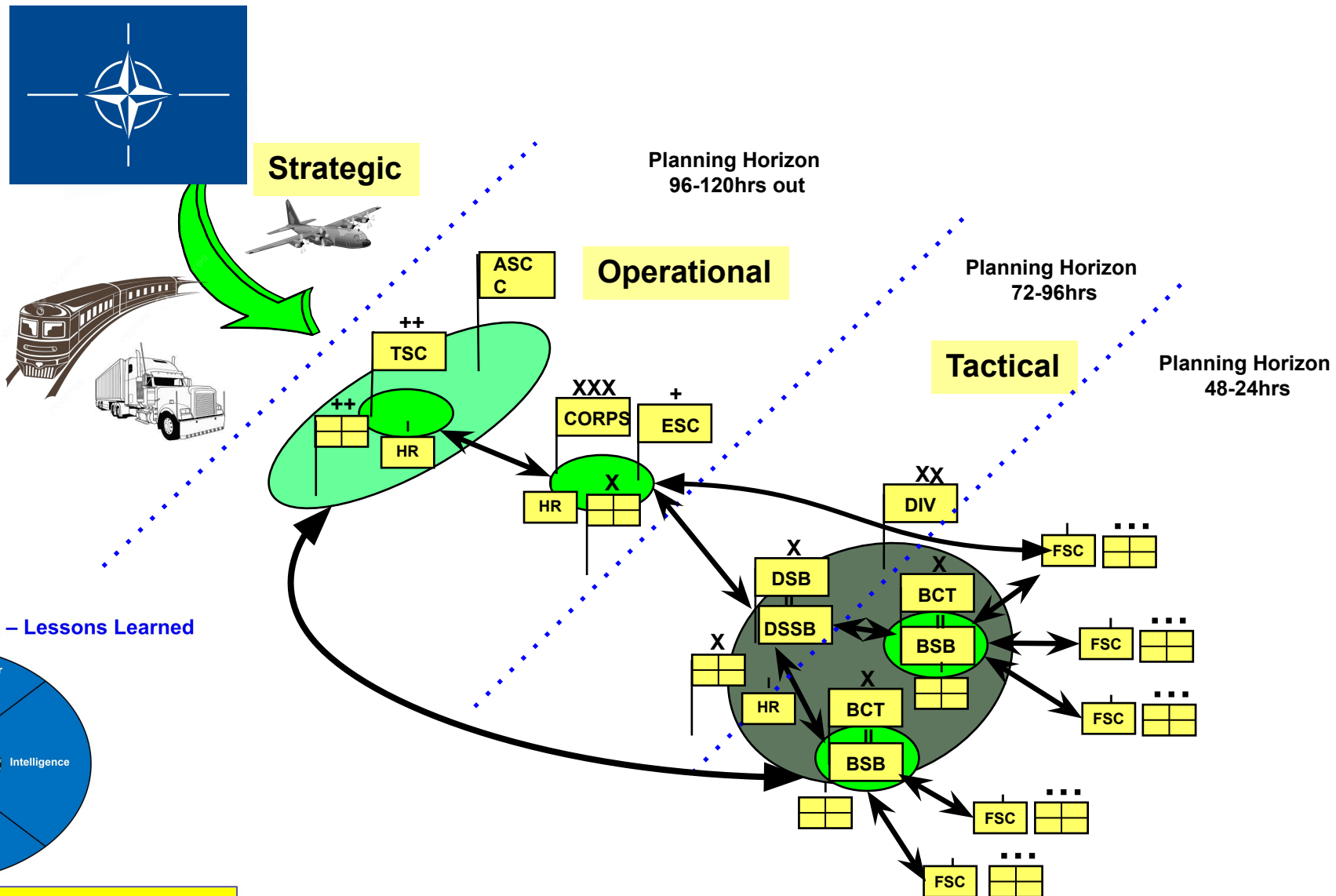


# Finite Capabilities and Building Resilience

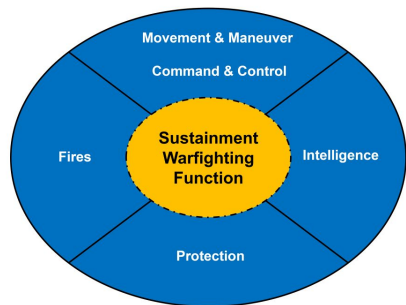
*Resourced-in – Informed Planning – Sources of Support*



# Sustainment Operational Preparation of the Environment



## Warfighting Function Linkage – Lessons Learned



By Executing the Operations Process, the Ukraine has been able to sustain and replenish its units in a timely manner.

