



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting

# Mobilizing the Defense Industrial Base in the Event of Major Conflict

John G. (Jerry) McGinn, Ph.D., Sean L. Cassidy, D.M.

May 09, 2024

# Overview



- **Objective:** Examines how the U.S. can mobilize its defense industrial base in the event of major conflict
- **Context:** Increasing tensions in the Pacific and ongoing support to Israel and Ukraine continue to strain the capacity of the U.S. defense industrial base
- **Case Studies:** Paper examines mobilization during World War II, the Mine-Resistant Ambush Protected (MRAP) vehicles experience in Iraq and Afghanistan, and providing support to Ukraine in war against Russia
- **Elements and a Model:** Identifies elements of mobilization and establishes a model for how these mobilization elements can work together to develop capabilities
- **Recommendations:** Concludes with a series of recommendations to maximize the defense industrial base's ability to mobilize in major conflict



Research Question: How can DoD truly mobilize the industrial base to rapidly scale production to support National Defense Strategy (NDS) objectives?

# WWII Mobilization



- **Preparation (1938-1939):** Initiated by President Roosevelt with increased aircraft production, naval expansion, and rearmament. Key legislation included the Fleet Expansion Act and the Air Corps Extension Act.
- **Expansion (1940):** Triggered by German advances in Europe. Roosevelt called for increased military spending and established GOCO facilities. The Lend-Lease Act facilitated aid to allies.
- **Full-Scale Mobilization (Post-Pearl Harbor, 1941):** The attack on Pearl Harbor thrust the U.S. into full-scale mobilization. The War Production Board (WPB) was established in 1942 to coordinate industrial production.
- **Focus on Shipbuilding:** Enjoyed bipartisan support due to alignment with America's maritime identity. The WPB fostered collaboration between government, industry, and labor to maximize output.
- **Departure from WWI:** Unlike WWI, the U.S. began mobilization before formally entering WWII, allowing for a more structured approach and swift transition into a wartime economy.
- **Public Support:** FDR effectively navigated isolationist sentiments until the Pearl Harbor attack consolidated public opinion in favor of the war effort, leading to an upsurge of patriotism across all segments of society.



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting



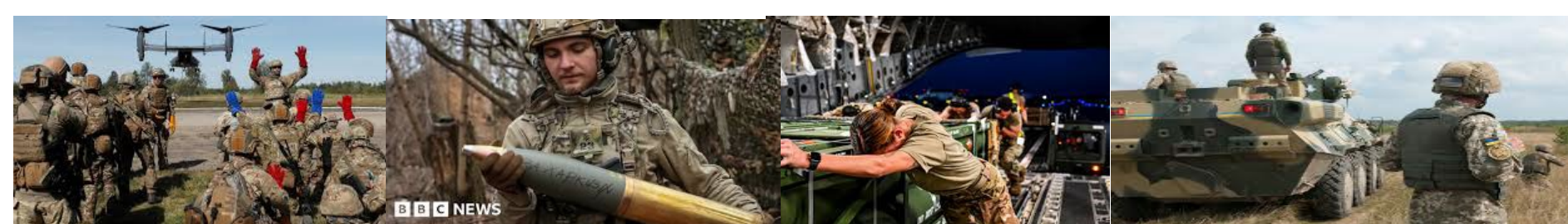
# Mine-Resistant Ambush-Protected (MRAP) Vehicle

- **Purpose:** The MRAP program was launched in response to the escalating threats from Improvised Explosive Devices (IEDs) in Iraq and Afghanistan
- **Leadership:** The initiative was spearheaded by Secretary of Defense Bill Gates, emphasizing the need for rapid production and deployment of MRAPs
- **Simplified Designs:** The MRAP vehicles started with extremely simplified requirements and utilized existing foreign designs to speed development and production
- **Joint Urgent Operational Need Statement (JUONS) Pathway:** Emphasized by Gates, the JUONS pathway enabled rapid acquisition



# U.S. Industrial Base Support for Ukraine

- **Spike in Support for Ukraine:** U.S. lethal aid to Ukraine dramatically increased after Russia's 2022 invasion
- **Defense Industrial Base Challenges:** Rapid usage of munitions exposed production capacity issues
- **Acquisition Practices:** DoD acquisition processes add complexity and time
- **Supply Chains:** Production bottlenecks highlighted supply chain challenges exposed during COVID
- **Working with Allies and Partners:** U.S. allies contributing significantly but also struggling with increasing capacity
- **Public Support for Ukraine:** Maintaining U.S. public support has been challenging



