

Business Model Improvements of Government-Owned Contractor-Operated Ammunition Plants

Wilfred Ahoua, Brice Coleman, Taliah Naranjo, Daniel Newell, Lauren Pile, and Christian Vaughn

Department of Systems Engineering
United States Military Academy, West Point, NY

Corresponding author: Brice.Coleman@WestPoint.edu

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Abstract: The purpose of this project is to propose improvements to the current business model for the Government-Owned, Contractor-Operated (GOCO) ammunition plants of the United States Organic Industrial Base (OIB). The intent is to make GOCOs more competitive, efficient, and cost-effective in supporting Army readiness. The team conducted over 30 interviews which provided varying perspectives on issues within the OIB. Among these issues, the team identified lack of standardization as a common theme. The team focused on targeting this issue with GOCOs' Performance Work Statements (PWS) which dictate the standards of operations at each facility. The team constructed five templates allowing for both standardization and customization of PWSs. The desired end state is to improve horizontal and vertical communication to develop a healthier symbiotic relationship between the government and contractors to ensure mutual future success.

Keywords: Government-Owned, Contractor-Operated (GOCO), Government-Owned, Government-Operated (GOGO) Joint Munitions Command (JMC), Organic Industrial Base (OIB), Performance Work Statement (PWS)

1. Background

1.1 Background of the Ammunition Enterprise

Readiness remains a top priority for the nation's military leaders. One of the largest assets of readiness is the Army's ability to manufacture its own ammunition in-house to support the warfighter. The Army manages a nationwide network of depots, arsenals, munitions centers and ammunition plants. Collectively, these resources create the Army Organic Industrial Base (OIB). While the OIB hardly operates at full capacity today, it remains a strategic investment priority to serve as both insurance for Army readiness and deterrence against foreign adversaries. The OIB falls under both Army Material Command (AMC) and the Assistant Secretary of the Army for Acquisition Logistics & Technology (ASA(ALT)) with a purpose to manufacture, distribute, store, and demilitarize effective and lethal ammunition. Two key institutions are subordinate to these two commands: Joint Munitions Command (JMC) and Joint Program Executive Office Armament & Ammunition (JPEO A&A). JMC more closely aligns itself with AMC and focuses on physical production operations. JPEO A&A operates closer with ASA(ALT) and focuses on acquisition management of the OIB. Figure 1 displays the hierarchy of the key institutions above the OIB. This project specifically works with JMC to analyze the current business practices of the five GOCO ammunition production facilities. The team's goal is to provide insight on current challenges within the GOCOs and offer solutions to improve cost effectiveness, competitiveness and efficiency.

GOCO ammunition facilities are a business enterprise approach to government-owned problem. The government first utilized the private sector with the United States entry into World War II. Strategic leaders previously realized during World War I that the strictly-government approach to the ammunition process was inadequate to sustain modern military conflicts. The model could not quickly produce mass amounts of effective ammunition. Likewise, reliance on stock piles appeared an inadequate solution due to the advances in technology. The government decided to leverage the private sector because it offered

modern production capabilities to output larger amounts of ammunition. Additionally, it was more cost-effective to the government to utilize contractors over having the government own and operate the facilities.

