

An Approach to Resolving DMSMS: How a NAVSUP WSS Program Saved over \$100M

By Richard G. Jethon and Jonathan Barger



Naval weapon systems inherently face Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues on a daily basis. Obsolescence is debilitating to the warfighter, affecting mission readiness and the capacity for mission success. As systems age and populations decrease, companies are making business decisions to “walk away” from supporting Naval weapon systems. Without a proactive process to resolve DMSMS issues, mission readiness is severely degraded and the operations costs skyrocket.

The Navy continues to operate and the Naval Supply Systems Command Weapon Systems Support (NAVSUP WSS) supports the H-53, H-1, P-3, EA-6B, E-2, C-2, and C-130 aircraft that were originally fielded up to 50 years ago. The AV-8 and H-60 have been operating since the 1970s, and the V-22, which is still in production, was designed 30 years ago. Newer aircraft are being fielded with known obsolescence while the aircraft is in production. For example, the V-22 Osprey, which is still in production, is facing multiple bit piece obsolescence issues concerning 19 aircraft weapons replaceable assemblies and supporting equipment.

The Naval fleet is getting older and its population is getting smaller. Long-term suppliers are making business decisions to discontinue product support and to “walk away” from Department of Defense contracts due to poor profitability. In many instances the Navy requires small-quantity buys which industry cannot justify from a business perspective. In addition, many components that fit this category are lacking government-owned data in order to qualify additional sources of manufacture and/or repair. For example, the F-18 Super Hornet, which is still in production, is facing 18 known DMSMS cases in the next 2 years.

NAVSUP WSS experiences frustrated parts such as unfilled customer orders, back orders, and no-bids on a daily basis. These issues affect readiness/availability, production lead time, administrative lead time, and overall cycle time to fill a requirement. Inefficient use of resources and a lack of communication within NAVSUP WSS and key external stakeholders have led to delays in resolving frustrated parts. Before the creation of the Item Improvement Program, there was no predefined WSS frustrated parts process, leading to ineffective utilization of resources and delayed response times to these readiness issues. Many of these cases were due to DMSMS and/or obsolescence.

To establish a DMSMS “best practice,” team members collectively established the NAVSUP WSS Item Improvement Program in 2009 under the guidance of Matthew Meer. The program was created to take advantage of various funding sources to reduce the total life-cycle cost to NAVSUP WSS-managed items, but it has since evolved to address any technical problem across NAVSUP WSS’s cognizance. The Item Improvement Process involves recognizing and identifying instances of items needing improvement, assessing the potential for negative impacts to readiness, analyzing potential mitigation strategies, and implementing cost-effective strategies to ameliorate negative outcomes.

A key tenet of the Item Improvement Program is to conduct a thorough investigation of the problem item and expedite it through the correct adjudication authority. Each thorough investigation relies heavily upon reaching across many DoD organizations and industry to resolve issues. The team has had success teaming with both industry and DoD, including Keyport, the Avionics Rapid Action Team (ARAT), Concurrent Technologies Group Mantech Program, Avionics Component Improvement Program (AvCIP), Program Management Activities, Fleet Readiness Centers, American Competitiveness Institute, Office of Naval Research, logistics and engineering communities, Dayton T. Brown, original equipment manufacturers (OEMs), and Elbit Systems. Communication and follow-through are an important aspect of the team, as we strive to find the best solution possible for each individual DMSMS case.

The Item Improvement Program has faced several challenges in implementing solutions, including organizational visibility, buy-in from the technical authority, and funding. Before the Item Improvement Program was stood up, many logistics engineering change proposals and DMSMS issues were funded but unsuccessfully executed and were not supported by the warfighter. To resolve these issues, the team completed a continuous process improvement (CPI) project in March 2015 that resulted in a reduction of cycle time on the Item Improvement/DMSMS mitigation process from an average of 220 days to 80 days, which was a 60 percent reduction. The DMSMS team embraced the concepts of CPI and improved a number of internal processes, including mapping the Item Improvement notification and investigation process. Part of the process was to standardize work and eliminate waste.

