



Calhoun: The NPS Institutional Archive
DSpace Repository

Acquisition Research Program

Acquisition Research Symposium

2018-04-30

Fixed vs. Flexible Approaches to Improving Capital Investment in Military Depots

Lucyshyn, William

Monterey, California. Naval Postgraduate School

<http://hdl.handle.net/10945/58682>

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>



Fixed vs. Flexible Approaches to Improving Capital Investment in Military Depots

William Lucyshyn

*Director of Research and Research Professor
Center for Public Policy and Private Enterprise
School of Public Policy
University of Maryland*

15th Annual Acquisition Research Symposium
Naval Postgraduate School
May 9th, 2018



Research Objective

- ➔ **Research Objective: Determine if and how capital investment policy should be modified in order to optimize depot capabilities.**
- ➔ **Competing Concerns:**
 - Mandated minimum investment in the depots may inhibit strategic investment decision making.
 - In the absence of fixed funding, investment in depots may be overlooked.
- ➔ **Methodology**



Background: Capital Investment Requirement

10 USC 2476 (2007 NDAA): Each fiscal year, the Secretary of a military department shall invest in the capital budgets of the covered depots of that military department a total amount equal to not less than six percent of the average total combined maintenance, repair, and overhaul workload funded at all the depots of that military department for the preceding three fiscal years.

- ➔ The 6% requirement is a “floor,” as opposed to a “ceiling.”
- ➔ The statute does not require uniform investment across a military service’s depots.
- ➔ The basis is the “workload funded at *all* the depots of that military department,” but only investments in the “covered” depots count toward meeting the 6% requirement.
- ➔ The Defense Secretary may waive the requirement for reasons of national security.



Related Statutes

- ➔ **1984 - Core logistics capabilities (10 USC 2464):** It is essential for the national defense that the DoD maintain a core logistics capability ...
 - Defining core workload is subject to interpretations, and not always consistently applied.
- ➔ **1993 - Limitations on the performance of depot-level maintenance (10 USC 2466):** Not more than 50% (raised from 40% in 1998) of the funds for depot-level maintenance and repair workload may be used to contract for the performance by non-Federal Government personnel...

Both statutes result in development of organic capabilities that “would not otherwise be established on a purely economic basis.”



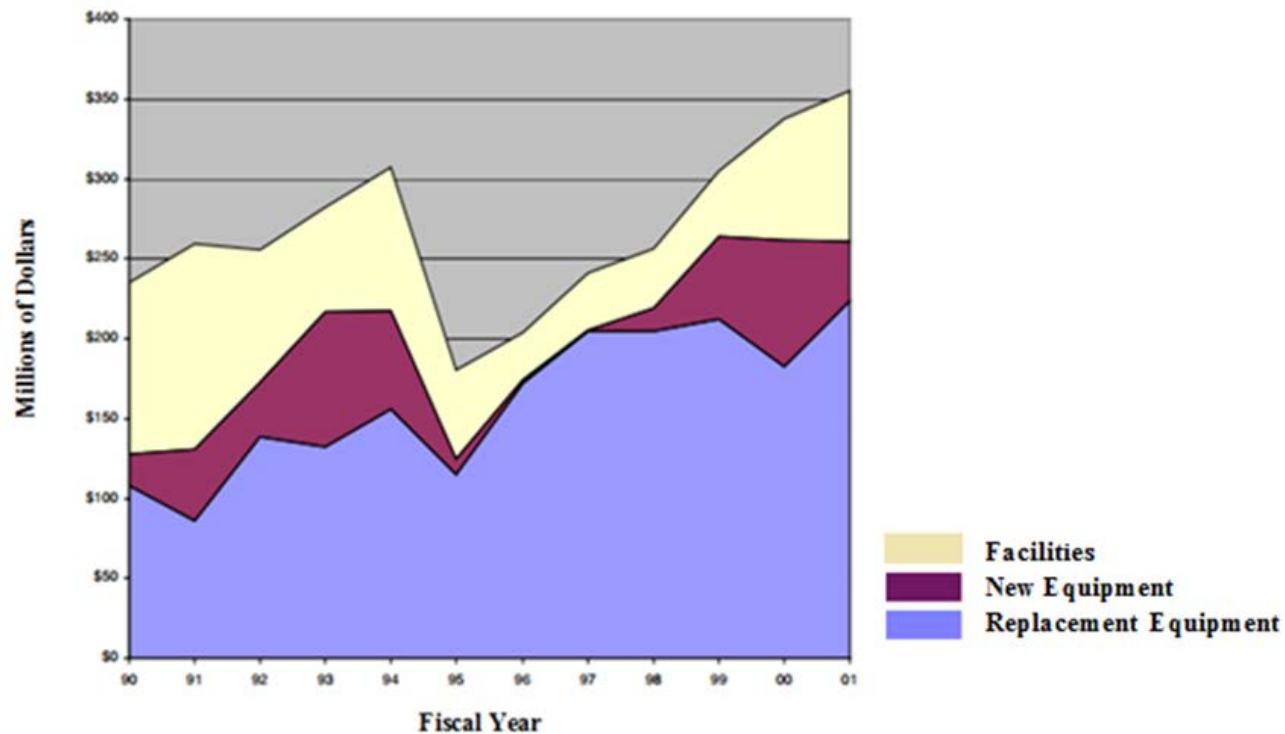
A Question of Policy?