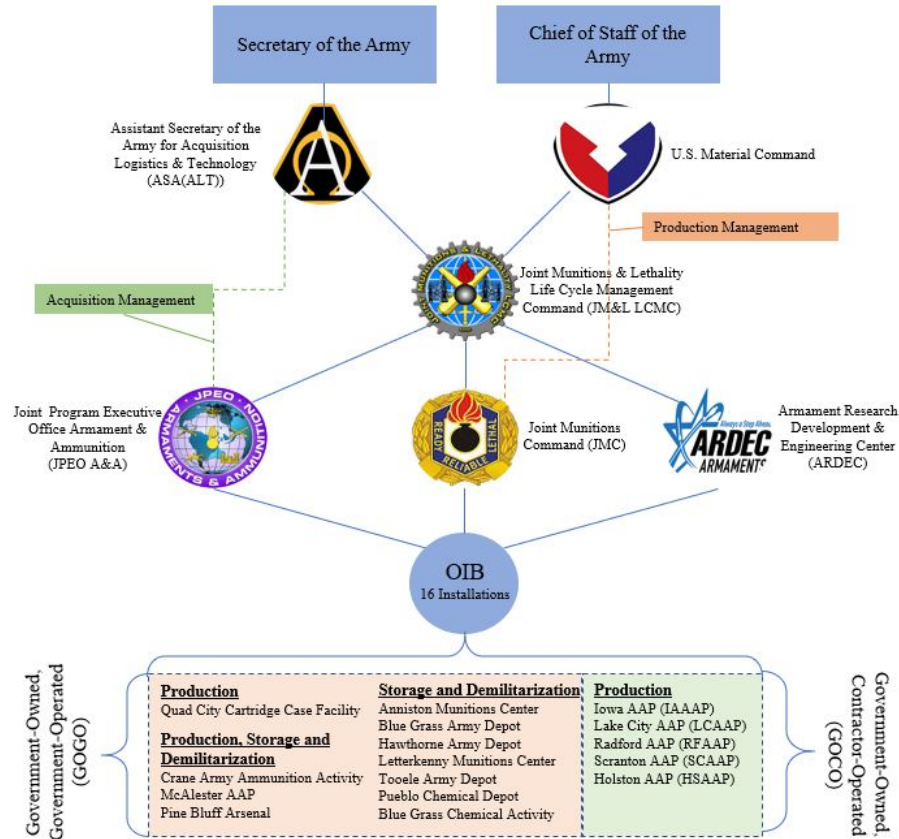


Figure 1. The Organic Industrial Base Hierarchy

GOCOs and their business approach remain issues of concern in today’s ammunition community. The government and private sector businesses do not inherently share the same fundamental approaches to problems. Leaders at JMC referred to contractors as, “Patriots? Yes. But capitalists first” (Veto, 2018). These ongoing differences have degraded the GOCOs’ performance to their current suboptimal state and burdened the government with high operating costs. The GOCOs suffer from several challenges in today’s market, including:

- (1) Highly variable demand for conventional munitions with no constant manufacturing requirements
- (2) Maintaining high production capacities to ensure surge and readiness requirements are met
- (3) Eroding World War II era infrastructure due to the lack of government funding and contractor reinvestment
- (4) Production items that are unique to munition-related products and military demands
- (5) Being located on large facility footprints that can be comparable to a small city
- (6) Broadly-applied Army regulatory requirements
- (7) Aging specialized work force

However, even with challenges GOCOs offer the ability to manufacture organic ammunition at a high capacity that remains unrivaled on the global scale. This fact alone justifies the use of GOCOs since they continually serve their main purpose of meeting readiness demands. The team believes that GOCOs remain the appropriate solution to ammunition production. Contrary to current belief, the system is not broken; however, its current state is not sustainable to reliably meet readiness needs. The team will further discuss ways to improve areas to balance these opposing forces of business and government by

providing improvements to strengthen horizontal and vertical communication. Ultimately, in the hopes to make a more cost-effective, competitive and efficient system.

1.2 Literature Review

A common theme appeared after researching related literature on the topic of the OIB. The issues provided by JMC’s problem statement about how inefficient and problematic business practices degrade the strategic readiness of the OIB are not new. The problems that GOCOs are currently facing are problems that have been discussed and approached before. However, no clear and effective solution has been proposed to address the concerns. “A deliberate approach that balances investments in the OIB from wartime to peacetime transition is paramount to support the capacity of military forces to operate in a complex and austere environment in the future” (Ryu, 2016). One reoccurring challenge is establishing an economically efficient way to manage these GOCOs while balancing a flexible system that quickly adjusts to changing demand. This is because the demand for ammunition to support the military and military operations is always changing and difficult to predict (Zimmerman, 1998). Additionally, headquarters struggles with enforcing strict Army regulations placed on the GOCOs to ensure safe and legal practices without restricting contractor's freedom to operate in a cost-effective manner. Another finding is the difficulty that military leaders and government workers have when it comes to commanding contractors. There is a need to reconfigure the relationship between the contracted and uniformed military workforce at a policy level (Riley, 2015). This research has shown that even though there are problems with GOCOs, they are not broken, the model just needs to be revised. Transforming the GOCO model can be a cost-effective and feasible option for reviving the nation’s munitions capacity and a better ammunition production base (Nutt, 2011).

2. Problem Definition

2.1 Project Description, Scope & Definition

This paper examines the research, PWS analysis and data modeling relating to the five GOCOs. Through PWS analysis the focus revolves on uncovering each ammunition plant’s best industry practices to optimize efficiency. The result includes close analysis of how the GOCO system itself can improve to insure Army readiness requirements while attaining economic efficiency during peacetime operations. The project objective is to develop recommendations to JMC to improve the existing GOCO business model. A majority of this project consisted of intensive research to gain thorough understanding of the problem through reviewing literature, conducting over 30 interviews with key stake holders, cross analyzing over 50 Performance Work Statements, and analyzing the GOCOs effectiveness in achieving strategic readiness based on production capacity and capabilities.

2.2 Client Analysis of Problem

JMC provided the team with a list of issues to be addressed about current GOCO operations. The team categorized these issues into three main areas to research. Figure 2 breaks down these focus areas and JMC’s desired end state.

