STRATEGY RESEARCH PROJECT

CORE DEPOT MAINTENANCE POLICY AND THE IMPACT ON CINCs

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Abstract

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The Department of Defense defines core as the capability maintained within organic defense depots to meet readiness and sustainability requirements of the weapon systems that support the JCS contingency scenario(s). Even though the Services perceive DoD policy on Depot Maintenance Core Capability to be inconsistent; each Service's required core capability (which should be reasonably constant) has changed numerous times; GAO has been critical of DoD policies; and the CINCs have negligible input, management of this process and policy is better served at the DoD level.

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Core Depot Maintenance Policy

and the Impact on CINCs

This paper examines the impact of DoD core depot maintenance policy on the CINCs and what, if any, influence CINCs or JCS have or desire on conforming this capability to meet their needs. The Department of Defense defines core as "the capability maintained within organic defense depots to meet readiness and sustainability requirements of the weapon systems that support the JCS contingency scenario(s). Core exists to minimize operational risks and to guarantee required readiness for these weapon systems. Core depot maintenance capabilities comprise only the minimum facilities, equipment, and skilled personnel necessary to ensure a ready and controlled source of required technical competence. Depot maintenance for the designated weapon systems will be the primary workloads assigned to DoD depots to support core depot maintenance capabilities".[1] This definition does not mention the needs of the CINCs, but does identify the requirement to meet readiness and sustainability requirements of weapon systems that support the JCS contingency scenario(s). These contingencies are planned for and executed by the CINCs and therefore support of these weapon systems must directly support the CINCs.

In assessing the reasons for considering changing core management procedures, consider possible faults in the current system. There are several concerns with this process:

- Services perceive DoD policy on Depot Maintenance Core Capability to be inconsistent
- Required capabilities of numerous Service depots (which should be reasonably constant) have changed numerous times
- GAO has been highly critical of DoD depot maintenance policies
- CINCs have negligible input in the management of this process

Even with the above problems/conflicts this paper will demonstrate that management of this process and policy is better served at the DoD level.

The increasing tendency of the Joint Staff and the CINCs to control all aspects of warfighting capabilities and support of those capabilities leads to the assumption that inevitably CINCs and/or the JCS will feel compelled to control or establish greater influence over supply and maintenance depots. Joint Publication 0-2 already requires the Chairman of the Joint Chiefs of Staff to periodically, not less often than every 2 years, report to the Secretary of Defense on the responsiveness and readiness of designated combat support agencies, including: Defense Information Systems Agency, Defense Intelligence Agency, Defense Logistics Agency, Defense Mapping Agency, National Security Agency, Central Intelligence Agency, Central Imagery Office, and any other defense agency designated as a combat support agency by the Secretary of Defense.[2] These organizations clearly are not under the Chairman's control. In fact, the CIA Director is a cabinet level position equal to that of the Secretary of Defense.

This is a significant indication of the expanded role of the JCS in ever widening areas.

A recent General Accounting Office (GAO) report recognized that DoD annually spends about $15 billion on depot maintenance activities at 29 major defense depots and at about 1,300 private contractors.[3] Depot maintenance involves repairing, overhauling, modifying, and upgrading defense systems and equipment. At DoD level this type of weapon system support normally includes:

- Scheduled and unscheduled rework/overhaul of major weapon systems (ships, aircraft, armored vehicles, guided missiles, etc.)
- Scheduled and unscheduled engine/power plant rework (includes main propulsion, auxiliary power, etc.)
- Scheduled and unscheduled repair/overhaul/refueling of operational military nuclear reactors
- Scheduled and unscheduled support equipment and test equipment rework (includes on-site test bench verification, calibration services)
- Scheduled weapon system component repair/rework (i.e. for wholesale distribution to the DoD supply system)
- Emergency weapon system component repair/rework
- Tactical and non-tactical software support
- Emergency component fabrication/manufacturing based on drawings/specifications