The DMSMS team also established a tracking database to track Item Improvement/DMSMS progress, assign responsibilities, and close out action to produce results. Other improvements were to stand up an Item Improvement “mailbox” to record and expedite internal opportunities, create a desk guide for all NAVSUP WSS employees, and create an internal NAVSUP WSS Item Improvement Program Process Guide. Weekly meetings with team members were held to track ongoing projects and make progress on Item Improvement solutions. The Mechanicsburg DMSMS subject matter experts were also included on the team, which has led to the identification and resolution of NAVSUP WSS Mechanicsburg issues. The team performs extensive technical research to investigate the cause of the problem item, alert the correct engineering authority, and expedite a workable solution.

The DMSMS team took the initiative to visit and present our innovative and proactive approach to NAVSUP WSS logistics managers of legacy systems. The team is a key component in the Logistics Engineering Change Proposal (LECP) program and is always seeking new opportunities to address problem items. Other areas where the team is actively involved and integrated include a Naval Air Systems Command (NAVAIR) 6.7 sponsored project to map and standardized the life-of-type (LOT) buy process across the enterprise, coordinating projects through the NAVAIR PMA-209 AvCIP

program, conducting weekly meetings with the integrated weapon support teams within NAVSUP, and conducting officer wardroom training and instruction. The team is also part of the instruction for the NAVSUP academy conducted for new hires and has rewritten the NAVSUP DMSMS instruction, which was signed in July 2014.

These efforts have increased the success rate of the LECP process and have positively affected warfighter customer support. An additional benefit is that success breeds more opportunities. As DMSMS LECPs were successfully integrated, both government and our partners in industry developed more opportunities.

Based upon the type of problem, the team employed a specific solution from the variety of DMSMS solutions shown in Figure 1. In many cases, after a thorough investigation by the team, costly redesign efforts were avoided as captured within the “No Solution Required” categories. These solutions provide real-world examples that validate the guidance found within Standardization Document 22 (SD-22).

Although each solution set provided substantial improvements for the warfighter, the top five proactive solutions yielded substantial cost savings, as shown in Table 1. Since its inception in 2009, the Item Improvement Program has realized \$127 million total cost avoidance, comprising \$42 million in approved LECPs and \$85 million in logistics/engineering solutions. When actual figures were not available, cost avoidance was estimated in accordance with the latest revision of SD-22.

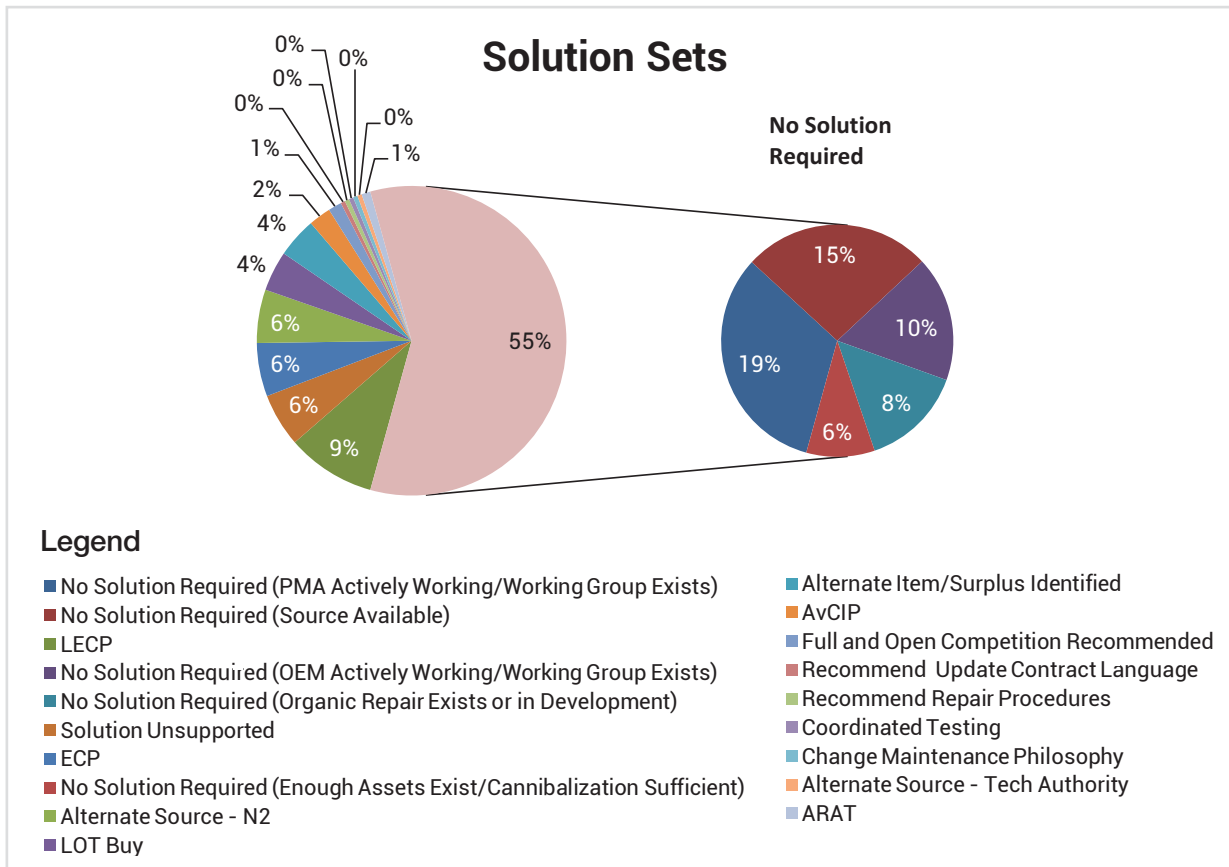
Table 1. Top Five Item Improvement Proactive Solutions and Cost Avoidance