Focus Area	
Contracting	Analyz
Re-categorization	Create
PWS	Analyz

Figure 2. Problem statement focus areas and desired end state

3. Methodology

3.1 Findings

In terms of the OIB, there are four key stakeholders influencing the GOCOs; contractors, PEO, JMC and the warfighter. Contractors, PEO and JMC all have differing expectations and priorities concerning GOCOs and the OIB. They all center around providing the warfighter with reliable and lethal ammunition. However, these differing priorities cause bureaucratic gridlock as each stakeholder fights to establish conditions that favor the ammunition production process in their interest. The interviewees consisted of senior leaders of the Organic Industrial Base from eight locations and five plants. They included the GOCO commanders, two GOCO deputy commanders, two GOGO commanders, and various other government employees. The team has conducted a total of 30 interviews to gain multiple perspectives and information about the problem. Because this project is so large and has such a critical impact on our nation's defense, there are a lot of positions, opinions, and perspectives that influence how GOCOs operate. The team traveled to several ammunition plants including Radford Army Ammunition Plant (VA), Lake City Army Ammunition Plant (MO), Iowa Army Ammunition Plant (IA), Letterkenny Army Depot (PA), Scranton Army Ammunition Plant (PA), Rock Island (IL), and Picatinny Arsenal (NJ). These site visits consisted of on-sight visitation of ammunition production, tour of the sites, and interviews with key government personnel. After all the interviews were conducted, the team had over 200 findings concerning the competitiveness and efficiency of the GOCO's in the ammunition community. The team focused on the problem statement to generate the following categories to investigate further: contracting, re-categorization, PWS, readiness, competitiveness/efficient/cost effectiveness, and modernization.

3.2 PWS Analysis

Performance Work Statements (PWSs) are operating contracts between the GOCO government staff and the contractor. These include everything from maintaining the facilities and equipment to mowing the grass around the facility. These PWSs are individually written at each plant and approved by JMC. There is no standardization, even though many of the contractors must follow the same Army regulations for issues such as security or facility access.

After initial analysis of the five different GOCO PWSs, five common categories emerged that all facilities seemed to share: maintenance, property, safety/security, health and environmental, and contract management. The next challenge became creating more specific guidelines and subsections for each category that applied to every GOCO. Each GOCO offers unique end items and requires individuality to correctly build an effective and adequate PWS. For example, nitrocellulose production at Radford requires different safety than metal parts at Scranton. The team settled on developing more of a standardized template each GOCO facility would follow. Based on the needs of each plant the template allows for the need of customization while still providing JMC with better organization and oversight.

Standardizing PWSs allows more oversight to headquarters. With clearer information and guidance, JMC establishes both vertical and horizontal communication. This increase in communication provides better organization and network to share industry best practices thus increasing the efficiency of GOCO operations.

3.3 Data Analysis

Readiness remains a top priority in maintaining the OIB. Readiness is built upon the idea of reaching surge production capacity and maintaining critical capabilities. GOCOs are large facilities with several specialized production lines. Compared to commercial and foreign competitors, their production capacity is unmatched. With so much capacity, the challenge becomes accurately predicting warfighter demand while balancing the contractors need to be cost-effective.

To help headquarters track, predict, and analyze resource allocations between training demands, missions, objectives, and surge requirements, JMC uses an application called the Industrial Base Assessment Tool (IBAT). IBAT provides some level of horizontal communication between stakeholders such as PEO and JMC to better forecast end item amounts. Annually, major stakeholders within the OIB and defense acquisition create a Program Objective Memorandum (POM) which recommends resource allocation for five years of future defense. These numbers provide the ability to calculate a Sustained Readiness Requirement (SRR) for each end item. The SRR estimates the optimal number of end items each GOCO should have the potential to produce annually based on surge requirements.

Data from IBAT provided by JMC highlights two major conclusions about the GOCOs (IBAT, 2019). The first is that the GOCOs have more than enough capacity to ensure surge requirements. Figure 3 below depicts the percentage that the OIB can meet all SRRs for each end item. The figure shows that in terms of readiness the OIB does an exceptional job in meeting the capacity demands for wartime predictions. The OIB can produce 536 end items and 94% of those items can be produced at the surge capacity to meet SRR.

However, the second conclusion drawn from the data is that GOCOs operate at suboptimal levels because many of their production lines are no longer needed to meet SRR. Figure 4 shows the total unique end items each GOCO can produce contrasted with end items that have an SRR of zero. Having zero SRR means there is no expected expenditure of these items to meet future operational plans, contingency, or war objectives or training. Essentially, the army has rendered these items obsolete to meet modern readiness demands. The GOCOs still maintain this equipment which takes up space and requires layaway work which take effort, money, and time that could be dedicated to developing applicable and modern production lines. Lack in modernization funding from drastic cuts in defense spending lead to degrading production lines that do not contribute to the demands set by advances in weaponry technology. This leads to the suboptimal state these ammunition facilities operate in today.