- Emergency support equipment manufacturing based on drawings/specifications
- Weapon system modification design, engineering, hardware manufacturing and installation (modifications are changes made to a weapon or item of equipment which results in a new configuration, but which does not improve the weapon's capabilities)
- Weapon system upgrade design, engineering, hardware manufacturing and installation (upgrades are changes made to a weapon or item of equipment which results in a new configuration, and which does improve the weapon's capabilities)
- In-service engineering support to the operating forces (maintenance engineering, failure analysis/accident investigation, environmental engineering associated with maintenance processes, maintenance examination and evaluation and planner and estimator services)

The primary depot maintenance workloads assigned to DoD depots are those required to sustain core maintenance capabilities.[4] While the GAO report did not specifically address the CINCs or any relationship between them and core policy, the report was generally critical of DoD policy. GAO found DoD policy on maintenance placement of current and new workloads was unclear and felt that more work would go to the private sector, further increasing excess capacity in organic depots.

In section 311 of the National Defense Authorization Act for Fiscal Year 1996, Congress directed DoD to establish core depot maintenance capabilities to meet essential wartime demands, promote competition, and sustain institutional expertise. These capability requirements shape the minimum amount of organic depot facilities, equipment, and personnel that DoD maintains as a ready and controlled source of technical competence. Core capabilities mitigate the operational risks associated with maintaining readiness for successfully completing, and expeditiously recovering from contingency operations. DoD was instructed to:

1. Consider and manage core requirements from a DoD perspective (i.e., the integrated totality of the individual Service core requirements equals DoD core requirements).

2. Size the organic sector to perform core (include last source of repair and best value requirements); pursue downsizing commensurate with changes in requirements and overall force structure.

3. Identify those depot maintenance facilities established to provide core depot maintenance capabilities.

4. Quantify core requirements on a biennial basis or when scenario or other structural changes make it necessary.

5. Provide for a robust, technologically proficient organic infrastructure to support core requirements, including those core capabilities required to support new and future weapon systems.

6. Manage organic infrastructure investments, process modernization, and workforce development necessary to sustain required core-related organic capabilities (as well as last source of repair and best value requirements).

In order to meet the above requirement, in March 1996, DoD submitted a report entitled "Policy Regarding Performance of Depot-Level Maintenance and Repair".[5] This report was compiled using input provided by each of the Services, a process much like that of a higher level staff consolidating, analyzing and submitting reports from subordinate units. This procedure could have been accomplished by another organization, if there was one with the expertise and knowledge available to impartially evaluate depot level performance for each of the Services. However, neither JCS J-4 nor the CINC staffs have this capability, and they should not be burdened with the responsibility. OSD has both the personnel and expertise necessary to meet Congressional taskings in this area.

Process for Determining Core

Each of the Services generally compute core depot maintenance capability in the same manner using the OSD approved algorithm to determine the equipment needed to support the JCS approved scenario. The basic procedure is to:

1. Identify specific types and quantities of mission essential equipment required for JCS approved scenarios.

2. Determine a workload experience factor per unit based on known usage. Adjust based on applicable failure factors, OPTEMPO, and scenario driven environmental or attrition factors.

3. Compute depot workload based on scenario readiness and sustainability.

4. Determine depot skills required to support contingency scenario.

5. Adjust for surge capacity.

6. Calculate basic core workload requirement.

7. Apply efficiency or economy factors to keep core from being prohibitively expensive.

8. Determine peacetime core requirements.

Essentially, the Services determine what depot maintenance capabilities are critical to their weapon systems and they retain or establish these capabilities in their organic depots. These capabilities are deemed too critical to entrust to the private sector to accomplish, given their chances of experiencing labor problems, strikes, or simply a change in corporate attitude or willingness to continue work on a given workload.

As an example of how these procedures are used, imagine that the Army finally purchased the Comanche aircraft. Among all of the weapon systems this

Service plans to use to meet its JCS contingency scenario missions are 160 Comanche aircraft.