# Elements of Mobilization

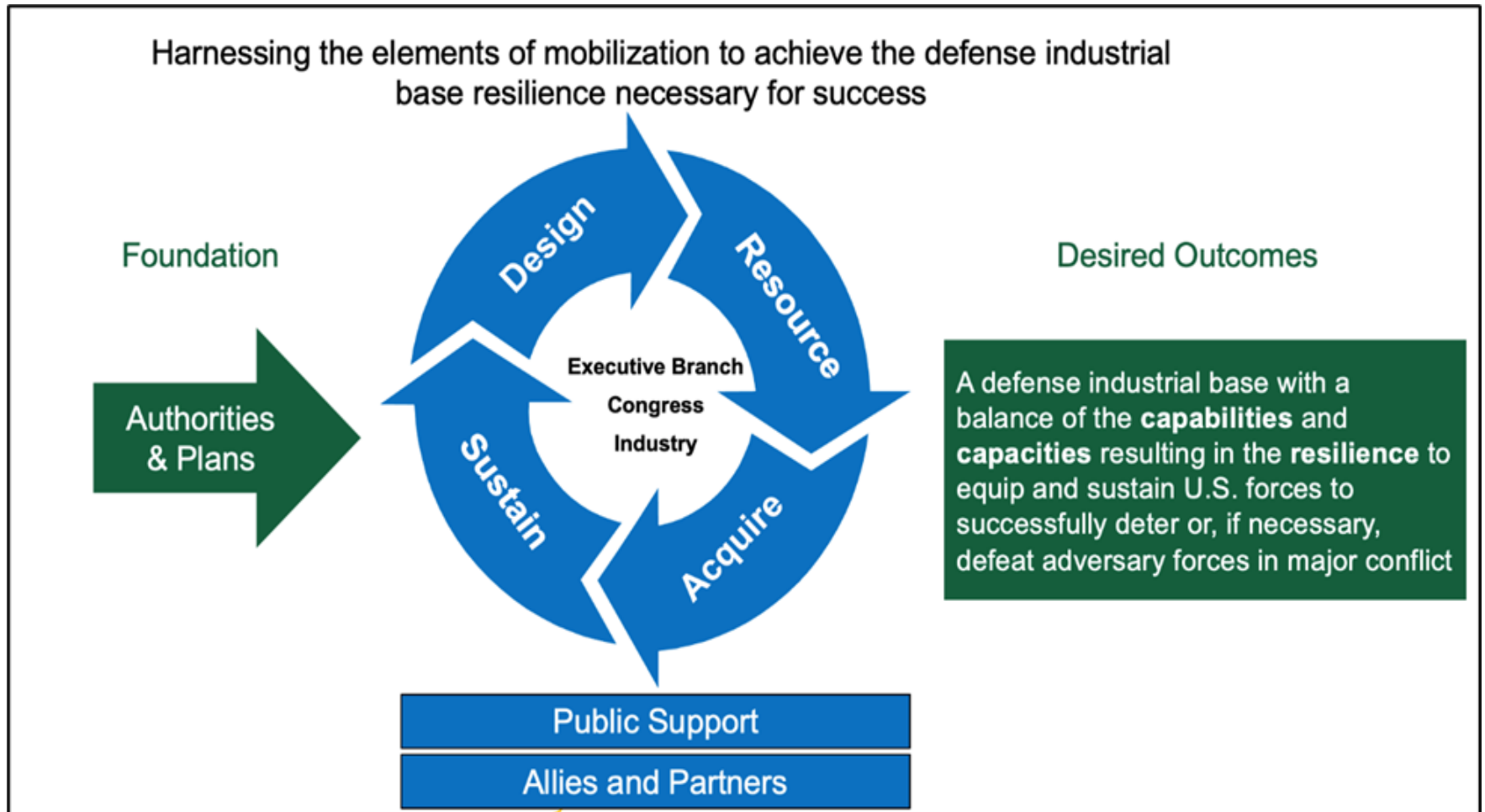
Building on these cases and an examination of the mobilization literature, we have identified seven elements that make up how the Executive and Legislative Branches, working with industry partners, mobilize to meet critical national security crises.