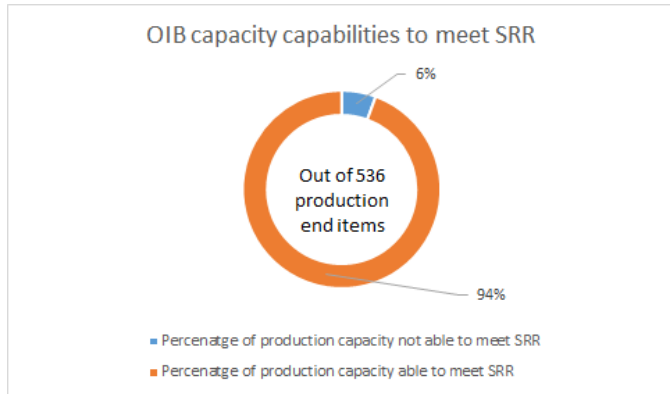


Figure 3. Capacity Capabilities

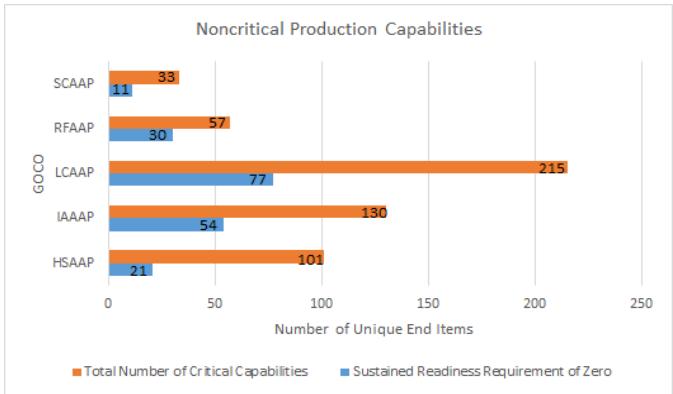


Figure 4. Noncritical production lines

Data analysis from IBAT provides insight that when it comes to meeting readiness requirements, the GOCOs can handle the surge capacity. It also highlights that GOCOs currently operate at a suboptimal rate due to a lack of modernization funding and reinvestment. This is shown by the number of end items and equipment not currently needed for military readiness. Further analysis of the data will hopefully draw deeper conclusions on the OIB capabilities and capacity. From the data above it is clear these large facilities have the capacity but lack in the capabilities to operate at optimal performance.

4. Conclusions and Recommendations

Several noteworthy conclusions were gathered through stakeholder analysis, interviews, and the site visits. The conclusions centered around four specific aspects: contracting and oversight, split-contracting, PWS, and re-categorization. Many of these conclusions are high-level decision to be made, but through multi-level stakeholder analysis, the research suggests this change could provide much value to all levels of JMC.

- (1) For contracting and oversight, it is beneficial to use long term contracts with several extensions in order to give contractors an elevated sense of ownership and to ignite competition and accountability.
- (2) Split-contracting should continue to exist with two separate contracts between facility and production.
- (3) PWSs across plants have different formats and include certain sections that other plants lack. Some standardization across plants can help identify and implement best practices and develop a horizontal line of communication between the facilities.
- (4) Despite the overwhelming desire for possible transition to the GOGO model, the foundational GOCO model is necessary and for surge capabilities.

- (5) Recategorization of plants to their own entity and removing them from the umbrella of an Army installation can eliminate irrelevant requirements and lower overhead costs of plant operations.
- (6) JMC should consider hiring government employees for more permanent positions and contractors for temporary positions.

Post-stakeholder analysis, the team identified the largest issues in the OIB as the difficulty in simultaneously managing tasks that are dependent on one another and cost effectiveness. An analysis of PWSs and data made two key conclusions. First, the lack of PWS standardization harms the oversight at the enterprise level. Second, the current purchase-of-product production model is inefficient and cost worthy to the government.

To address the lack of PWS standardization, implementing five standard PWS templates is recommended to help the plants share their best practices and create better oversight and comparisons for corporate level analysis. This establishment of horizontal and vertical communication leads to a more ready, efficient, and lethal Organic Industrial Base to support the warfighter.

Ultimately, the GOCO business model serves its purpose well to meet surge requirements at minimized cost to the government. However, the purchase-of-product business model is outdated and should be adjusted to something similar to a product-as-service model. JMC should analyze the effects of changing the business model to a product as service model. By incorporating more data analysis

With PWS standardization, long-term contracts with extensions, and recategorization, the research and analysis conducted suggests these recommendations to the existing model will provide more value to the warfighter by improving the efficiency and effectiveness of the OIB.

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