Hypothetically, the Comanche aircraft requires depot-level maintenance on average once every seven years. Each overhaul takes an average of 8000 Direct Labor Hours (DLHs). The annual depot workload factor per unit is, therefore, 8000 DLH divided by 7 = 1143 DLHs per aircraft per year. Based on scenario planning and past history, we anticipate that each Comanche used in combat will require, on average, one-third more depot maintenance than it would have if it had only been flown in peacetime training exercises. We therefore accelerate the peacetime workload factor by 1/3 (multiply 1143x1.33) resulting in an anticipated scenario depot workload factor of 1520 DLHs per aircraft per year.

Since each Comanche will "burden" the depot by 1520 DLHs per year, and since there are 160 Comanches in the scenario, we therefore anticipate a need to expend 1520x160=243,200 (round down to 243,000) DLHs per year to support this one weapon system.

At this point we have approximated the gross total "capacity" or "infrastructure size" (in DLHs) for Comanche core workload, but we must articulate this in terms of specific skills or capabilities in order to ensure that we understand the real Comanche core requirement and that we don't under support or over support one or more capabilities. Each time a Comanche is

reworked, dozens of maintenance and engineering skills are exercised. Some of these capabilities are peculiar to the Comanche aircraft; many are common to more than one type of aircraft in the Service inventory. Each of these skills needs to be cataloged and the associated Comanches DLHs documented. A depot maintenance skills inventory is published bi-annually by the Joint Depot Maintenance Analysis Group (JDMAG), a staff supporting the Joint Logistics Commanders. For purposes of the Comanche model, we assume that a careful "bottom up" capabilities analysis has been completed, and the different kinds of Comanche depot maintenance skills grouped into five functional areas: Comanche Cleaning and Stripping = 13,000 DLHs; Comanche Disassembly = 16,000 DLHs; Comanche Piece Part Fabrication and Repair = 156,000 DLHs; Generic Industrial Processes = 43,000 DLHs; Comanche Test and Inspection = 15,000 DLHs.

Its critically important that the breakout accomplished in previous steps be completed, not only so depot managers acquire visibility into the specific Comanche depot maintenance capabilities they need to preserve and protect, but also so that smart core workload decisions can be made across co-located scenario weapon systems. In this procedure we have an opportunity to make two adjustments which can drive down the amount of workload which must be brought into the depot (thus reducing infrastructure size and cost), without adversely impacting core capabilities. First, if there is more than one scenario

aircraft supported at the Comanche depot (a likely situation), then it is probable that some of the common capabilities (with overlapping DLHs) can be combined based on economies of scale or other efficiencies. Examples might be pattern making, plating or painting. For purposes of this example, we have found that we can reduce our Comanches core workload requirement in the industrial processed functional area by 20,000 DLHs because a number of capabilities are already being adequately protected using workload from another mission-essential scenario aircraft, and there is no risk that operational support will be compromised because we doubled up in these areas. By dropping these DLHs, our Comanche core workload is now down to 223,000 DLHs per year. Next we adjust for depot surge capacity. This is a DoD standard adjustment which recognizes that, in peacetime each depot employee normally works 8 hours per day, 5 days per week, and is away from work a predictable number of hours per month for leave, training and administrative time allowed. However, in the event of a national military emergency, the DoD depots would all surge their administrative activities and working current employees overtime (for planning purposes, 10 hours per day, 6 days per week). The result of surge is that, for a short period of time (notionally six months maximum), the existing infrastructure can generate 1.6 times the DLHs it produces under normal peacetime operations. This factor is important to the calculation of minimum required core workload, because it means that a depot commander will likely be

able to protect core capabilities during peacetime with fewer DLHs because, without adding additional resources, he can surge up to the predicted scenario requirement. We incorporate the DoD surge factor by dividing our previous DLH total by 1.6. The result, in this Comanche example, is 223,000 divided by 1.6 = 139,375 DLHs per year. What this tells us is that a depot infrastructure (employees, facilities, industrial equipment) sized to comfortably generate 139,375 Comanche DLHs per year in peacetime can, for the period of surge be expected to generate Comanche products and services at the rate of 223,000 DLHs per year. This example is somewhat simplistic in that it does not address what depot should perform the work, but it does serve to show the procedures that must be gone through to make necessary determinations.[6]

