

USAWC STRATEGY RESEARCH PROJECT

**TRANSFORMING THE ARMY'S LEGACY PERSONNEL SYSTEMS**

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## ABSTRACT

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The Army Transformation Roadmap acknowledges that "cultural transformation of people must precede transformation of processes, organizations, and technology." The technology available today is clearly capable of all the personnel processes required to support soldiers. If these processes do not change however, the technology used in personnel transformation will be nothing more than "webification" of archaic practices.

This paper focuses on personnel transformation as the strategic enabler for Army transformation. It will start by outlining the current state of the existing personnel systems to portray transformation challenges, including the fact that they represent the single largest IT maintenance bill in the Army. It will then identify key functional issues requiring change before transformation can occur, showing how these issues are a microcosm of the larger functional environment. These issues will then be linked to the current migration path, including the concept and implications associated with requirement for all services to migrate a single DOD system. Before concluding, the paper presents a procedural approach for change where technology is a means rather than an end, giving it significantly more value as an Army Transformation enabler. It concludes by postulating that personnel transformation will significantly impede Army Transformation if the ongoing effort fails.



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## TRANSFORMING THE ARMY'S LEGACY PERSONNEL SYSTEMS

“Army readiness is inextricably linked to the well-being of our people. Our success depends on the whole team – soldiers, civilians, families – all of whom serve the nation. Strategic structures provide soldiers and families the resources to be self-reliant both when the force is deployed and when it is at home.”<sup>1</sup>

- General Erik K. Shinseki

The epigraph above was taken from General Erik Shinseki's arrival speech, given when he assumed his duties as Army Chief of Staff (CSA) in June 1999. Linking readiness to the well-being of the individuals making up the Army team set the tone to identify people as the most important asset in the Army. While such a statement may seem obvious, highlighting people with that spotlight is a cornerstone of the Army's transformation effort. Indeed, people are the first of three interdependent elements in the Army Vision, and the Army Transformation Roadmap acknowledges that “cultural transformation of people must precede transformation of processes, organizations, and technology.”<sup>2</sup>

The purpose of this paper is to examine the current set of personnel systems with an eye on how these systems can be transformed to support the operational and institutional “Big Army” transformation effort currently underway. Transforming the Army's organizations, equipment, and doctrine will fail if the Army fails to transform the personnel systems designed to support those organizations with the Army's most valued entity – soldiers. The method by which the personnel community transforms will have significant resource implications, depending on how this transformation is effected. This effort focuses on personnel transformation as the strategic enabler for the Army Transformation, and is divided into four segments.

The first segment outlines the current state of the existing legacy systems as a means of portraying challenges to this transformation effort. The highlighted issues will significantly impact any effort to transform the legacy personnel systems, regardless of the path chosen. Much of the system-level discussion will revolve around the Headquarters, Department of the Army (HQDA) level database because the Army's Deputy Chief of Staff (DCS, G1, henceforth referred to as G1) uses it as the data source to fulfill the Army's Title 10, United States Code (10 USC) personnel reporting responsibilities.<sup>3</sup>

The second segment identifies several key functional issues requiring change before transformation can occur. These issues are embedded in the culture of the personnel

community, and are a microcosm of the larger functional environment governing the personnel systems. As stewards of its processes, the personnel community needs to focus on modernizing how it does business. Without changing those processes, the technology used in personnel transformation will be nothing more than what might be referred to as “webification” of archaic practices. That is, putting a web front end on an application as the single concession to modernization.

The third segment outlines the present systems migration path. This will include the concept and implications associated with the Department of Defense (DOD) requirement for all services to migrate to the Defense Integrated Military Human Resource System (DIMHRS), which will serve as the DOD combined personnel and pay application.

The final segment, assuming the Army can overcome or at least mitigate challenges identified in the previous segments, presents an approach for change which is procedural rather than technical. The emphasis is on functional procedures because technology, as a means rather than an end, has significantly more value as an Army Transformation enabler.

The Army Transformation Roadmap defines transformation as “a continuous process that creates a culture of innovation, which in turn seeks to exploit and shape the changing conduct of military competition.”<sup>4</sup> This discussion on Army Transformation starts with people and the Army’s ability to transform the systems designed to sustain their force structure. Again, technology should be treated as merely a means to an end; important to leverage, but not the transformation driver. Today’s technology is clearly capable of all the processes required to support soldiers throughout their tenure in the Army. Identifying the desired and required processes and implementing them in technology is more crucial than the technology itself. In other words, identifying the functional requirements is more critical to the process and, at least in the case of the personnel systems, has been harder to accomplish than applying technology to produce the solution.

## **THE CURRENT SYSTEM**

Lieutenant General John LeMoyné, the Army’s G1, identifies personnel transformation as the strategic enabler of Army transformation. He clearly states his intention to accomplish personnel systems’ transformation ahead of the Army’s transformation effort, so when transformation occurs, the personnel community is already there, waiting.<sup>5</sup> This is a monumental task, given the current state of the personnel systems and the bureaucracies supporting them. This section will outline six issues which impede efforts to transition the

personnel systems into the Army's Information Technology (IT) enterprise. The first two issues, numbers of systems and funding, are tied closely together.

#### NUMBERS OF SYSTEMS AND FUNDING

According to a June 2001 Office of the Director of Information Systems for Command and Control, Communication, and Computers (DISC4) briefing to Dr. Oscar (Acting Army Acquisition Executive (AAE)), Army business systems account for sixty cents of every Army dollar spent, where the single largest group are personnel systems, accounting for 182 out of 574 of the identified systems.<sup>6</sup> The briefing goes on to identify existing shortfalls in moving to an enterprise system, including lack of funding, failure to identify an enterprise solution for business systems, and the heretofore single-minded focus on the war-fighting systems. These points will be discussed in later sections. In July 2001 testimony before the Senate Personnel Subcommittee (for the Committee on Army Services), the Deputy Chief of Staff for Personnel (DCSPER), LTG Timothy Maude, stated that "the Army employed over 350 Army personnel automation and information systems in support of 1,170 processes."<sup>7</sup> The numerical difference between the DCSPER and DISC4 numbers can be attributed to the fact that the Y2K database counted only those systems deemed operationally "critical." The DCSPER, meanwhile, counted many stand-alone applications and databases as systems as a means to identify the function set required to support the full spectrum of personnel activities. There are two key points here. First, maintenance for this group of personnel "systems," whether true "systems" or stand-alone applications, is the single largest IT maintenance bill in the Army.<sup>8</sup> Second, only a handful of these systems fall under the purview of the acquisition community (e.g., are organized under a product or project manager (PM), in a Program Executive Office (PEO), or receive HQDA secretariat-level oversight from the Army Acquisition Executive).<sup>9</sup> This means in most cases, the formal oversight required for acquisition systems does not occur. Without casting aspersions, it is safe to say resource and funding implications on a multimillion dollar family of systems functioning without oversight are significant. In discussing the oversight required, it then becomes important to consider the genesis of the Army Acquisition Corps (AAC). The AAC was formed to provide the Army with a professional acquisitionist. Specifically, the AAC process was developed to provide the Army a group of individuals educated in and familiar with the laws, regulations, and nuances inherent in the set of processes associated with developing, testing, and fielding equipment. These individuals also have to understand the additional intricacies involved for programs scaled in sufficient size to provide the Army with everything from modern "c-rations" to precision-guided munitions and digitization of the battlefield. The

laws and related oversight requirements, meanwhile, were put into place as a means to ensure DOD and, more importantly, the U.S. taxpayer, get value for their defense dollar. Most programs, regardless of their dollar values, were specifically removed from their origins in the functional communities because those communities did not have the acquisition-related backgrounds and education thought necessary to allow them to act as good stewards of the tax dollars given to those programs. In terms of the IT systems, the Army has come to understand the value of an enterprise approach. Two key attributes of an enterprise approach are the potential monetary savings it garners, and the ability to establish standardized Army and joint processes. For reasons that are not clear, the personnel IT systems have stayed away from the acquisition umbrella and therefore have not benefited from the Army's move to an enterprise approach.