Investment reductions reflected the DoD's 1996 *Policy Regarding Performance of Depot-Level Maintenance and Repair*.

➔ *The Department endeavors to keep depot maintenance capital investments to **the minimum necessary** for establishing and maintaining robust, technologically proficient **CORE capabilities**. As the Department goes through force structure reductions, contingency scenarios changes, base and facility closings, and maintenance concept evolution, logistics managers must **review current and unexecuted past capital investment** plans to ensure continuing need in view of changed requirements*

- Policy interpreted as a call to reduce capital investment in depots.
- Policy ignored non-core workload—some portion of which was to be performed in the depots to meet the 60-40 (now 50-50) statute.

Declining Conditions & Capabilities



“Downsizing, closures, and preferences for contracting new workloads combined in the 1990s to limit investments in depot facilities and equipment and contributed to general deterioration and less than modern conditions and capabilities at DoD maintenance depots.”

Source: GAO-01-533T Defense Depot Maintenance, Mar 21, 2001



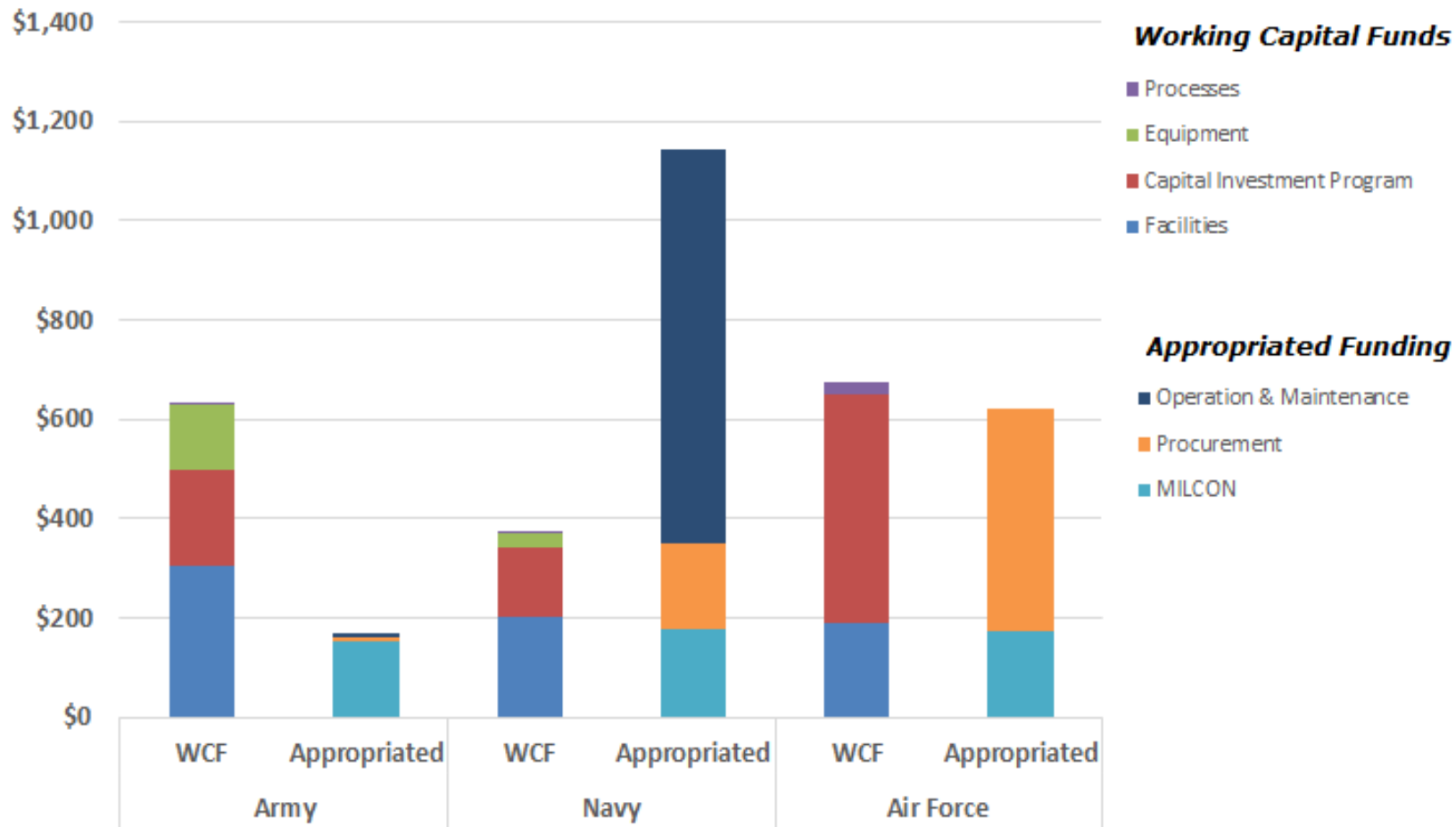
A Renewed Commitment

- ➔ **2002** - Air Force commits to significantly increase capital investment in its depots.
 - Air Force noted that past capital investment, which had averaged 3% of total depot revenue, led to a significant equipment purchase backlog.
 - Air Force envisions an annual capital investment level of 6% of revenue.
- ➔ **2005** - Congress commends Air Force for its commitment to its depots.
- ➔ **2006** - DoD issues overarching Strategic Plan formalizing 6% across the DoD.
 - Basis for investment limited to “core-sustaining workload.”
- ➔ **2007** - Strategic Plan superseded by the Minimum Investment Requirement in the NDAA.
 - Like the Air Force strategy, total revenue is used as basis.