In an October 1994, Defense Science Board Task Force on Depot Maintenance Management, the Task Force concluded that policy decisions involving core capabilities and competitions, as well as past and future base realignment and closure actions, would define the large scale shape of the depot base. The members further stated that the acquisition process was also an important focus of key decisions that impact depot maintenance. Although acquisition decisions are made program by program, their effects are cumulative and long lasting. The Task Force endorsed using an acquisition Decision Tree Process (DTP) encompassing readiness, sustainability, and economic factors as the basis for designing the workload allocation between organic and private

industry facilities. Inherent in the Task Force findings was the assumption that these changes would cause adoption of a new philosophy that precludes automatically acquiring organic depot capability for new weapon systems, as had been past practice. Following Task Force findings would reportedly provide for:

1. Organic depot duplication of plant equipment already present in the private sector only when there is a proven and compelling need for readiness or sustainability risk reduction.

2. Incorporation of the maintenance concept of a new weapon system, to include the proper mix of public/private maintenance, as an essential component of the acquisition strategy.

3. Service top-down depot maintenance strategy guidance review as part of each new weapon system's milestone decisions.

4. Re-examination of the depot maintenance strategies of weapon systems as they progress in the acquisition process.

While it is obviously valid to make the basic organic/contract strategic decision early on, the best risk-reducing balance between contract and organic support may need to change over time. Further, changes in the procurement strategy may also invalidate the basis on which early source of repair decisions were made.[7] The task force did not address CINC involvement, but was clearly comfortable with the structure and process currently used within DoD in depot

maintenance management. Again, emphasis must be stressed on the level of decision making as well as the available expertise and objectivity on hand to make the right decision.

Functions of the Defense Depot Maintenance Council

At DoD level the primary body of decision makers on depot maintenance are members of the Defense Depot Maintenance Council (DDMC). The DDMC was established to:

1. Advise the Deputy Under Secretary of Defense for Logistics (DUSD (L)) on initiatives for reducing the costs and improving the efficiency and effectiveness of worldwide depot maintenance management and operations in the DoD.

2. Serve as a mechanism for the coordinated review of DoD depot maintenance policies, systems, programs, and activities and for jointly planning, monitoring, and evaluating the implementation of management improvement initiatives.

3. Serve as a forum for the exchange of information among the DUSD(L) and DoD officials responsible for the conduct of depot maintenance operations in the DoD.

4. Perform such other advisory duties relating to depot maintenance as the DUSD(L) may require.

Members of the DDMC include the DUSD(L); Commander, Army Materiel Command; Commander, Air Force Logistics Command; Deputy Chief of Naval Operations (Logistics); Deputy Chief of Staff for Installations and Logistics, Headquarters, U.S. Marine Corps; Director, Defense Logistics Agency; Army Deputy Chief of Staff for Logistics; Air Force Deputy Chief of Staff for Logistics; and the Executive Secretary, appointed by the DUSD(L).[8] Although not a voting member, the JCS J4 is an invitee to each DDMC meeting along with other key logistics managers such as the Commander, Naval Air Systems Command and the Assistant Secretary of the Army for Installations, Logistics and Environment. The DDMC meets monthly to discuss a wide variety of logistics issues including core, interservicing and workload allocation.

The organization within the DUSD(L) that actually administers the DDMC is the Maintenance Policy, Programs and Resources (MPP&R) office. This small, but very important organization has a multitude of responsibilities. The primary mission of this office is to provide the functional expertise for centralized maintenance policy and management oversight for all weapon systems and equipment maintenance programs and related resources within the Department of Defense. The goals of the office are to establish and maintain maintenance policies and programs that are managerially and technologically sound. These programs must be adequately resourced to maintain the desired levels of equipment and weapon systems readiness in order to accomplish the

Department's mission. Organizational functions include contributing to Congressional understanding of DoD maintenance requirements and programs, responding to directions and provisions of law affecting weapon systems and equipment maintenance by converting such requirements into coherent and effective policies and programs, and to provide strong leadership for their execution by the Military Services and Defense Agencies.