Element	Purpose	Key Outcomes
<b>Authorities</b>	Enable USG and industry to organize and execute	<ul style="list-style-type: none"> <li>- Running start</li> <li>- marshal all elements of national power</li> </ul>
<b>Design</b>	Determine what we are going to buy	<ul style="list-style-type: none"> <li>- Simplified requirements</li> <li>- Designing for production</li> </ul>
<b>Resourcing</b>	Determine how much we are going to buy and in what manner	<ul style="list-style-type: none"> <li>- Consensus on funding levels</li> <li>- Flexibility in execution</li> </ul>
<b>Acquisition</b>	Develop and produce what we buy	<ul style="list-style-type: none"> <li>- Max industry involvement</li> <li>- Rapidly scale production</li> <li>- Contracting that enables speed and surge</li> </ul>

Element	Purpose	Key Outcomes
<b>Sustainment</b>	Deliver, sustain, and replace U.S. forces and systems	<ul style="list-style-type: none"> <li>- Secure supply chains</li> <li>- Succeeding in contested logistics environments</li> <li>- Robust stockpiles and sourcing capabilities</li> </ul>
<b>Public Support</b>	Gain and keep public support	<ul style="list-style-type: none"> <li>- Favorable political climate</li> </ul>
<b>Allies and Partners</b>	Get a little help from our friends	<ul style="list-style-type: none"> <li>- Co-development, co-production, FMS/DCS</li> </ul>

# Mobilization Model for Major Conflict

These elements of mobilization are distinct but obviously need to collaborate to achieve success. This model illustrates how these mobilization elements can work together to achieve the defense industrial base actions necessary for mobilization



# Recommendations for Strengthening Each Mobilization Element

- Authorities
- Design
- Resourcing
- Acquisition
- Sustainment
- Public support
- Allies and partners

# Authorities



- **Government's Ability to Mobilize Industrial Base:** Mobilization starts with legal authorities and agency plans and policies. These facilitate production, reduce supply chain bottlenecks, and streamline the development of capabilities and capacities to meet the country's needs in a crisis.
- **Office of Production Management and War Production Board:** The creation of these entities helped FDR's Administration organize government and industry for World War II mobilization.
- **Use of Defense Production Act (DPA) in MRAP Case:** The DPA was used in various ways to shortcut bureaucratic processes to get the MRAP produced and fielded.
- **Multi-year munitions procurement for Ukraine:** Section 1244(c) of FY 2023 NDAA gave the DoD authority for multi-year procurement of numerous munitions in Ukraine, sending a stronger demand signal to industry to support munitions production for Ukraine. This authorization was eventually accompanied by funding in the FY 2024 appropriations approved in March 2024.
- **Strengthening Legislative Authorities:** Overall, our legislative authorities are strong, but there are opportunities for strengthening their uses, coupled with agency planning, that will strengthen the nation's ability to respond to crises.



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting



# Authorities - Recommendations for strengthening

- **Keep the Defense Production Act (DPA) Focused on “Defense”:**
  - Use the DPA exclusively for essential defense and national security issues
  - Address threats from pacing competitors like China
- **DPA Title I – Distribution and Allocation:**
  - Update executive orders and regulations to better orient DPA policies and practices for future national security challenges
- **DPA Title III – Expansion of Industrial Capacity and Supply:**
  - Delegate DPA determination authority in the upcoming reauthorization from the President to the Secretary level of those agencies with Title III authority
  - Use purchase commitments to create a guaranteed demand signal for an industrial capability over time
- **DPA Title VII – Additional Provisions:**
  - Establish voluntary agreements to prepare stand-by industrial capacity for potential surge use during conflicts
  - Create an active unit of the National Defense Executive Reserve (NDER)



**DEFENSE  
PRODUCTION  
ACT**



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting



# Design



- **Rapid Design Evolution in WWII:** Notable examples include the Liberty and Victory ships, tanks, and the B-29 Superfortress bomber
- **Mature Designs Key:** Existing foreign designs greatly expedited MRAP development, while design changes in the Navy Frigate have delayed production
- **Ukraine Munitions Production Challenges:** Intricate designs of Javelin and Stinger require a high degree of precision and expertise, which can lead to lengthy production timelines
- **Complex Requirements Process adds Time and reduces Flexibility:** The Joint Capabilities and Development System (JCIDS) process prolongs program development and transitioning Joint Urgent Operational Needs (JUONs) to programs is difficult due to existing service priorities