The Army Knowledge Management (AKM) policies originating from the Chief Information Officer / Deputy Chief of Staff, G6 (CIO/G6), has started to address the enterprise shortcomings Army-wide in the form of the AKM Memorandums. These policies, signed by the Secretary of the Army (SECARMY), CSA, Vice Chief of Staff, Army (VCSA), or the CIO/G6, take IT funding away from organizations whose systems do not adhere to the Army Enterprise concept outlined in the AKM Strategic Plan.<sup>10</sup> Many times, however, funding for these systems is so deeply embedded in the sponsoring organizations' funding line, distinguishing it from non-IT funding has been difficult, if not impossible. This is certainly true in the personnel systems, where many of the systems, applications, and databases have never had a separate funding line, and for purposes of establishing an enterprise solution, the funding trails give little indication these systems ever existed. The G1's Personnel Transformation Task Force (PT TF) adds another management layer which inadvertently serves to shield these personnel systems and their funding lines from CIO/G6 visibility. This further complicates the CIO/G6's ability to track IT funding, because neither the task force nor the G1 have visibility over funding execution. Both organizations can see money being spent, but cannot necessarily determine what the expenditures buy.

The remaining four issues, addressing slightly more technical aspects, are somewhat more nebulous to define than funding and system numbers, and present obstacles almost as significant. Two of these issues, data definition and system documentation, are closely interrelated.

## DATA DEFINITION AND SYSTEM DOCUMENTATION

The vast majority of these systems, applications, and databases are considered “legacy”. That is, they are candidates for phase-out, upgrade, or replacement. This is usually due to one or more of the following: they have no or limited vendor support for maintenance and upgrades; they are not interoperable with other systems, and the cost to make them interoperable is prohibitive; functional requirements Business Process Reengineering (BPR) has rendered the application obsolete, and the cost to change the code is prohibitive. For example, it may be cheaper to start from scratch than to change the existing code. Legacy systems have a greater range of data definitions than optimal, which requires an Application Program Interface (API) be written to act as a “translator” between applications. Oftentimes APIs, like the applications themselves, date back to the 70s and 80s, and tracing the documentation is problematic at best. One of the better examples of this in the personnel community family of systems is the Total Army Personnel Database (TAPDB), which falls under the U. S. Total Army Personnel Command (PERSCOM) Information Systems Directorate (known as PERSINS-D).

TAPDB, normally referred to as a single entity, is actually a set of five personnel databases: TAPDB-AE (containing Active Enlisted personnel data), TAPDB-AO (containing Active Officer personnel data), TAPDB-CP (containing Civilian Personnel data), TAPDB-NG (containing Army National Guard (ARNG) personnel data), and TAPDB-R (containing United States Army Reserve (USAR) personnel data). The legacy databases that make up TAPDB run on mainframe computers using the COBOL programming language, important to note only as an age indicator. TAPDB has its own set of data definitions which do not necessarily correlate with either the Army or the Department of Defense (DOD) data dictionaries. In the over twenty-five years of TAPDB existence, the API surrounding TAPDB has grown to accommodate the differences between it and the applications feeding it. One example of the dichotomy between definitions involves state names. The U.S. Post Office uses two-letter abbreviations to annotate state names (e.g., VA for Virginia). This procedure is what both the Army and DOD dictionaries specify for use. TAPDB, however, uses a numerical designation for states’ names, having established a data table for that purpose. All the personnel systems getting data from or passing data to TAPDB have to use a translator to read the correct state name. This particular example is well documented, but there are – literally – hundreds of these rules in TAPDB, and unfortunately, most of this API is not well documented.<sup>11</sup> Modifying the API to accommodate application code changes becomes a complicated undertaking. Such modifications might include simple Commercial Off The Shelf (COTS) software package upgrades (e.g., moving from Windows Explorer Version 5.x to Version 8.0). Add to this the fact that programmers

experienced in the languages used in many of the legacy systems (e.g., COBOL, Ada, etc.) can cost two to three times that of other language programmers, and legacy system maintenance, in addition to being complicated, has become very costly.<sup>12</sup>

#### DATA RECONCILIATION

The fifth issue is data reconciliation. Most of the legacy personnel systems have little or no automated methods to reconcile its data. This has a direct impact on data accuracy in the field-level systems, applications, and databases, and on TAPDB, which serves as the HQDA-level personnel database. This data accuracy impact actually manifests itself on two levels, first with a user sitting at a terminal inputting data, and second when data is externally passed from one application or system to another. Starting with an example at the user-level input, if the system code is not written to automatically compare the input data value against accepted values embedded in the application, a user could enter erroneous data. An example of this is where, absent a coding rule regarding gender, a user could change a male's medical status to pregnant. These types of errors are more infrequent, as system owners have added code to perform the reconciliation.

The more prevalent reconciliation errors occur as data is exchanged externally, which points back to an API. Wherever the possibility of conflicting data values exists, the system API should be coded to translate values into the form acceptable at the receiving application. Where systems are not capable of reconciliation, soldiers are required to correct the data manually, which is extremely burdensome in terms of the manpower required to make these data corrections. Focusing on two circumstances where manual intervention is required, this discussion first describes a specific interaction between two legacy systems and its resulting workload, and follows with a generic description of error resolution at the user level.

TAPDB, as mentioned earlier, serves as the HQDA-level personnel database. As such, it interfaces with any system, application, or database whenever that system either needs data resident in TAPDB, or is one of the systems providing TAPDB with information required at HQDA level. This older legacy system requires information in transactions, which are small data packages collated together in specified formats using a rigid rule-set provided by PERSINS-D. In an effort to minimize manual intervention, TAPDB's extensive API should have translation rules to give and receive data to the systems with which it interfaces. Unfortunately, while the translation rules exist, they oftentimes side in favor of minimizing the TAPDB workload by rejecting transactions which do not match their rigid rule-set. Interaction with the unit-level personnel system provides some of the best examples of this phenomena.

The unit-level personnel system responsible for the majority of Active Army soldier information is called the Standard Installation / Division Personnel System (SIDPERS-3).<sup>13</sup> Another legacy system, SIDPERS-3 will be replaced by the Army Human Resource System (AHR) E-MILPO (referring to “electronic military personnel office”) in March 2003.<sup>14</sup> In the meantime, SIDPERS-3 continues to send and receive transactions with and from TAPDB, which has been the source of some consternation at the Army’s field-level personnel units. The consternation arises from the large amount of reconciliation required by units in response to the transactions rejected by TAPDB. The example involving the way soldiers are accounted for as they move from one location to another (an “arrival”), is discussed in detail in a later section. Another example is where an authorized user goes into the system to change a soldier’s date of rank. There are certain promotions and reductions in the enlisted ranks which are the unit commander’s responsibility, versus those promotions resulting from centralized boards held at HQDA level. However, when an authorized user enters a rank change based on the legal promotion or reduction orders signed by the authorizing commander, TAPDB rejects the transaction. This has resource impacts on several people. First, it costs time and effort for personnel specialists entering the data to contact TAPDB representatives and get the information corrected at the headquarters level system, and more importantly, it significantly impacts the soldier whose rank was being corrected. Either the soldier is unable to get the higher pay level of the new grade, or sometimes worse, in the case of a reduction, the soldier continues to receive the higher pay until the correction is made. The soldier is then forced to repay the government when their rank is finally corrected, oftentimes resulting in a financial hardship for them.

The example given above is one of many involving rejected transactions. At one point, the rejected transactions numbered in the thousands on each installation, although the architecture redesign of SIDPERS-3 into the “SuperServer” reduced, but did not vanquish, the workload considerably.<sup>15</sup> Perhaps more important to note, as part of the E-MILPO development agreement within the personnel community, this new system will be required to develop the same TAPDB transactions SIDPERS-3 currently sends, still vulnerable to TAPDB rejection and the resultant user-level soldier workload.

#### THE PROMISE THAT NEVER WAS

The last of the six issues relevant to the current systems and potentially impacting the personnel system transformation effort is what could be considered the promise that never was. ITAPDB is the Integrated Total Army Personnel Database, and like TAPDB, it belongs to

PERSCOM's PERSINS-D. In concept, it was to replace TAPDB with a real-time, updateable database. It was to consolidate the five current databases (AE, AO, CP, NG, and R) in to this single database, hence the reference to "integrated." Had this been what was delivered, ITAPDB would have been the Army Enterprise Personnel Database referred to in the July / August 2002 issue of Army AL&T Magazine on personnel transformation.<sup>16</sup> As such, it would have been in perfect position to transition Army personnel data, and systems, to the DOD system, DIMHRS. Instead ITAPDB was delivered in October 2002 as a "data store" available to limited functional users as a source of personnel data consolidated from the five personnel databases. The fact that users can, for the first time, go to one source for information on soldiers and civilians from all Army components is a positive step. As a static snapshot-in-time, however, users cannot update it and in fact, are still required to update the mainframe TAPDBs via transactions. ITAPDB development was millions of dollars in the making, over budget, and the watered-down product was delivered a year past the projected schedule.<sup>17</sup> This is relevant to any personnel transformation discussion for several reasons. First, ITAPDB represents the poster-child for why programs require oversight to the degree specified in 10 USC for Major Defense Acquisition Programs (MDAP).<sup>18</sup> While some would argue ITAPDB was and is not considered an MDAP, the counter argument is that it should have been. Governing acquisition in DOD, 10 USC and the DOD 5000 series regulations list certain criteria to designate a program as an MDAP. The funding level is one criterion, referring to the total life cycle cost of the system, and the other is the level of a program's visibility. This is basically a service decision and/or that of the Joint Requirements Oversight Council (JROC).<sup>19</sup> Conceptually, ITAPDB was to be the Army source of personnel data for migration to DIMHRS, "representing the largest deployment of an off-the-shelf human resource software, either commercial or military."<sup>20</sup> As such, it is not unreasonable to require MDAP-level oversight for ITAPDB.