MPP&R works closely with the Service staffs ensuring that all positions on contentious issues are understood. Some of these issues require decisions by the DUSD (L), Under Secretary of Defense for Acquisition & Technology, Deputy Secretary, or even the Secretary of Defense. It is critical that an unbiased view is available for the leadership in making these depot level maintenance choices. In numerous cases, the decisions on where maintenance will be performed or whether it will be accomplished by government depots or the private sector have a high level of political impact. The media interest in BRAC decisions is merely reflective of the concern expressed by each locality with an affected organization. Workload distribution can mean the difference between whether a depot stays open or closes. Each of the depots have undergone significant downsizing, as has the rest of government and the private sector. The depots have become more efficient and economical than ever before, but there is still excess capacity at each of them. The private sector has undergone similar changes in structure and

efficiency. This situation is made even more difficult by the fact that DoD simply is not purchasing many new weapon systems.

In the past private industry was primarily interested in developing and producing new weapon systems, but the reduction in DoD spending caused private industry to look for other opportunities. DoD depot maintenance is one area that has caused considerable interest. This situation provides excellent opportunities for competition between private industry and government depots, but at the same time it creates, or at least fosters an adversarial atmosphere between the two. On the one side, it pits the private sector against one of their best paying customers, the government. On the other hand, it causes government depots to covet the workloads of their neighbors. This has resulted in animosity between the Services as well as between the private sector and the Services. However, the competition has resulted in greater efficiencies. An April 1994, Defense Science Board Task Force concluded that "a proper balance of depot maintenance workload between the public and private sectors of the defense industrial base will be achieved when the government depots and shipyards have reduced their workloads to the minimum required to protect critical core capabilities, and private companies have an opportunity to compete among themselves for everything else. In reality, there will always be workloads which industry cannot or will not compete for; in these cases it falls to the organic depots to act as last sources of repair. Likewise, there will be occasional

situations when a Service finds that there are insufficient qualified commercial bidders for a particular non-core workload, and a DoD depot may be asked to assume the workload or compete with industry on an exception basis. These inevitable anomalies do not change the basic strategy. The majority Task Force position is that public depots should concentrate on the work needed to protect their core capabilities, and that workload not needed to maintain those capabilities should be accomplished in the private sector. The Task Force, except for the Air Force, recommended discontinuing public-private competitions for non-core work. Similarly, the Task Force, except for the Air Force, believed DoD should use interservicing procedures, with Defense Depot Maintenance Council oversight, in lieu of public-public competition, for common hardware items requiring core capabilities."[9] Despite the Air Force exceptions, it is apparent that this Task Force saw a need for government depots to concentrate on core and that the DDMC should play a key role in the overall process.

The private sector is also handicapped by law. Section 2466 of Title 10, United States Code, requires that no more than 40 percent of the funds made available in a fiscal year to a Military Department or a Defense Agency for depot-level maintenance and repair workload may be used to contract for the performance by non-Governmental Federal personnel.[10] Attempts by both private industry, OSD, and the Services have been unsuccessful in getting this law revised or repealed. The resultant effect of the law is that DoD is limited in

how much outsourcing it can accomplish, even if it would be more cost efficient. This law is obviously detrimental to the private sector, yet all the lobbying thus far has not been able to make significant changes. The primary reason for this phenomenon is the Depot Caucus.

Depot Caucus & DoD Depots

The Depot Caucus is primarily comprised of politicians from states with depots. They have a vested interest in the workloads assigned to their state depots so each workload allocation becomes a political problem. This becomes especially important when BRAC or other major workload distribution events occur.

OSD documents available on the internet indicate that defense maintenance employs approximately 800 thousand Service people and DoD civilians (active and reserve) and requires an estimated $40 billion dollars annually in resources. Well over one thousand contractors are also engaged in performing maintenance of DoD materiel. Maintenance of DoD equipment, software and weapon systems is critically important to the Defense industrial base and to readiness and sustainability of combat forces. The apportionment of maintenance workloads among DoD's maintenance depots and private industry is vitally important to maintaining both the public and private sectors of the industrial base. The importance is evident from the interest shown by the Congressional Depot Caucus, one of the largest and most active caucuses in

Congress. Determining the source of repair for Defense equipment and weapon systems is an area of intense interest for Congress, private industry, and the Military Services. The office of the ADUSD(L)MPP&R is the only centralized activity within the Department of Defense devoted to management of maintenance.