# Framework for Analysis: CHANGES IN THE STRATEGIES

FROM RUSSIAN BLITZKRIEG  
(intent to capture Kyiv  
in 3 days)



TO RUSSIAN WITHDRAWAL in  
the North and defeat near  
Kharkiv and Kherson





# Lessons from Russo-Ukrainian War

## Diplomacy

- Ineffectiveness of global & regional security architecture (UN, OSCE etc.)
- Essential value of Unity of the West/Transatlantic link
- Inadequate reaction of some NGOs
- Moderate indifference of the Global South
- Underestimated international influence of RUS

## Information

- State leadership level STRATCOM
- Decentralized messaging from the battlefield
- Counterpropaganda activities/Sanctions against RUS media in the West
- Creative use of social networks
- Large-scale of RUS information wars targeting multiple audiences (UKR, West, Africa, Asia, domestic)

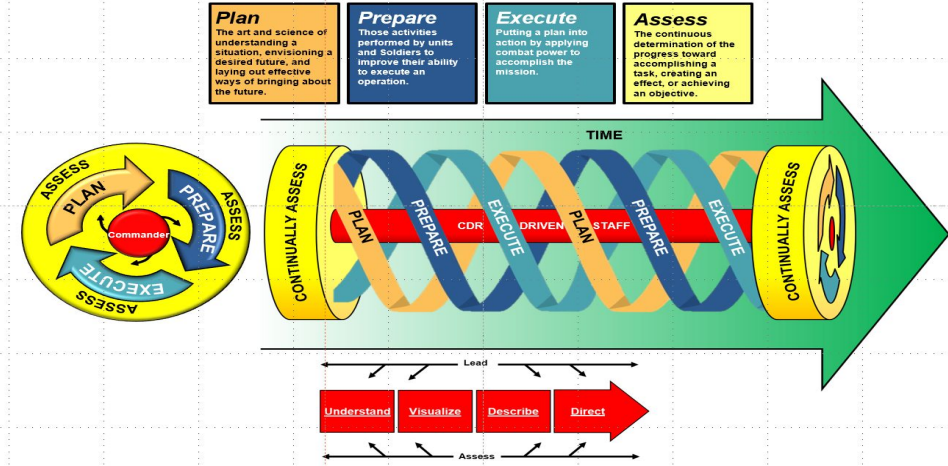
## Military

- Mission Command**
- Transformation of Fires
  - Warfare Development
  - Integration of Operations
  - Information Support

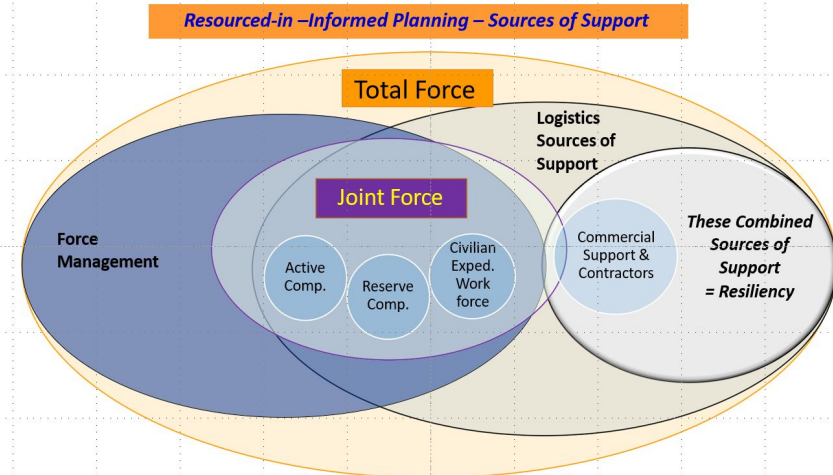
## Economy

- Sanctions make a difference, but many of them have delayed effects
- Denying RUS Fossil Fuel and Raw Material exports is a key
- Advanced Western technology is essential for RUS Economy and Defence Industry