Next, it is important to note one of the key reasons ITAPDB failed to become the single, updateable database encompassing personnel data from all Army components remains unchanged. The biggest challenge to establish a personnel enterprise database is the difference in data definitions between components. Specifically, some of the same data elements used in the Active Army to mean one thing are used for something else in the Reserve Component databases, and may even have different meanings between the USAR and ARNG databases. Additionally, some data elements, while having the same meaning in all three components, may have different values. While additional values can be accommodated, coding is more complicated, and therefore more costly. The data definition problem, added with the

associated cultural reluctance to change, represents a significant impediment for any effort to transform Army personnel systems.

Finally, attempts to bring the components together are hampered by the specific 10 USC direction given to separate Reserve Component IT funding from Active Component funding.<sup>21</sup> While General Shinseki credited former CSA General Dennis Reimer with completing the effort to solidify the Army from what were three separate pieces, the law on IT funding clearly delineates between components.<sup>22</sup>

## **FUNCTIONAL ISSUES**

This segment, harkening back to where the Army Transformation Roadmap acknowledges “cultural transformation of people must precede transformation of processes, organizations, and technology”, focuses on functional processes.<sup>23</sup> Change has to start with the processes before technology can be brought to bear in the transformation process.

Starting with an examination of the current personnel system structure and the associated Rules Of Engagement (ROE), this segment suggests remedies short of the technical information system overhaul required for the long-term viability of the personnel systems through transformation. Specifically, there exist today, several long-standing ROE which, if brought forward, will cripple the personnel transformation effort. These ROE are sometimes codified in regulations, and other times not. Two of these ROE are considered the most critical and require change on the level of business system re-engineering.

## **PERSPECTIVE**

“One Does Not Equal One.”

—LTG Timothy Maude, USA

The above epigraph from LTG Timothy Maude cuts directly to the heart of perhaps the biggest dichotomy in the personnel community today. This dichotomy, highlighted as the first of the two ROE under discussion, has its genesis in 10 USC and the legal mandate to man the force.<sup>24</sup> The intent of the law is for the service chiefs to man the program force as codified in the force structure identified by the service operators. In the Army’s case, this is the Deputy Chief of Staff, (DCS,G3, henceforth referred to as G3). The G1 has two functions in this: the accounting function, which ensures the Army is at the correct end strength at the end of the fiscal year for the 10 USC requirement to report to Congress, and the responsibility to distribute the force.<sup>25</sup> That is, the G1 assigns soldiers according to the G3’s force structure. Both of

these functions rely heavily on force structure in terms of organizational positions (spaces), rather than individual soldiers (faces). Put another way, the G1 is concerned with what the Army should look like (structure), versus the reality facing commanders daily, which is what the Army actually looks like (names). Field commanders are held accountable for *personnel asset visibility*. That is, 10 USC gives the commander responsibility and authority (including Uniform Code of Military Justice authority) to account for their soldiers, as opposed to the positions these soldiers encumber in the force structure.<sup>26</sup> Implementing these divergent requirements can be confusing.

The G1, via its Field Operating Agency, PERSCOM, assigns soldiers to the installation level. So, for example, 100 soldiers may be assigned to one of the divisions at Fort Hood. However, the installation G1, using the field-level system, knows one of the battalion commanders in the other division is short, or lacking soldiers, which will be critical for their upcoming deployment. With agreement from his commander, the installation G1 reassigns 50 of the 100 inbound soldiers from one division to the other. Though all 100 soldiers are physically located on Fort Hood, 50 are now in a unit different from that assigned by PERSCOM, presumably placed into valid positions. There are numerous variations to this example, many of which are invisible to PERSCOM until they go to move a soldier for whatever reason. This results in balanced books at installation but not Major Army Command (MACOM) levels, or vice versa, depending on perspective. The commander in the field, meanwhile, remains solely concerned about the soldiers assigned to the unit, which is anywhere up to four layers removed from the PERSCOM assignment. The field commander needs to know where the soldiers are, whether they have been paid, whether their training is up to date, whether they have their field equipment, what UCMJ offenses they might have committed, who is in the hospital, whether or not they can deploy, etc. Further, the commander is required to report these dispositions in significant detail in the monthly Unit Status Report (USR). These monthly reports start at the battalion and separate company level, and are consolidated up to the division and corps levels. While the personnel portions of the reports are prepared by the unit G1, or equivalent, the USR itself is an operational requirement and therefore a G3 responsibility.

Continuing this vignette, imagine a staff officer now working for the Army G1 in the Pentagon. The officer has just been tasked to accompany the G1 to the CSA's monthly USR reconciliation meeting. During this meeting, the infantry division commander at Fort Hood reports through the USR that they are short 40 infantry soldiers in the division. The CSA turns to the G1 and asks how this can be, and wants to know what is being done to fix the problem. The staff officer whispers to the G1 that Fort Hood is showing an "overage" of 17 infantry

soldiers, and admits their office does not know the unit strength of that unit (or any unit below MACOM / installation level) because they do not use the field-level system that accounts for faces versus spaces. The headquarters level system distributes soldiers according to force structure requirements, and as far as the staff officer knows, the requirement was met when they sent 100 infantry soldiers to Fort Hood. The G1 fires the staff officer. And when the G1 finds out the headquarters level distribution system they rely on contains information from 30 to 45 days old, he tries to find a way to demote the staff officer; as a former commander, the G1 knows the USR information provided by the G3 is no more than two weeks old. All this, and the staff officer still has not told the G1 the only way to ascertain a specific unit strength is to call the unit in Texas and ask them to share their strength numbers. The same would apply if the unit in Texas had deployed to Afghanistan or Kuwait, though perhaps without a phone conveniently close-by.

Moving back to transformation, take the case of the mismatch in strength numbers and multiply it by the strength of the Army, which is approximately 1.2 million soldiers. Both HQDA and the installation and/or division commander at Fort Hood are working within their 10 USC authority. The field commander has deliberately assigned soldiers contrary to direction received from the HQDA distribution system, but is exercising a commander's 10 USC authority and responsibility to "man the force." The bottom line is the field commander's picture of personnel, as depicted by the field-level system, is different from that depicted by the HQDA level system, and as long as the two continue to focus on their respective "interests," the pictures will not match. In recognizing the need for transformation in the personnel systems, the late LTG Maude often said "One does not equal one."<sup>27</sup>

There is nothing which specifically divides the 10 USC "man the force" mandate into these two camps. Given this division has occurred, the Army needs to rectify the problem by recognizing the field commanders' requirements for personnel asset visibility. Failing that, using HQDA level numbers generated by that system in a transformed, DOD-level system (i.e., DIMHRS) will prove disastrous for the Army, since the proposed DIMHRS application focuses on personnel asset visibility, vice force structure.<sup>28</sup> The answer remains one single database, giving the Army one single people-picture from which to read.

#### PERSONNEL ASSET VISIBILITY – PROCESS OWNERSHIP

The second ROE requiring change prior to transformation is related to the 10 USC discussion on manning the force. The G1 distributes the force according to G3 priorities. Moving further into the assignment process, soldiers are assigned to a Unit Identification Code,

or UIC, which normally goes to the battalion or separate company level. As the Army's missions and the spectrum of war have broadened, the Army has come to use task organizations as a means to tailor units to fit specific requirements. The process of task organization helps to identify and match requirements with personnel whose skills and training are commensurate with whatever requirement has been identified. In most cases of task organizing and structuring a force for specific capabilities, a UIC tailor-made for this task-force does not exist and has to be created before any soldiers can be assigned against that unit. The issue becomes who has the authority to create a UIC. Currently, only the G3 has that authority. The G3 directs that the unit or task force be created, specifies the desired force structure in number and type (e.g., one armor brigade commander, three 13M-trained soldiers, etc.), and sets the implementation date. Working within the shortened timeline normally associated with task organizations, the personnel community works hard to assign the right mix of soldiers to meet the G3's priorities. However, since the G3 did not direct the UIC-making person to complete the bureaucratic process associated with UIC creation, soldiers cannot be assigned because the unit does not exist. This example gives the impression of bureaucracy amiss, suggesting the possibility of a fix by addressing existing processes. Unfortunately, the issue is considerably more complicated.