Each DoD Component owns and operates its own organic depot maintenance infrastructure. The bulk of the workload is associated with ships and aircraft, with each accounting for about 40 percent (by dollar value) of the total effort. The remaining 20 percent is for missile, combat vehicle, and other ground equipment system workloads. Organic depot maintenance facilities typically employ several thousand people and provide robust maintenance capabilities. The DoD Components are currently downsizing the organic (public sector) depot infrastructure, primarily by implementing base realignment and closure decisions (BRAC). When the BRAC process is completed in 2001, only 19 of the 38 major organic depots that existed in 1988 will remain in operation as Government activities. Some of the closing organic depots may be transitioned into private sector entities and continue to operate as industrial facilities staffed by non-Federal Government employees. The Department estimates that in FY 1996, about 89,000 Federal employees will be assigned as depot maintenance personnel, down from a high of 156,000 in FY1987.

The total magnitude of depot maintenance expenditures, as well as the

actual proportions of these expenditures that are consumed by the public depots versus the private sector, are not precisely measured. DoD currently accounts for about $13 - $15 billion annually for depot level maintenance and repair work performed in both the public and private sectors. From FY 1996 to FY 2001, the decline in total DoD funding is currently estimated to total about 6 percent (in constant dollars). This decline is principally due to continuing reductions in military force structure and implementation of BRAC recommendations, but also due in part to more efficient operations. These efficiencies have been overseen in significant part by MPP&R. Operation of DoD depots are principally Service responsibilities while oversight has been provided by OSD. The magnitude of this industry, as described above, is enormous. It would not be in the best interest of the warfighters to add further confusion to the process.

Conclusions and Recommendations

JCS J-4 has approximately one hundred and twenty personnel to cover a wide area of responsibilities, currently not including depot level maintenance management. While this may look like a lucrative area in which to expand their base of control, it is not an area to be lightly entered into. The impact on the CINC's warfighting capability would be significant, at a minimum. Continual Congressional requirements in the area of depot level maintenance are extremely time consuming and on numerous occasions necessitate Secretary level input. The same problems would exist for the CINC staffs in this highly visible area.

The politics involved in depot maintenance workload assignment and maintaining government depots as a viable entity are highly sensitive issues given the current competitive environment among public and private sectors. The level of authority needed to deal with these influences exists at the OSD level. The JCS Chairman is certainly in a position to deal at this high level, but given his other responsibilities, does he really need this type of aggravation?

It is clear that OSD, the Services, and the JCS are primarily in business to support the CINCs and to preserve or enhance their warfighting capabilities. In the area of depot maintenance, where there is continuing conflict between the Services over workload distribution and maintenance of core capabilities, a higher authority is necessary to make these critical decisions, all in the best interest of the CINCs. Therefore, management of the depot maintenance core process and policy are better served at the DoD level.

Endnotes

[1] Department of Defense, Policy Regarding Performance of Depot-Level Maintenance and Repair, 1996, 8.

[2] Joint Pub 0-2, Unified Action Armed Forces (UNAAF), 1995, II-10.

[3] GAO Report to Congressional Committees, Defense Depot Maintenance- DoD's Policy Report Leaves future Role of Depot System Uncertain, 1996, 1.

[4] Ibid., 16.

[5] Department of Defense, Policy Regarding Performance of Depot-Level Maintenance and Repair, 1996, 8.

[6] Department of Defense, Report of the Defense Science Board Task Force on Depot Maintenance Management, 1994, G-a-3.

[7] Paul G. Kaminski, Addendum to the Report of the Defense Science Board Task Force on Depot Maintenance Management (Washington D.C., 1994), 15.

[8] Department of Defense Directive, Defense Depot maintenance Council, 1994, 1.

[9] Department of Defense, Report of the Defense Science Board Task Force on Depot Maintenance Management, 1994, I-15.

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