Proactive solution	Cost avoidances to date	Estimated long-term savings
LECP	\$42,000,000	\$ 96,185,366
Alternate source—NAVSUP engineering	\$17,781,550	
ECP	\$9,073,440	
LOT buy	\$1,469,788	
Enough assets exist/ cannibalization sufficient	\$720,070	

The Item Improvement Program is an ongoing initiative that has reviewed more than 250 cases. The core team—consisting of Jonathan Barger, David Coyle, Richard Jethon, John Kosempel, Michael Kulas, Matthew Meer, Jeremy Messner, Jenna Mock, Ricky Neason, and Colin Shanta—continues to identify degrader and supply support issues for both Maritime and Aviation and coordinates with technical warrant holders to implement technical improvements while relying on various funding vehicles to move projects forward. Efforts performed by the team are a DMSMS

“best practice” that increases supportability and availability of systems to the warfighter and reduces life-cycle logistics costs by improving supply chain efficiencies with technical coordination and problem solving often coupled with improved reliability and supportability. The team was recognized by winning the 2016 DoD DMSMS Program Achievement Award in the lifetime category.

Figure 1. Item Improvement Solution Sets



About the Authors

Richard Jethon, a Marine Corps major (retired), has 20 years of experience in the Fleet Marine Force in Marine Aviation, assigned as a helicopter pilot. He performed duties in Operations and Maintenance, both in CONUS and deployed. He also was assigned to an infantry regiment as a forward aircraft controller within the 2nd Marine Division. He was a presidential helicopter program integrator at DCMA Sikorsky Aircraft Corp., responsible for the overhaul of the presidential helicopter fleet. Mr. Jethon started with the U.S. Navy in October 2008 and was a management analyst and lead DMSMS integrator within NAVSUP WSS Philadelphia. He was responsible for integration and program management within the engineering department. He is a subject matter expert on DMSMS resolution, the engineering change process, criticality, commerciality, the LECP process, performance-based logistics contracts, and aviation maintenance operations.

Jonathan Barger is the Item Improvement program manager at the Naval Supply Systems Command Weapon Systems Support Philadelphia. He started working at NAVSUP WSS in 2008 through the Naval Acquisition Development Program. While program manager, Mr. Barger’s Item Improvement team received a Silver Medal at the 2016 Federal Executive Board for Outstanding Technical Support and the 2016 Department of Defense Diminishing Sources and Material Shortages Lifetime Achievement Award.