Moving back to the commander's responsibilities for personnel asset visibility, consider the case of the Congressional requirement to account for Personnel Tempo (PERSTEMPO), referring to deployment rates. The Army is required to report soldiers deployed and non-deployed time away from home.<sup>29</sup> The owning unit to which a soldier is assigned is in a position to account for a soldier's PERSTEMPO time. The relationship of this accounting requirement to UICs becomes one of how to keep track of and report this time away from home. Going back to the task organization scenario described above, oftentimes a combat arms unit (i.e., an infantry battalion) will deploy with what are called slices of support elements, referring to required portions of engineer, signal, field artillery assets, etc. It is not unusual for some portion of the infantry battalion to *not* deploy for any number of reasons, including, for example, the limited size of the task force, or soldiers in the unit who are non-deployable due to illness. From a pure accounting standpoint, moving entire units of people in a systems environment to a deployed status for purposes of counting days away from home is much simpler than having to enter hundreds of social security numbers or soldier names. Since none of the units are deploying in their entirety, the systems solution is to create a UIC for that deployment and move the deploying soldiers into that UIC. However, if this event is local (i.e., a training exercise held "on-post"), the operations community is not going to create a separate UIC to accommodate this, or any other, temporary accounting requirement. A bureaucratic merry-go-round results when the

G1 community, saddled with the PERSTEMPO requirement, is held hostage by the G3 to account for personnel because the G3 is the organization authorized to create a UIC. Numerous examples unrelated to PERSTEMPO abound. This process is a source of considerable frustration with what many field commanders and the personnelists supporting them perceive as an inflexible bureaucracy.<sup>30</sup> Field commanders need to be able to create a UIC, or to create an entity with similar properties to properly account for their personnel. Without that capability, technology advances will not give commanders the flexibility they require to account for their soldiers.

### **CURRENT SYSTEMS MIGRATION PATH**

The personnel systems are in something of a state of flux in terms of migration for a number of reasons. First, ITAPDB was to have played a large part in this migration. When ITAPDB moved from being a single, updateable database to a read-only data store requiring updates from the legacy TAPDBs, it was effectively cut out of the transformation effort. ITAPDB, in fact, is one of the systems DIMHRS will replace.<sup>31</sup> Another reason for the state of uncertainty in the migration plan is that many of the systems are now prohibited from making code changes to their software. The DIMHRS development, fielding and implementation plan mandated a code moratorium on the eighty-eight legacy systems it is scheduled to replace. The systems interfacing with those legacy systems were included as well. The moratorium applies to all services, and is necessary to ensure DIMHRS developers are not coding against a baseline which has changed.<sup>32</sup> Because TAPDB interfaces with so many systems and applications, the moratorium encompassed most of the personnel community systems. This is probably a positive occurrence, if for no other reason than to act as a forcing function. Instead of planning software changes, the community can focus on where to go from today.

After a positive start in trying to identify a viable migration path, the G1 PT TF appears to have abandoned its initial strategy. In February 2002, the G1 sponsored a personnel transformation industry day. The original intent of this industry day was to encourage industry interest and participation in personnel transformation; one of the lures was the tantalizing possibility of a lucrative IT contract in the near future. Using a seminar-like forum, the G1 invited industry to hear the senior personnelists outline their view of the current system and challenges, the role personnel transformation plays in Army Transformation, and where, in general terms, personnel transformation should be headed in support of the Interim and Objective Force transformation efforts. In turn, the G1 invited industry to participate in helping solve these challenges by answering a formally released Request for Information (RFI). The

RFI responses could be either a twenty page submission addressing the full scope of personnel transformation, or a twelve page submission focusing on a specific area or topic. The turnout was impressive, with an attendance list that included many, if not most, of the defense industry's IT contractors, as well as some non-defense IT contractors. The follow-on responses to the RFI were also impressive, but there appears to be no effort to make use of the suggestions submitted. By the March 2002 deadline, over forty proposals were submitted in response to the G1 RFI. However, since that time, the responses have lingered, their distribution limited, and the G1 has not published a Request For Proposal (RFP) for their personnel transformation effort.

With regard to the industry day discussion, one of the more significant issues is personnel community migration as an impediment to transformation. It was interesting, but not surprising to note the most frequently asked questions during industry day centered on whether or not this effort had funding within the Army's Program Objective Memorandum (POM). Unfortunately, the answer was "partial" because the G1 had internally reallocated some IT funding within their funding lines. Most of the effort however, was listed against an "unfunded requirement," or UFR.<sup>33</sup> Slightly more complicated than indicated, the personnel IT systems represent a significant maintenance bill. The personnel community is in a conundrum regarding funding. The major portion of their IT funding goes to maintenance of legacy systems. From a larger perspective, the Army is in an unprecedented era of program cancellations and scale-backs. Over the past three budget years, the Army has terminated over forty programs and reduced funding on over twenty-five programs in an effort to fund the transformation effort, with more terminations and cut-backs likely.<sup>34</sup> By rights, some of the 320 to 350 referenced personnel systems should be terminated and will be eventually. However, because the soldier remains the G1's first responsibility, the functions legacy personnel systems perform must continue. While there have been some small pockets of movement towards modernization, with organizations taking it upon themselves to develop a modern application or mini-system, these have been largely uncoordinated with any enterprise effort. In fact, the whole of the personnel transformation migration plan relies on movement to DIMHRS.

Initially replacing forty-three Army systems, the latest DIMHRS schedule lists an Army Initial Operational Capability (IOC) in fourth quarter, Fiscal Year 2004.<sup>35</sup> The Navy's PEO for IT defines DIMHRS as follows:

The mission of DIMHRS (Pers/Pay) is to identify, design, develop, prepare for deployment, and maintain standard systems to support military personnel and

pay. This includes a single, standard military personnel and pay system from field level data collection to headquarters data base management system that meets Office of the Secretary of Defense (OSD) defined requirements and, where appropriate, Service-specific requirements for all components. The overall goal for DIMHRS (Pers/Pay) is to provide fully integrated military personnel and pay capability for all Components of the Military Services of the Department of Defense with an initial operating capability by 2004. The program's major objective is to enhance mission support to the war fighter and Service Departments by eliminating or reducing data collection burdens, solving operational problems, conserving resources, improving delivery of services, and enhancing readiness.<sup>36</sup>

Following Desert Storm in 1991, DOD recognized the myriad of stovepipe personnel systems throughout each of the services were incapable of supporting how DOD would conduct military operations in the future. That is, since the personnel systems within the respective services were not capable of interfacing with each other, they certainly could not support joint service operations. From this recognition, DIMHRS was born. There have been problems as might be expected when attempting to join four services' personnel and pay functions into a single entity. However, at this point there appears to be progress, although there are significant change requirements for each of the services. Relating back to the earlier discussion on perspective and the difference between what the field commander saw versus what HQDA looked at, one of the more significant changes facing the Army is the fact that DIMHRS will manage people by position, as done in civilian industry, rather than by unit or MACOM/installation. This will require the Army to change how they manage soldiers. Whether the Army and the personnel community specifically, will be flexible enough to produce the tactics, techniques, and procedures (TTP) and have them in place prior to DIMHRS implementation, remains to be seen.

In a slightly unorthodox move, the DIMHRS program office selected a COTS software package, PeopleSoft 8, in March 2001, before it had selected an integrating contractor.<sup>37</sup> PeopleSoft had been previously chosen by several large corporations as the replacement software package for their human resource functions. In September 2002, the DIMHRS program office awarded a development contract for the Phase I (Assessment Effort) to five IT contractors. At the end of Phase I, expected in December 2003, the program office will select one of the five as the integrating contractor for the entire effort. The program manager has said they "are looking for an integrator with proven experience at implementing PeopleSoft at a corporate level."<sup>38</sup> Program office emphasis has been on using PeopleSoft out-of-the-box, meaning they want to minimize customizations made to PeopleSoft as much as possible. The DOD Inspector General (IG) report from June 2002 expressed the concern that "while adoption

of the COTS package inherent personnel management processes will diminish the need for modifications, DIMHRS program officials also need to adequately consider how well those processes will meet user requirements.<sup>39</sup> Because PeopleSoft was chosen as the software package so long ago, several organizations have had opportunities to either study the software, or go into implementation themselves, benefiting others with their lessons learned.