20 “Covered” Depots



Funding Capital Investment



Sources of capital investment (\$ millions) over a three-year period, 2015-2017

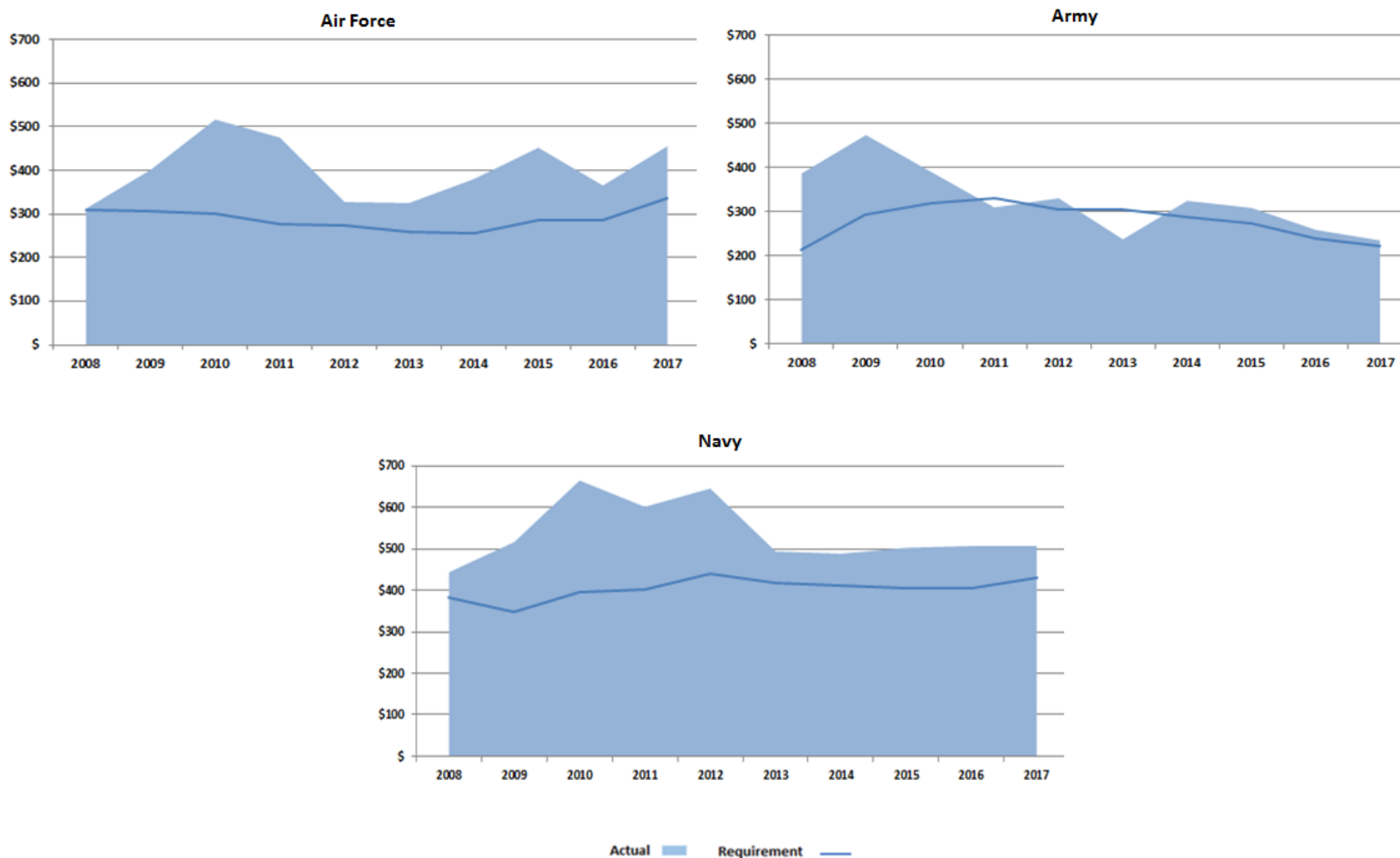


Capital Investment Program (CIP)

- ➔ The CIP is a component of the depots' working capital funds.*
 - Capital investments made through the CIP are depreciated over their useful life.
 - Purchases funded through the other components of the depot's working capital fund are expensed on the depot's income statement.
- ➔ CIP Restrictions:
 - Equipment purchased through the CIP must cost more than \$250,000 and have a useful life of two or more years.
 - Construction projects must be less than \$750,000; larger projects can only be funded through appropriations.
 - The depots must use a pre-investment economic analysis (net present value) to justify proposed investments of over \$1M.

* Naval Shipyards are funded with appropriated funds.

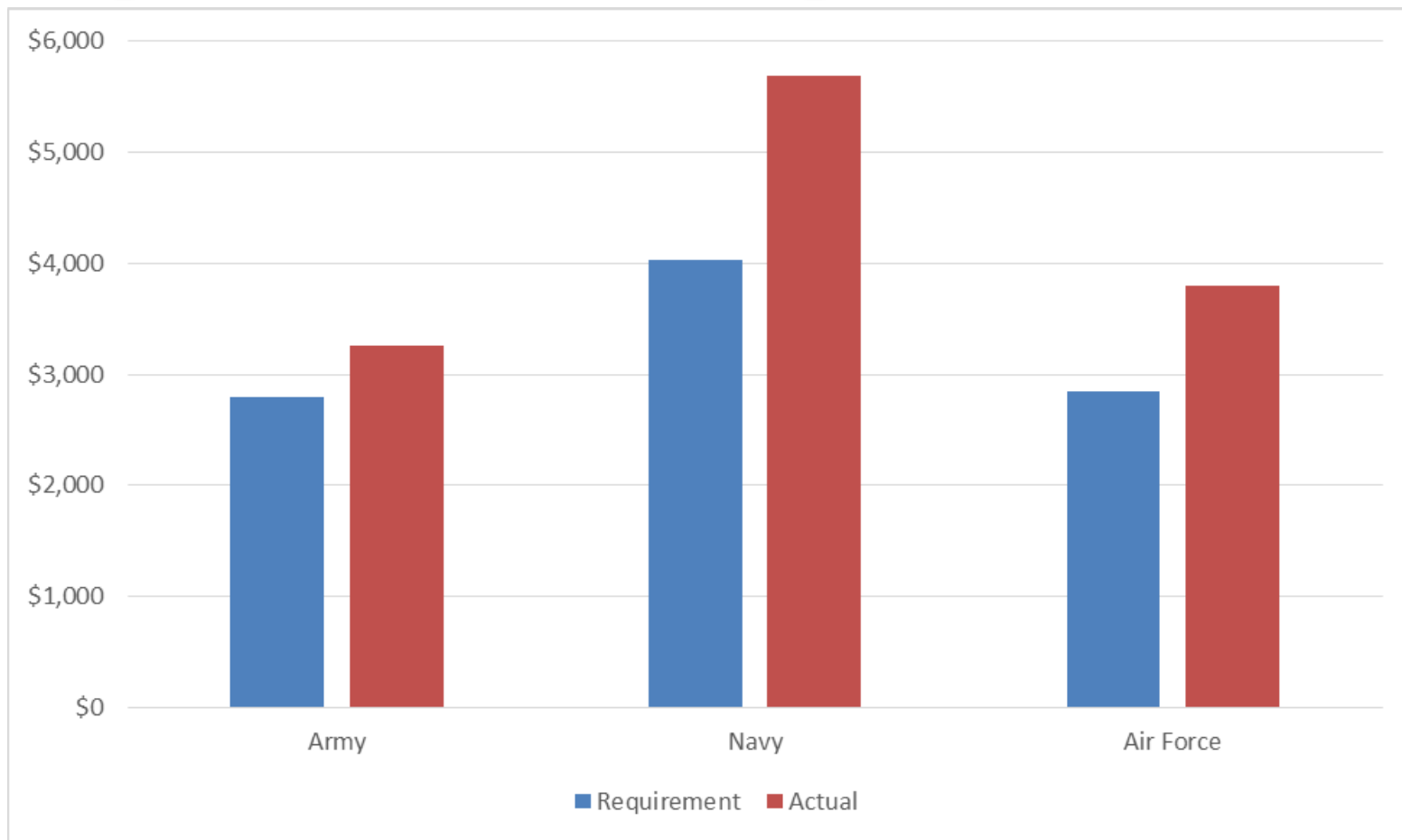
Departments Often Exceed Minimum Requirement