# Design - Recommendations for strengthening

- **Design for Production:** Acquisition officials need to focus on designing systems for producibility. USAF PEO Weapons is pursuing such an approach with its Enterprise Test Vehicle risk reduction effort. Digital engineering, modular open systems approaches (MOSA), and similar methods will be critical for production-oriented approach to design.
- **Dramatically Simplify Requirements Processes:** An outcome-oriented focus must drive future capability design. This approach mirrors the MRAP experience and indicates that DoD needs a new approach to requirements for mobilization and beyond.



# Resourcing

- **Importance of Resources:** Resources are essential to mobilization. The astronomical per capita dollars spent during WWII, the extraordinary funding and reprogramming efforts to acquire and field the MRAP, and the rapid bipartisan support for COVID supplemental bills were critical to meeting the exigencies of these situations.
- **Challenges with Resourcing:** Difficulties principally come with how DoD, working with Congress, programs, budgets, and executes funding. This is governed by the Planning, Programming, Budgeting, and Execution (PPBE) process and the annual budgeting cycle.
- **Overcoming Challenges:** These challenges can selectively be overcome with strong Departmental leadership, as demonstrated in the MRAP case, but PPBE process overall inhibits the flexibility in execution required in mobilization. The Congressional Commission on PPBE Reform released their final report in March 2024.



# Resourcing - Recommendations for strengthening

All PPBE Reform Commission Recommendations deserve close consideration, but three are particularly relevant for mobilization:

- **Transform the Budget Structure:**
  - Move to a new Defense Resourcing System
  - Aim for a more flexible and agile execution process
- **Review and Consolidate Budget Line Items (BLI):**
  - Consolidation will increase DoD's ability to adjust rapidly to changing circumstances
  - Inject innovation or adopt new technology to address changing threats
- **Encourage Improved In-Person Communications b/t DoD and Congress:**
  - Increased in-person updates and execution reviews
  - Essential to scale and expedite efforts when necessary



# Acquisition



- **Arsenal of Democracy took time:** Extraordinary performance during WWII, but it took two years to accelerate production
- **MRAPs and COVID demonstrate that acquisition system can move fast:**
  - In under three years from the government's proposal request, 16,204 MRAP vehicles were manufactured
  - U.S. Government COVID obligations went from less than \$5 million per day to over \$200 million per day in the first month of COVID, and over \$40 billion within seven months
- **Ukraine Case demonstrated limits of current acquisition approach:** Acquiring munitions and major defense systems prioritizes efficiency and cost savings over production, which significantly hampers the ability to expand and scale production

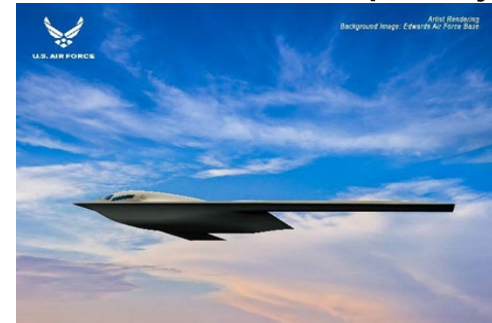


**GEORGE MASON UNIVERSITY**  
Costello College of Business  
Greg and Camille Baroni Center for Government Contracting



# Acquisition - Recommendations for strengthening

- **Prioritize Open Systems Approaches:**
  - Continue use of continuous competition and modular open systems approaches (MOSA)
    - Example: AM General's 2023 win on the Army's Joint Light Tactical Vehicle (JLTV) recompetete contract
- **Maximize Use of Unmanned and Attritable Systems:**
  - Increase the focus on unmanned and autonomous systems to scale production and build capacity
- **Pursue Second Sourcing Where Possible:**
  - Second sourcing maintains additional industrial capacity and reduces costs
  - DoD needs to relook second sourcing as a strategy for additional production capacity in mobilization
- **Contract for Speed and Surge:**
  - Increase the use of follow-on production Other Transactions (OT) Agreements
  - Establish surge CLINS in program solicitations to create latent capacity by contracting for advance design and planning work for on-call capacity