The Army Human Resource System (AHRs) program office, responsible for SIDPERS-3, E-MILPO, and several other personnel applications, conducted a study of PeopleSoft to compare the out-of-the-box functionality with the functionality provided in the legacy SIDPERS-3 system. This has been referred to as a fit gap analysis, where the purpose is to identify functionality gaps and determine the resource implications resulting from those gaps. According to the June 2002 DOD IG report on DIMHRS, “the DIMHRS program manager anticipated that the COTS software would require about 10 to 20 percent modification to obtain the minimum functionality required by DOD users.”<sup>40</sup> It is important to note the PM AHRs analysis was limited to a comparison against the existing functionality in a single legacy system. Considering DOD’s human resource management responsibilities go beyond that of corporate America, the results of the AHRs analysis were not surprising. Specifically, the study found that 25% functionality matched out-of-the-box, 25% would match with some slight modifications to the software, and 50% of the functionality resident in the legacy personnel system had no match in PeopleSoft.<sup>41</sup> This is not to say PeopleSoft would not work, or even that it was a bad choice in software packages. The study should serve as notice to the defense community, or to at least the Army personnel community, that conversion to PeopleSoft may have some challenges the personnel community should be prepared to address. The June 2002 DOD IG report on DIMHRS specifically addressed this issue in detail, citing “prior DOD experience with COTS-based human resource systems indicated that it may be unreasonable to expect to meet 80 to 90 percent of the required functionality with an “off the shelf” application.”<sup>42</sup> However, the PT TF dismissed much of the AHRs study findings, and has carefully, reiterated their support for PeopleSoft as the DIMHRS software package, including the requirement to minimize out-of-the-box customization. In the meantime, the PT TF was to have been conducting its own fit-gap analysis to determine where shortfalls might occur, but whatever results they may have generated have not yet been made public.

One of the organizations implementing PeopleSoft 8 as their human resource application is the Defense Intelligence Agency (DIA). The Director of Human Resources for DIA stated that PeopleSoft 8 can do anything any organization needs it to do – for a price. The Director went so far as to say that, given another opportunity, DIA would start off by discarding entirely their

current system and processes so they could move directly to People Soft 8. They would thereby limit customization by addressing it as an add on process at the end of their conversion, using it only for those critical processes clearly not available in the software package.<sup>43</sup> Customization is extremely expensive, which is why the DIMHRS program office is trying to limit it as much as possible. The bottom line is that the services need to minimize service-unique functionality and be prepared for wholesale departure from the way they currently conduct personnel and pay-related business. As mentioned earlier, change has to start with processes before technology can be brought to bear in the transformation process. The question becomes one of whether the Army has made that cultural shift in the mindsets of its employees to recognize process change is required and inevitable.

### **RECOMMENDED APPROACH**

What follows is a three-step approach to transformation that makes some assumptions about the Army's ability to change the cultural mindsets referred to previously. Specifically, the assumption is that the Army will be successful in changing the personnel community mindset at the risk of failing to transform its personnel systems in a timely enough manner to support both the Army Transformation and the mandated move to DIMHRS.

The first step that needs to occur is to move the personnel systems out from the functional community and into the acquisition community, complete with the associated requisite oversight actions and reviews. The personnel community will likely rail at such a suggestion, citing the poor example of SIDPERS-3 and the over-budget and past-schedule examples associated with events prior to that program's Milestone III decision in 1998.<sup>44</sup> However, close inspection of the events leading up to the milestone decision reveals specific causes for the problems experienced by this program.

First, no one from either the functional community or the material developer side, including the pre-Milestone III product manager and PEO, held the functional community accountable, or at least raised a red flag, for requirements changes occurring throughout system development and continuing almost unabated up to the Milestone III decision point.<sup>45</sup> Additionally, the chief engineer most closely associated with the architecture must share some blame for not identifying significant flaws inherent in its design. The hardware-starved personnel community desired this design because it put much-needed workstations in the hands of their users. However, the result was over 4000 workstations Army-wide requiring synchronization for the system to properly represent an accurate strength accounting picture. Synchronization of 4000 computers, while possible in theory, is very difficult to make happen, and more so on the scale

of once or twice-daily as required for SIDPERS-3. Synchronization for SIDPERS-3 occurred through a custom coded, batch-mode transaction processor which would process transactions off-line, during off-hours.<sup>46</sup> This prevented the application software from performing any real-time data entry integrity checks, referred to earlier in the section on data reconciliation. The result was significant and continuous data errors and validity problems across the architecture. And finally, while many are quick to blame the SIDPERS-3 contractors as desiring more to make money than deliver a working product, the SIDPERS-3 integrating contractor was a government/Army organization.

While there are certainly examples of failed acquisition efforts, the state of the personnel IT systems cannot be attributed to those failures. For the most part, the current state of these systems was self-inflicted from within the personnel community. But the Army has its share of responsibility too. By focusing solely on war-fighting, it ignored events in the non-war-fighting communities. The logistics community's systems were in much the same state in which the personnel community now finds itself. It has only recently begun to make improvements. In the long term, of course, this has been detrimental to all soldiers, including the war-fighters, and the Army has a price to pay to correct the problem.

Going back to the funding issue as the best tactile indicator showing the community's investment, the personnel system's current IT budget is estimated to be between \$200M – 250M annually.<sup>47</sup> If nothing else, the Army community at large should recognize the dividends that could be realized if the maintenance bill could be cut in half. If the personnel community were provided a family of systems as part of the larger Army enterprise effort, the Army could reap significant funding gains for use with the Interim and Objective Force development efforts. These gains would be realized as the labyrinth of hundreds of stovepipe personnel systems were replaced. So, while there always needs to be a war-fighting focus, this focus does not obviate the need to correct long overdue deficiencies in the non-war fighting systems. This has become more critical in this era of budget cuts, especially when such corrections would likely free up scarce funding which could be redirected to the war fighter.

The second in the three-step approach to transform the personnel systems is, on paper, simple. There are realistically two possible paths for this step. The first is the clean slate approach. This is the preferred approach because it is likely to take less time than the second possibility. The clean slate approach is where the personnel community determines what functions are required to support a soldier throughout the soldier life-cycle, enlistment through separation. Those conducting the functionality determination must remove themselves totally from how business is conducted now. They must also identify and separate those functions

conducted and/or monitored by the DOD system, and those conducted by the Army system. The product is what gets coded in the new system, and the legacy systems are shut off.

The second possible path is no less complicated, requiring a thorough analysis of the existing functionality in the legacy systems. It entails coming up with a plan to transition off the old systems while figuring out what functionality soldiers and their families need now and for tomorrow. That is, examine all the applications, databases, and systems, and decide which functionality is critical and must be maintained. Applying a BPR formula of threes, each application will be placed in one of three categories: 1) Critical functionality that must be brought forward into the new system, 2) Functionality and/or whole systems that can be discarded, and 3) Legacy systems (containing necessary functionality) modern enough to be capable of being ported to interface with the new system, at least until the functionality can be replicated elsewhere and the legacy system can be discarded. This is not going to be a clean and neat process for the personnel systems, as many of them perform duplicative functions. However, this is a necessary step for the personnel community to stop hemorrhaging maintenance dollars on these antiquated systems.

The third step, closely aligned with the second, is to once and for all, establish a single corporate database for Army personnel, including all three components, and both military and civilian employees, with the possible addition of contractors. This step will likely be the most difficult to undertake, given the cultural schism between components, and the fact that the G1 cannot control Reserve Component funding, either in appropriation or execution. Establishing this database is necessary, in addition to the DOD DIMHRS effort, because there will likely always be service-unique functions, or even data elements the Army wants to keep track of that are of no interest or value to DOD. One which immediately comes to mind is a soldier's eye-piece prescription for use as protective mask inserts. DOD is not likely to keep track of that level information, but that level of information is necessary for commanders to take care of their soldiers.

Work on this corporate database has actually already started, under the ITAPDB effort. The physical process of establishing data definitions, and the cost associated with a data migration effort, will be complicated, and painful. It will also be costly, both in terms of manpower and money. Should the Army choose not to develop a corporate database, it will be held hostage to first, the legacy mainframe TAPDB, which is supposed to be replaced by DIMHRS and second, by whatever dataset DIMHRS uses. Neither of these is in the best interest of the soldiers the personnel systems are designed to support.

## CONCLUSIONS

The personnel community has gone to great lengths in the past two to three years to try and reinvent itself, including efforts to reduce its footprint in the battle space. The information provided in this paper indicates the community is also talking about personnel transformation for its legacy systems, but whether or not it is committed to transforming them remains to be seen. The single most difficult obstacle to overcome is the entrenched ideology of “but we have always done it this way.” The fact that the DOD software package of choice is an off-the-shelf product makes that ideology more than obsolete; it makes it an incredible impediment to change.