Capital investment in depots by military department (\$millions), actual and requirement, 2008-2017



Capital Investment: Required vs. Actual



Cumulative capital investment in depots (\$ millions) since law went into effect.



1. Capabilities Remain Suboptimal

- ➔ GAO has criticized all three service's strategic plans for not using a "results-oriented management framework" to help ensure that they were positioned to meet future needs.
- ➔ Often, the distribution of capabilities is uneven.
 - At one Army depot, state-of-the-art equipment and some new facilities stand out against a landscape of ageing buildings, near-obsolete testing equipment, and shelves of metal parts left exposed to the elements.
- ➔ In 2017, GAO found that Navy's shipyards and equipment remain in poor condition, with backlogged maintenance projects having grown by 41% over five years to \$4.86 billion, requiring 19 years to complete.
 - At Pearl Harbor and Puget Sound, equipment used for repair work is left outside routinely because no covered storage space is available.
 - The shortage of habitable space at Norfolk Shipyard has led to the construction of temporary, double-stacked office facilities.

2. Assumptions are Questionable

- ➔ The rationale and empirical basis for 6% statistic are questionable.
 - The 6% statistic comes from a single study by the Air Force
 - Commercial firms make capital investments to further business objectives
- ➔ Limiting qualifying investments to “covered” depots appears arbitrary
 - The revenue generated by *all* of a service’s depots forms the basis for the 6% investment requirement.
 - Much of this requirement is generated by software maintenance, yet many of the facilities that perform this work are not “covered”.
- ➔ Some proposals to alter this requirement are also problematic.
 - There have been proposals to base investment solely on revenue generated by “core” workload, or to eliminate OCONUS funding.
 - Narrowing the basis for investment has the potential to mask investment needs if “non-core” or OCONUS-generated workloads increase relative to core workload.



3. CIP Approval Process is Long and Bureaucratic

- ➔ In some cases, CIP expenditures must be approved by a 4-star command.
- ➔ Turnaround time often extends to three years...
 - The depot is required to update its analysis to reflect changing costs and assumptions.
 - Updated quotes often exceed the 10% tolerance permitted by law.
 - Depot must then develop a new analysis or “down scope” the project.
- ➔ Depots may try to reduce the cost of a capital asset to below \$250,000 to avoid CIP process.
 - There are examples of facilities and pieces of equipment that cost just under \$250,000 at some depots.
 - These investments are likely suboptimal solutions.
- ➔ Similarly, the \$750,000 cap on CIP-funded construction projects can result in groups of small facilities when larger facilities would have been better economic investments.



4. Narrow Investment Definition is Confusing

- ➔ 2012 NDAA changed definition of capital investment: “The capital budget of a depot includes investment funds spent *to modernize or improve* the efficiency of depot facilities, equipment, work environment, or processes in direct support of depot operations, *but does not include funds spent for sustainment of existing facilities, infrastructure, or equipment.*”
- ➔ New definition has generated some confusion what constitutes a capital investment.
 - For example, the replacement of the roof and fire suppression system of an aircraft hangar; renovation of an avionics repair shop; or a new corrosion control building would NOT be considered capital investments under the law.
- ➔ In effect, the law limits the depots’ ability to finance certain projects through the CIP—projects that in the commercial sector would be depreciated over time.