## The Operations Process



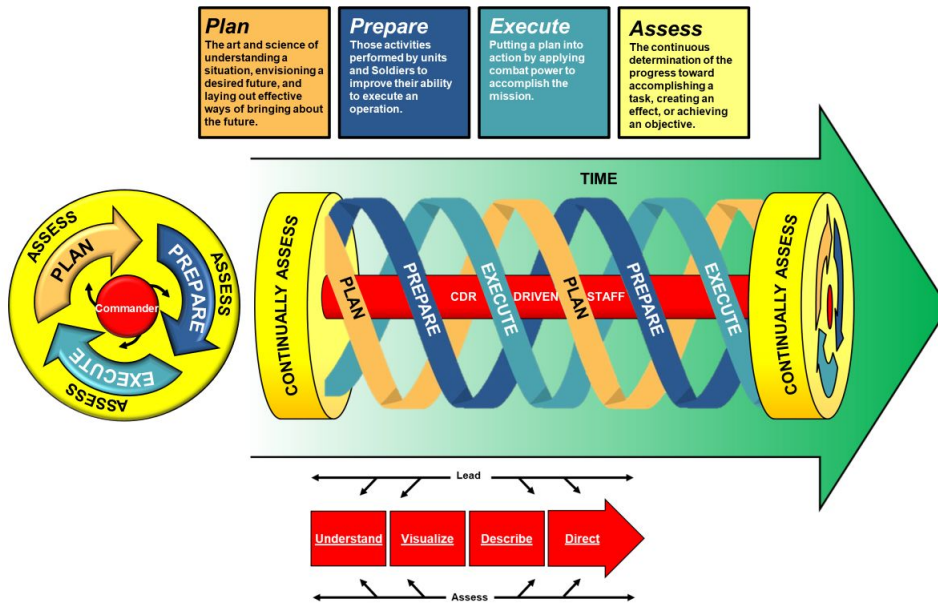
## Finite Capabilities and Building Resilience



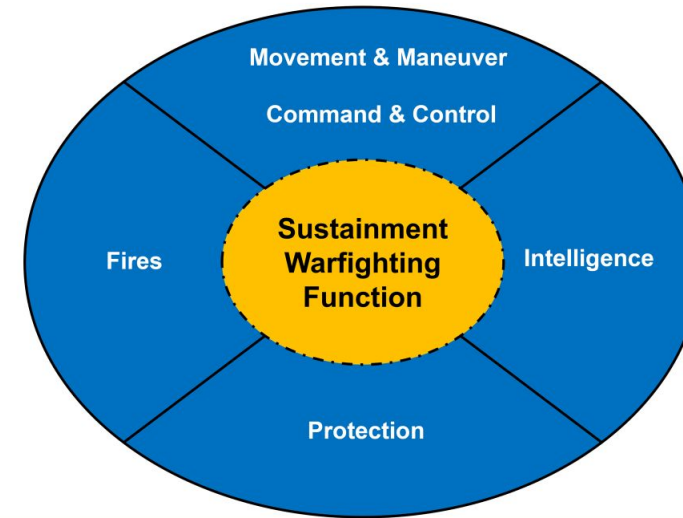
# Take Aways

By Allowing Ukraine to Maintain its Command & Control and Organizational Structure while NATO enabled Operations through training of the operations process, and the equipping and sustaining function, Ukraine demonstrated ability to effectively Integrate the Warfighting Functions in support of operations and innovation.

## The Operations Process



## Warfighting Function Linkage – Lessons Learned



By Executing the Operations Process, the Ukraine has been able to sustain and replenish its units in a timely manner.

# CONCLUSION

*Dilemmas*

**NEW  
TECHNOLOGIES**

**NEW DOCTRINES**

**NEW ARMED FORCES  
STRUCTURES**

**Combined Effect**

**CHANGE THE CHARACTER OF WAR**