The number of 320 to 350 applications, databases, and systems provides too many opportunities for “rice bowls,” and nothing in transformation points to those rice bowls being able to survive, much to the dismay of their owners. This gives rise to rice bowl owners being increasingly protective, even defensive, of their territory. Everyone can argue that there would not be that number of personnel systems if the systems provided accomplished their assigned mission. However, the Army needs the personnel community to not only forget that argument – it needs them to become the fervent disciples of transformation required to kill those hundreds of systems. The starting point remains identifying what functions are truly required for the Army to support its soldiers from the point prior to enlistment through the end of that enlistment or retirement. The smartest way to approach it would likely be the clean slate approach described earlier. In terms of time, the Army is at the point where it should not even be a question of what *existing* functions, performed by *existing* systems, are needed. The question is one whose answer delineates what personnel functions soldiers need just before they raise their right hand to give their oath until the time they separate into civilian life. The Army owes them modern and accurate processes, and the personnel community owes those processes to the Army.

The Army has passed the crossroads of transformation. It is no longer deciding which path to take, but danger lies in the fact that the Army might not be prepared to fully support itself on its chosen path. The personnel community has to be flexible enough to change almost everything about its current processes, and follow closely with systems change from a technical perspective. To date, that has not happened, and though there have been fits and starts hinting it, there does not seem to be a clear plan in the personnel community to manage the magnitude of change required to truly transform. Without changing the myriad of personnel processes currently embedded in day-to-day business, personnel transformation will remain stagnant, and the personnel community will significantly impede Army Transformation. Should that occur, the

war-fighting community would be required to pick up the reins and finish the task. Then it would be more than just legacy systems made obsolete in the personnel community.

WORD COUNT=8,904



## ENDNOTES

<sup>1</sup> General Eric K. Shinseki, "Remarks Delivered by General Eric K. Shinseki," Army Chief of Staff Arrival Ceremony 22 June 1999; available from Army Link News <<http://www.dtic.mil/armylink/news/Jun1999/s19990623welcomespeech.html>>; Internet; accessed 28 November 2002.

<sup>2</sup> U.S. Department of the Army, The Army Vision, available from <<http://www.army.mil/vision/default.htm>>; Internet; accessed 16 September 2002. U.S. Department of the Army, The Army Transformation Roadmap, June 2002, 15.

<sup>3</sup> The Armed Forces, U.S. Code, Subtitle A, Part I, Chapter 2, Section 115a, and Subtitle B, Part I, Chapter 303, Sections 3010 and 3013.

<sup>4</sup> U.S. Department of the Army, Army Transformation Roadmap, Department of the Army Publication (Washington, D.C.: U.S. Department of the Army, June 2002), 15.

<sup>5</sup> LTG John LeMoyne and Frank Childress, "Personnel Transformation: Not a Question of Whether...But How Soon," Army Acquisition, Logistics, and Technology (AL&T) Magazine, July - August 2002, 2.

<sup>6</sup> U.S. Department of the Army, "Roadmap to Interoperability in Army Business Systems," briefing slides, Washington, D.C., Director of Information Systems for Command, Control, Communications and Computers (DISC4), U.S. Department of the Army, 11 June 2001.

<sup>7</sup> LTG Timothy J. Maude, Army Personnel Posture Fiscal Year 2002, Hearing before the First Session of the 107<sup>th</sup> Congress, Statement Before the Personnel Subcommittee, Committee on Armed Services, United States Senate, 18 July 2001. LTG LeMoyne, 4. In the ALT Magazine article on Personnel Transformation, LTG LeMoyne cited 320 as the number of personnel systems. The Army Y2K Database listed all critical IT systems whose operation beyond the Y2K "rollover" was required for operational necessity. Those personnel entities listed included true "systems," as well as stand-alone applications and databases which cannot be considered true systems. U.S. Department of Defense, Defense Acquisition University (DAU) Glossary of Defense Acquisition Terms and Acronyms; available from <<http://deskbook.dau.mil/jsp/glossarydet.jsp>>; Internet; accessed 2 January 2003. The Defense Acquisition University (DAU) Glossary of Defense Acquisition Terms and Acronyms defines systems as: 1) the organization of hardware, software, material, facilities, personnel, data, and services needed to perform a designated function with specific results... and 2) A combination of two or more inter-related pieces of equipment arranged in a functional package to perform an operational function or to satisfy a requirement. LTG Maude is referred to as the Deputy Chief of Staff for Personnel (DCSPER) because his assignment ended prior to the Army Staff reorganizations occurring in 2001 and 2002.

<sup>8</sup> U.S. Department of the Army, "Roadmap to Interoperability in Army Business Systems," briefing slides, Washington, D.C., Director of Information Systems for Command, Control, Communications and Computers (DISC4), U.S. Department of the Army, 11 June 2001. U.S. Department of the Army, "Goal 3 In-Progress Review to CIO," briefing slides, Washington, D.C.,

Chief, Information Infrastructure Division, CIO, U.S. Department of the Army, 2 July 2002. References to the Director of Information Systems for Command and Control, Communication, and Computers (DISC4) vice the Chief Information Office/G6 (CIO/G6) are deliberate, since this particular briefing occurred prior to the Army Staff reorganizations occurring in 2001 and 2002.

<sup>9</sup> The Armed Forces, Subtitle A, Part II, Chapter 87, Subchapter III, Section 1733.

<sup>10</sup> Secretary of the Army Thomas E. White and Army Chief of Staff General Eric K. Shinseki, "Army Knowledge Management (AKM) Guidance Memorandum Number 1," memorandum for the Army, Washington, D.C., 8 August 2001. Director of Information Systems for Command, Control, Communications and Computers Lieutenant General Peter M. Cuvillo, "Army Knowledge Management (AKM) Implementing Instructions Number 1," memorandum for the Army, Washington, D.C., 18 September 2001. Acting Army Acquisition Executive Oscar, Kenneth J., and Army Vice Chief of Staff General John M. Keane, "Achieving Operability Among Army Systems," memorandum for the Army, Washington, D.C., 4 October 2001. Secretary of the Army Thomas E. White and Army Chief of Staff General Eric K. Shinseki, "Army Knowledge Management (AKM) Guidance Memorandum Number 2," memorandum for the Army, Washington, D.C., 19 June 2002.

<sup>11</sup> According to the past two directors of the U.S. Total Army Personnel (PERSCOM) Personnel Information Systems Directorate (PERSINS-D), the TAPDB API documentation is almost non-existent. This requires applications interfacing with TAPDB to add code to accommodate the legacy databases, oftentimes in system language that cannot take advantage of efficiencies available in later-day language (e.g., C++, Object Oriented, etc.).

<sup>12</sup> U.S. Department of Defense, Defense Acquisition University (DAU) Glossary of Defense Acquisition Terms and Acronyms; available from <<http://deskbook.dau.mil/jsp/glossarydet.jsp>>; Internet; accessed 2 January 2003. Ada is a High Order language (HOL) developed for DOD in the late 1970's as a standard language for DOD mission-critical systems. Named in honor of the Countess of Lovelace, Augusta Ada Byron, who worked with Charles Babbage's ill-fated 19th century mechanical calculator called the Analytical Engine. The Ada programming language is no longer mandatory for DOD use, but many legacy systems were written in an older version of Ada and have found the upgrade process to be prohibitively expensive. These systems require programmers knowledgeable in that particular version of Ada to modify their source code. Current versions of Ada are widely used because it is a flexible and versatile programming language especially suited to larger, more complicated IT systems.

<sup>13</sup> SIDPERS-3 is the Active Army personnel System of Record (SOR), and wartime personnel system for the Reserve Components (USAR and ARNG). For Unit Status Report (USR) purposes, the Reserve Components are required to be fully trained on the application for "go to war" purposes, and the equipment is considered "ERC A" (Equipment Readiness Code A) (per AR 220-1, currently being rewritten).

<sup>14</sup> E-MILPO delivery was scheduled for 1 March 2003 (the original delivery date was 15 Dec 02, but was moved to 1 March 2003 based on problems the contractor was experiencing with the data conversion process). As of 30 January 2003, the application had passed the final

Software Qualification Tests (SQT) and the government accepted it for fielding. However, on 7 February 2003, LTG LeMoyne, Army G1, decided to delay delivery indefinitely based on the Army's current deployment posture.

<sup>15</sup> Installation and division units received a monthly "351 Report" listing rejected transactions. The SuperServer architecture redesign eliminated transactions internal to SIDPERS-3 entirely, but did not change the way TAPDB sent and received transactions.