“New” investment in the depots may come at the expense of much-needed maintenance.



5. Strategy Does Not Drive Investment

- ➔ Capital investment levels within the services are generally not reflective of top-down, department-level, strategic planning...
 - ...but of bottom-up, depot-level decision making.
 - These two approaches are *not* mutually exclusive. The depots are in the best position to make local capital investment decisions—so long as a high-level strategic investment plan is in place.

- ➔ All three services have argued that the investment requirement deprives them of needed flexibility; yet, in some instances, they appear not to be taking advantage of the flexibility that already exists.
 - Services claim 6% is unnecessary burden—yet, Navy and Air Force regularly exceed requirement.
 - The 6% minimum often is also imposed at lower levels: Shipyards, Fleet Readiness Centers, Marine Corps adhere to 6%; requirement imposed on subordinate commands by Army's AMC.

6. Fixed Funding has Advantages

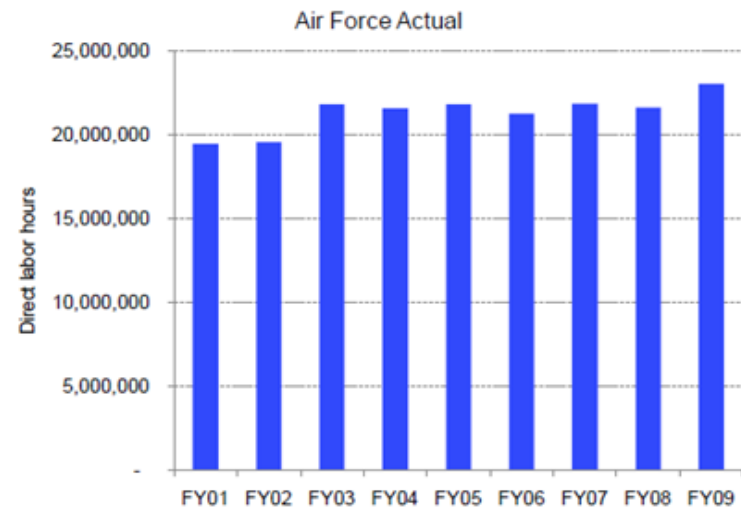
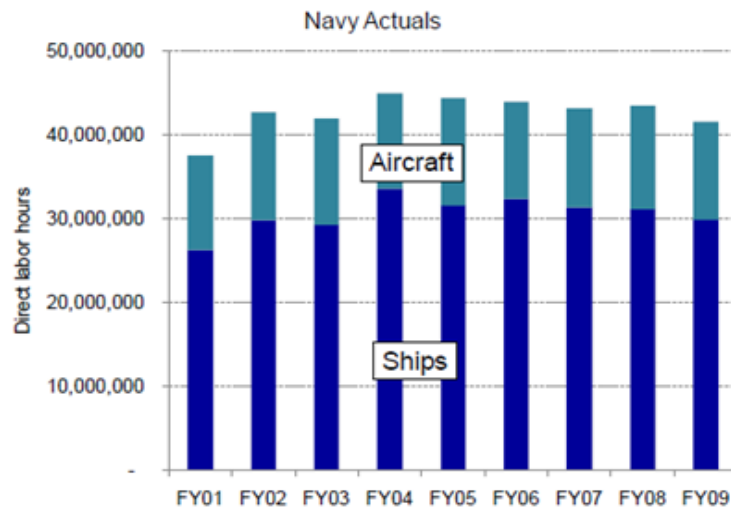
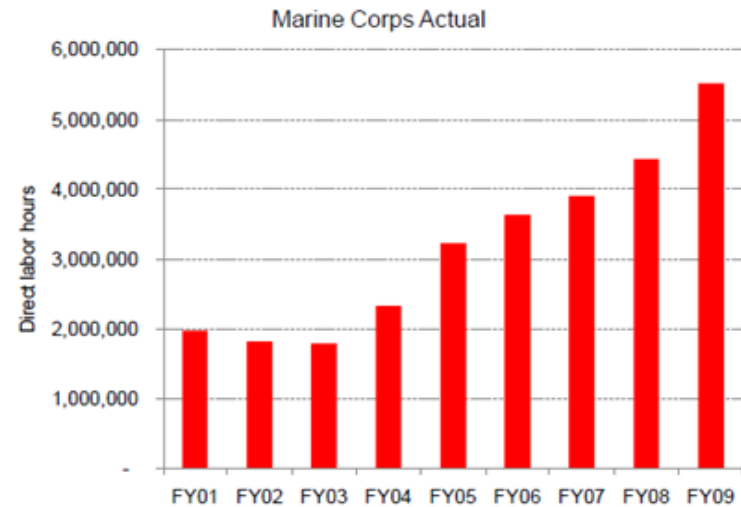
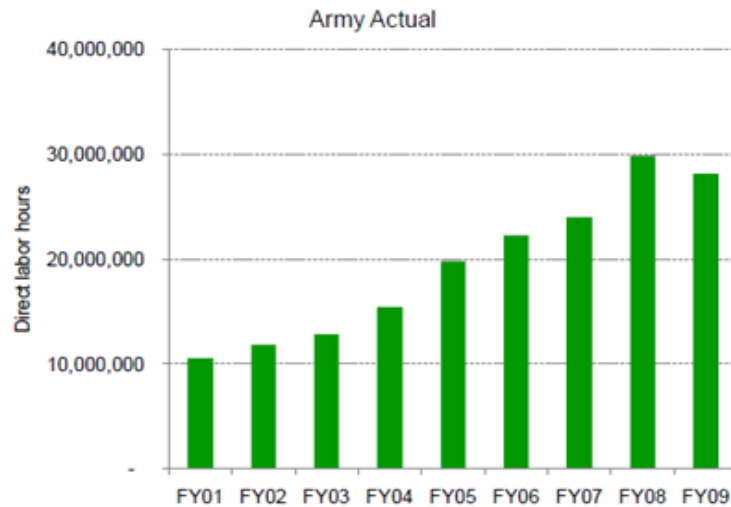
- ➔ In some areas, earmarking may be the only effective tool available.
 - The public sector simply does not have the ability to invest effectively in public infrastructure.
- ➔ Earmarking some percentage of revenue for capital investment is not unique to the military depots.
 - Missouri and Utah have separate “Facilities Maintenance Reserve Funds” to dedicate general fund dollars toward maintenance.
- ➔ There is a general consensus that earmarking “benefit taxes” or user fees for related expenditures is preferable.
 - Taxes on gasoline, which are then used to fund transportation infrastructure, are often cited as examples.
 - This type of earmark links supply and demand, but also it informs the taxpayers of the cost of the services that they are consuming.
- ➔ On this basis, the depot investment requirement might be viewed quite favorably.