# Sustainment

- **Contested Logistics:** A major priority for DoD, especially given the experience in Ukraine and potential conflict in East Asia.
- **Product Support Planning Cycle:** DoD focusing on sustainment planning upfront in the product support planning cycle
- **Supply Chains:** Supply chains have been a major focus for DoD and industry, particularly since COVID
  - **EO 14017:** Numerous supply chain illumination initiatives and investments coming from EO 14017 have prioritized DoD actions in recent years



# Sustainment - Recommendations for strengthening

- **Create a SBIR-like Tax for Second Sourcing:** A program tax similar to that used for Small Business Innovation Research could enable the wider use of second sourcing of parts to reduce supply chain bottlenecks
  - DoD could work with Congress in the FY25 NDAA to establish a pilot effort to address the challenges of establishing, qualifying, and maintaining a second source
- **Model Surge Requirements:** Building out sustainment models will be critical to establish the needs and contract for the capacity necessary to sustain our forces in any major contingency
- **Grow Overseas Sustainment Capacity:** Given the tyranny of distance, DoD needs to establish facilities in theater to repair and replace systems during conflict. Existing facilities in Japan and Italy for the F-35 program are a great start and new facilities for submarines and other initiatives could be established under AUKUS in Australia



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting



# Public Support

- Getting and maintaining public support is essential to mobilization efforts
- **WWII Case:** FDR calibrated his mobilization efforts to meet the American domestic political environment
  - FDR seized the opportunity to start mobilizing navy shipbuilding in 1938 when domestic Congressional interests supported its development
  - FDR used the Lend Lease program to get equipment to Europe in the face of a skeptical Congress
  - The Japanese attack on Pearl Harbor led to the all-out acceleration of the mobilization effort
- **MRAP Case:** Secretary Gates' role helped maintain Congressional and public support throughout its development and deployment
- **Ukraine Case:** Maintaining public support has become increasingly challenging due to growing domestic political challenges



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting



# Public Support - Recommendations for strengthening

- **Leadership as a Force Multiplier:** Leadership plays a pivotal role in the success of mobilization efforts at all echelons. The importance of consistently communicating the rationale and advantages of mobilization cannot be overstated.
- **Articulate the Tangible Benefits of Mobilization:**
  - **Impact on Domestic Facilities and Firms:** The positive effects of mobilization on domestic facilities and firms are well-documented and should be emphasized
  - **Industrial base benefits of backing Allies and Partners:** Articulate the benefits that foreign assistance brings to the U.S. defense industrial base
  - **Mitigating Political and Public Skepticism:** These concerted efforts will aid in alleviating some of the political and public skepticism that can surface in the course of mobilization efforts



# Allies and Partners

- **U.S.-based production** is heavily involved in mobilization efforts, but the capacity of our allies and partners is crucial due to limited U.S. manufacturing capacity
  - e.g. The expansion of 155mm munitions production to support Ukraine involves U.S., Polish, Korean, and Indian-based firms, demonstrating the importance of **international cooperation**
- Cooperative efforts like the F-35 Final Assembly and Check Out facilities in Japan and Italy, and U.S. investments in Poland, create additional capacity in potential operational theaters
- Our treaty allies contribute valuable manufacturing, engineering, and defense components to our alliance systems, making them vital contributors to our alliance system



Costello College of Business  
Greg and Camille Baroni Center  
for Government Contracting



# Allies and Partners - Recommendations for strengthening

- **Prioritize International Collaboration:** Encourage and promote international industrial collaboration across the defense acquisition system through DoD leadership guidance, avoiding U.S.-only requirements development, and including international collaboration in performance evaluations for acquisition officials
- **Promote and Fund Exportability:**
  - Increase education and training on the benefits of exportability throughout the defense acquisition community
  - Dramatically increase funding for the Defense Exportability Features (DEF) program to spur increased exportability
- **Facilitate Technology Transfer:** Ensure that technology transfer regimes, such as AUKUS export control reforms and technology disclosure and foreign disclosure processes, facilitate increased collaboration and do not hamper international cooperative efforts involving sensitive technology



# Questions