<sup>16</sup> Gregory J. Fritz and Dr. Kenneth L. Bedford, "The Army Enterprise Personnel Database," Army Acquisition, Logistics, and Technology (AL&T) Magazine, July - August 2002, 23.

<sup>17</sup> According to the G1 Information Management Office (IMO), ITAPDB development costs exceeded \$25M. In FY01, the (then) DCSPER, LTG Timothy Maude, reallocated \$3M from the SIDPERS-3 product line to PERSCOM for ITAPDB development; additional funds were also redirected for ITAPDB from other programs under the DCSPER, totaling \$4M, but I was unable to obtain specific information identifying which programs were decremented.

<sup>18</sup> The Armed Forces, Subtitle A, Part IV, Chapter 144, Section 2430.

<sup>19</sup> U.S. Department of Defense, Operation of The Defense Acquisition System, Department of Defense Instruction 5000.2 (Washington, D.C.: U.S. Department of Defense, 30 October 2002), Tab B, 14.

<sup>20</sup> Joab Jackson, "Uncle Same Wants You ... For \$1.5B HR System," Washington Technology Online 10 December 2001 [journal on-line]; available from <[http://216.70.54.91/news/16\\_18/cover/17551-1.html](http://216.70.54.91/news/16_18/cover/17551-1.html)>; Internet; accessed 19 September 2002.

<sup>21</sup> The Armed Forces, Subtitle A, Part 1, Chapter 2, Section 114.

<sup>22</sup> General Eric K. Shinseki, "Remarks Delivered by General Eric K. Shinseki," Army Chief of Staff Arrival Ceremony 22 June 1999; available from Army Link News <<http://www.dtic.mil/armylink/news/Jun1999/s19990623welcomespeech.html>>; Internet; accessed 28 November 2002.

<sup>23</sup> U.S. Department of the Army, The Army Vision, available from <<http://www.army.mil/vision/default.htm>>; Internet; accessed 16 September 2002. U.S. Department of the Army, Army Transformation Roadmap, June 2002, 15.

<sup>24</sup> The Armed Forces, Subtitle B, Part I, Chapter 305, Section 3032.

<sup>25</sup> *Ibid*, Subtitle B, Part I, Chapter 305, Section 3032, and Subtitle B, Part I, Chapter 2, Section 115a.

<sup>26</sup> *Ibid*, Subtitle B, Part II, Chapter 331, and Subtitle A, Part II, Chapter 47.

<sup>27</sup> (Then) MG Maude, as the ADCSPER, made this remark during his Personnel Transformation Briefing to assembled Personnel Leader's Meeting audience, April 2000, Greenville, SC. Later, as the DCSPER, LTG Maude often made this remark to acknowledge the information he saw as G1 would never be what the commander in the field saw in the field-level system. LTG Maude was killed in the Pentagon on 11 September 2001.

<sup>28</sup> U.S. Department of Defense, Defense Integrated Military Human Resource System (DIMHRS) Operational Requirements Document (ORD), U.S. Department of Defense Document (Washington, D.C.: Joint Program Management Office, June 2001), 4-11.

<sup>29</sup> National Defense Authorization Act (NDAA), Fiscal Years 2000, 2001 and 2002, Sections 586 and 991. These NDAA require all services to report PERSTEMPO time. U.S. Department of Defense, Automated Extract of Active Duty Military Personnel Records, U.S. Department of Defense Instruction (DODI) 1336.5 (Washington, D.C.: U.S. Department of Defense, 5 May 2001), Enclosure 5. DODI 1336.5 outlines the PERSTEMPO reporting requirements.

<sup>30</sup> My thirty-nine month experience as Product Manager for the Army Human Resource System (AHRS), speaking with many field commanders and the personnelists supporting them throughout the Army, indicates extreme frustration with the inflexible bureaucracy.

<sup>31</sup> Department of Defense, Defense Integrated Military Human Resource System (DIMHRS) Operational Requirements Document (ORD), Appendix H, 2 July 2001. Originally, ITAPDB was specifically listed as one of the systems to be replaced by DIMHRS. The most recent version of the ORD lists only TAPDB, vice both ITAPDB and TAPDB as being replaced by DIMHRS. However, since ITAPDB changed from the concept of a single, real-time, updateable database to a data store updated from the legacy TAPDB, the DIMHRS replacement of TAPDB will effectively render ITAPDB obsolete.

<sup>32</sup> Under Secretary of Defense David S.C. Chu, "Defense Integrated Military Human Resource System for Personnel and Pay (DIMHRS (Pers/Pay)) – Controlling Systems Initiatives and Modifications," memorandum for Secretaries of the Military Departments, Washington, D.C., 19 August 2002.

<sup>33</sup> U.S. Department of the Army, "Questions and Answers for Army Personnel Transformation", Personnel Transformation Industry Day Q&A posted on the Defense Contracting Command, Washington Homepage, < <http://dccw.hqda.pentagon.mil/>>.

<sup>34</sup> U.S. Department of the Army, The Army Transformation Roadmap, June 2002, 33-34. In a conversation with Mr. Claude Bolton, Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA(ALT)), 7 February 2003, Mr. Bolton indicated the Army would possibly be cutting an additional 24 programs in the current budget year (Fiscal Year 2003).

<sup>35</sup> U.S. Department of the Navy, "DIMHRS Schedule," available from <[http://www.peo-it.navy.mil/es/c4\\_DIMHRS.asp](http://www.peo-it.navy.mil/es/c4_DIMHRS.asp)>; Internet; accessed 2 January 2003.

<sup>36</sup> U.S. Department of the Navy, "DIMHRS Mission," available from <[http://www.peo-it.navy.mil/es/c4\\_DIMHRS.asp](http://www.peo-it.navy.mil/es/c4_DIMHRS.asp)>; Internet; accessed 2 January 2003.

<sup>37</sup> Joab Jackson, "IBM announces DIMHRS team," Washington Technology Online 6 May 2002 [journal on-line]; available from <[http://216.70.54.91/news/16\\_18/cover/17551-1.html](http://216.70.54.91/news/16_18/cover/17551-1.html)>; Internet; accessed 19 September 2002.

<sup>38</sup> Murray, Bill, "Military HR deal goes to PeopleSoft," Federal Computer Week OnLine 26 March 2001 [journal on-line]; available at <<http://www.fcw.com/print.asp>>; Internet; accessed 19 September 2002.

<sup>39</sup> U.S. Department of Defense, Information Technology: Acquisition and Clinger-Cohen Act Certification of the Defense Integrated Military Human Resources System (Washington, D.C.: U.S. Department of Defense Office of the Inspector General, 28 June 2002), 8, 12, 17-19, 28-30.

<sup>40</sup> Ibid, 4.

<sup>41</sup> Catherine A. McNerney, "PeopleSoft High Level Fit Gap Analysis," briefing slides, Fort Belvoir, Virginia: Army Human Resource System (AHR) Product Management Office, U.S. Department of the Army, 16 October 2001. The AHR Product Management Office directed its primary contractor, Electrical Data Systems (EDS) to compare PeopleSoft functionality with the functionality set contained in the legacy SIDPERS-3. The result was briefed through The Adjutant General (TAG) to the (then) DCSPER Information Management Office (IMO) in October and November 2001. At that time, the DCSPER IMO was part of a reorganization where that office became the core of the Personnel Transformation Task Force (PT TF).

<sup>42</sup> U.S. Department of Defense, Information Technology: Acquisition and Clinger-Cohen Act Certification of the Defense Integrated Military Human Resources System 4,21.

<sup>43</sup> Brigadier General Frederick Wong, Director of Human Resources, Defense Intelligence Agency (DIA), telephone interviews by author, July 2002 – January 2003.

<sup>44</sup> SIDPERS-3 required some \$30M to complete development prior to the pre-Y2K deployment.

<sup>45</sup> U.S. Department of Defense, Operation of The Defense Acquisition System, 8,16.

<sup>46</sup> Timothy Wall <[twall@mitre.org](mailto:twall@mitre.org)>, "Your Sentence," electronic mail message to Catherine McNerney <[catherine.mcnerney@carlisle.army.mil](mailto:catherine.mcnerney@carlisle.army.mil)>, 19 March 2003.

<sup>47</sup> Estimate of \$200M – 250M annually is based on personal experience in the personnel community; I was unable to obtain a number from the office of the G1, in part because they do not necessarily have full knowledge of what is spent on IT within the budget lines of the organizations under their control. This again highlights the fact that they do not have oversight over funding execution.