7. Requirement Timeframe is Problematic

- ➔ The law can force overinvestment during a period of declining resources.
 - The challenge is even greater given that capital investment within the Army has been financed primarily through the working capital fund (rather than appropriations) in recent years.
 - The Army has found it challenging to meet the investment requirement (based on higher wartime revenues) following a drawdown from combat (when workloads are declining).
- ➔ OSD has considered a forward-looking calculation method that bases the 6% requirement on total average revenue from the *previous year, the execution year, and the following three years* (“Forward-Looking”).
 - An investment basis that relies heavily on projected revenue.
- ➔ The Army has proposed that the 6% requirement be based on average revenue from the *previous year, the execution year, and the future budget year* (“Straddle”).
 - During periods of steadily declining revenues, this method generates minimum investment requirements lower than those generated by the current method, but higher than what would be generated by OSD’s forward-looking method.

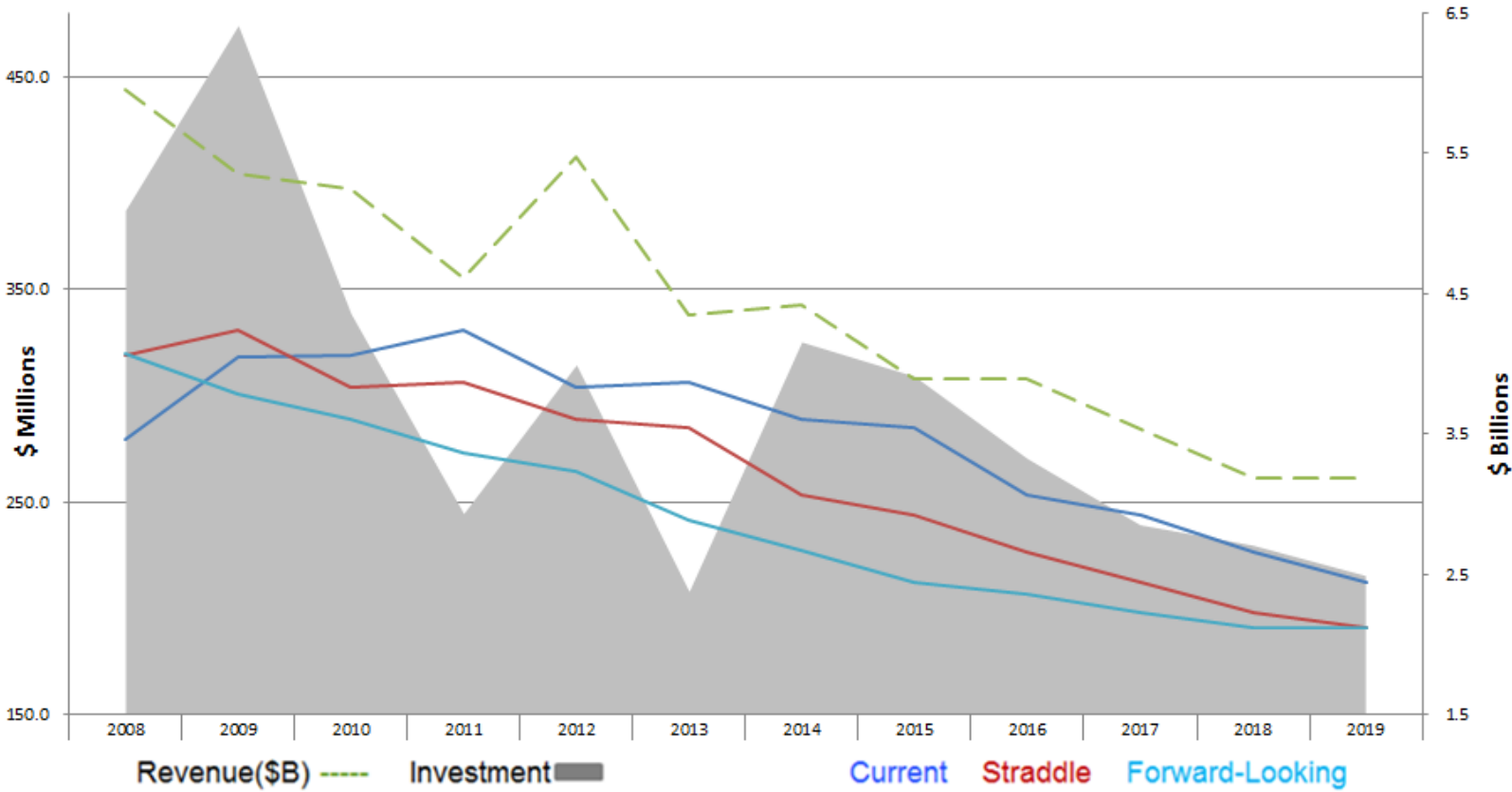
Steady vs. Unsteady Workloads



Depot workloads by military service during period of conflict (2001-2009)



Timeframe Basis for Requirement



Comparison of the current, “straddle”, and forward-looking methods used to calculate the Army’s investment requirement during a period of declining revenues.

Straddle approach better aligns investment requirement with changes in revenue.



Recommendations (1)

➔ **Develop and implement detailed strategic plans to properly guide capital investment.**

- Without department-level plans, it will be challenging to pursue, develop, and execute integrated series of investments that ensure that the depots are able to provide the needed capabilities.

➔ **Maintain—but modify—the minimum investment requirement.**

- In the absence of dedicated funding, history suggests that the depots will be neglected.
- Base the six percent target on revenue from the preceding year, the year of execution, and the following year (“straddle”) to better align requirement with changes in revenue.
- Allow the military departments to credit any annual investment in excess of six percent to the future minimum requirement to increase flexibility and facilitate strategic planning.

➔ **Continue to base the minimum investment requirement on total revenue.**

- Proposals to base investment solely on revenue generated by “core” workload, or those that seek to eliminate from consideration OCONUS funding represent misguided attempts to reduce the required *level of investment* by narrowing the *basis for investment*.



Recommendations (2)

- ➔ **Modify the minimum investment requirement so that qualifying investments are not limited to the covered depots.**
 - The revenue generated by *all* of a military department's depots forms the basis for the investment requirement; hence, *all* of a department's depots should be made eligible for investment under the requirement.
- ➔ **Widen and clarify the definition of capital investment.**
 - Relying on a standard definition of capital investment helps ensure that the investment requirement does not inadvertently lead to increases in deferred maintenance.
- ➔ **Streamline the CIP approval process.**
 - The approval process for depot-level capital investments should be made flatter and faster. The structure of the working capital fund system may already provide sufficient constraints on capital investment decision-making at the depot level.
- ➔ **Examine the potential for funding larger construction projects through the CIP.**
 - Funding larger construction projects through the working capital funds would provide military customers, the DoD, and Congress with a better understanding of the true cost of organic depot maintenance and repair.