## GLOSSARY

AAC	Army Acquisition Corps
AAE	Army Acquisition Executive
AC	Active Component
ADCSPER	Assistant Deputy Chief of Staff for Personnel
AE	Army Enlisted (as in TAPDB-AE)
AEIT	Army Enterprise Information Technology
AHRS	Army Human Resource System
AKM	Army Knowledge Management
AL&T	Acquisition, Logistics and Technology
AO	Army Officer (as in TAPDB-AO)
API	Application Program Interface
ARNG	Army National Guard
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics and Technology
BPR	Business Process Review
BRP	Basic Research Plan
CIO	Chief Information Officer
COTS	Commercial-Off-The-Shelf
CP	Civilian Personnel (as in TAPDB-CP)
CSA	Chief of Staff of the Army
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DCS	Deputy Chief of Staff
DCSPER	Deputy Chief of Staff for Personnel
DIA	Defense Intelligence Agency
DISC4 and Computers	Director of Information Systems for Command, Control, Communications and Computers
DIMHRS	Defense Integrated Military Human Resource System
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
E-MILPO	Electronic Military Personnel Office
G1	Deputy Chief of Staff for Personnel
G3	Deputy Chief of Staff for Operations
G6	Deputy Chief of Staff for Information Systems
HQDA	Headquarters Department of the Army
HR	Human Resources
IG	Inspector General
IMO	Information Management Office
IT	Information Technology
ITAPDB	Integrated Total Army Personnel Database
JPMO	Joint Program Management Office
JRIO	Joint Requirements and Integration Office
JROC	Joint Requirements Oversight Council
KM	Knowledge Management
LTG	Lieutenant General
MDAP	Major Defense Acquisition Program
NDAA	National Defense Authorization Act
NG	National Guard (as in TAPDB-NG)
NMS	National Military Strategy

NSS	National Security Strategy
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
PERSCOM	U.S. Total Army Personnel Command
PERSINS-D	Personnel Information Systems Directorate
PERSTEMPO	Personnel Tempo
PL	Public Law
POM	Program Objective Memorandum
PT TF	Personnel Transformation Task Force
QDR	Quadrennial Defense Review
R	Reserve (as in TAPDB-R)
RC	Reserve Component
RCCC	Reserve Component Coordination Council
RFI	Request for Information
RFP	Request for Proposal
ROE	Rules of Engagement
SA	System Administrator
SECARMY	Secretary of the Army
SecDEF	Secretary of Defense
SIDPERS-3	Standard Installation/Division Personnel System –3
SOSA-HR	System of Systems Architecture, Human Resources
SQT	System Qualification Test
S&T	Science and Technology
TAPDB	Total Army Personnel Database
TTP	Tactics, Techniques and Procedures
UCMJ	Uniform Code of Military Justice
UFR	Unfunded Requirement
UIC	Unit Identification Code
USAR	United States Army Reserve
USC	United States Code
USD (P&R)	Under Secretary of Defense (Personnel & Readiness)
USR	Unit Status Report
VCSA	Vice Chief of Staff of the Army
Y2K	Year 2000

## BIBLIOGRAPHY

- Bush, George W. The National Security Strategy of the United States. Washington, D.C.: The White House. September 2002.
- Caterinicchia, Dan. "Army delays HR system." Federal Computer Week OnLine 6 January 2003. Journal on-line. Available at <<http://www.fcw.com/print.asp>>. Internet. Accessed 27 February 2003.
- Cebrowski, Arthur, Vice Director of Transformation. Special Briefing on Force Transformation. Washington, D.C.: Department of Defense, 27 November 2001.
- Chu, David S. C., Under Secretary of Defense. "Defense Integrated Military Human Resource System for Personnel and Pay (DIMHRS (Pers/Pay)) – Controlling Systems Initiatives and Modifications." Memorandum for Secretaries of the Military Departments. Washington, D.C., 19 August 2002.
- Clinton, William J. A National Security Strategy for a Global Age. Washington, D.C.: The White House. December 2000.
- Cuviello, Peter M, Director of Information Systems for Command, Control, Communications and Computers. "Army Knowledge Management (AKM) Implementing Instructions Number 1." Memorandum to the Army. Washington, D.C., 18 September 2001.
- Cuviello, Peter K. <[Peter.Cuviello@hqda.army.mil](mailto:Peter.Cuviello@hqda.army.mil)>. "Senior IT Leaders Meeting." Electronic mail message to senior acquisition leaders. 12 January 2001.
- Davis, Paul K. Transforming the Armed Forces: An Agenda for Change in The Global Century: Globalization and the National Security. Washington, D.C.: National Defense University Press, 2001, 423-442.
- Dorn, Edwin, Howard D. Graves, American Military Culture in the Twenty-First Century, CSIS Report. The CSIS Press: Washington, D.C. February 2000.
- Dorobek, Christopher J. "DOD seeks pay, personnel system; System should help managers make workforce decisions." Federal Computer Week OnLine 4 February 2002. Journal on-line. Available at <<http://www.fcw.com/print.asp>>. Internet. Accessed 19 September 2002.
- Federal Acquisition Streamlining Act of 1994, U.S. Code. 13 October 1994.
- Fritz, Gregory J., and Dr. Kenneth Bedford. "The Army Enterprise Personnel Database." Army Acquisition, Logistics, and Technology (AL&T) Magazine, July - August 2002, 23-25.
- FY02-07 Civilian Human Resources Strategic Plan, Office of the Assistant G1 for Civilian Personnel Policy, <http://www.cpol.army.mil/library/armyplans/sp02-07/index.html> Accessed 10 September 2002.
- Greiner, Michael A., Kevin J. Dooley, Dan L. Shunk, Ross T. McNutt, "An Assessment of Air Force Development Portfolio Management Practices." Acquisition Review Quarterly 2 (Spring 2002):117-142.

- Hamilton, John A., Jr., Jerome D. Rosen, Paul A. Summers, "An Interoperability Road Map for C4ISR Legacy Systems," Acquisition Review Quarterly 1 (Winter 2002):17-31.
- Hawkins, James A., Vice Director, Joint Staff. "Changes to the Requirements Generation System." Memorandum for the Services. Washington, D.C., 7 October 2002.
- Henry, Patrick T. "Leading the investment in Human Potential for America's Army." Army Magazine: October 2000, 51-58.
- Jackson, Joab. "Five picked for first phase of Defense HR project." Washington Technology Online 17 September 2002. Journal on-line. Available from <[http://216.70.54.91/news/16\\_18/cover/17551-1.html](http://216.70.54.91/news/16_18/cover/17551-1.html)>. Internet. Accessed 19 September 2002.
- \_\_\_\_\_. "IBM announces DIMHRS team." Washington Technology Online 6 June 2002. Journal on-line. Available from <[http://216.70.54.91/news/16\\_18/cover/17551-1.html](http://216.70.54.91/news/16_18/cover/17551-1.html)>. Internet. Accessed 19 September 2002.
- \_\_\_\_\_. "Uncle Same Wants You ... For \$1.5B HR system." Washington Technology Online 10 December 2001. Journal on-line. Available from <[http://216.70.54.91/news/16\\_18/cover/17551-1.html](http://216.70.54.91/news/16_18/cover/17551-1.html)>. Internet. Accessed 19 September 2002.
- Kotok, Alan. "Interoperate or Evaporate." O'Reilly XML.com OnLine 12 December 2001. Journal on-line. Available from <<http://www.xml.com/pub/a/2001/12/12/kotok.html?page=2>>. Internet. Accessed 17 September 2002.
- \_\_\_\_\_. "Object Modelers vs. the Angle-Brackets." O'Reilly XML.com OnLine 12 December 2001. Journal on-line. Available from <<http://www.xml.com/pub/a/2001/12/12/kotok.html?page=2>>. Internet. Accessed 17 September 2002.
- LeMoyné, John M., and Frank Childress. "Personnel Transformation: Not a Question of Whether...But How Soon." Army Acquisition, Logistics, and Technology (AL&T) Magazine, July - August 2002, 2-4.
- Maude, Timothy J., Deputy Chief of Staff for Personnel. Army Personnel Posture Fiscal Year 2002 Hearing. Posture Statement presented to the 107 Cong., 1st sess. Washington, D.C.: U.S. Department of the Army, 18 July 2001.
- McNerney, Catherine A. "PeopleSoft High Level Fit Gap Analysis." Briefing slides. Fort Belvoir, Virginia: Army Human Resource System (AHRS) Product Management Office, U.S. Department of the Army, 16 October 2001.
- Merriam-Webster On-Line. Dictionary and Thesaurus. Available from <<http://www.m-w.com/thesaurus.htm>>. Internet. Accessed 5 September 2002 – 22 March 2003.
- Murray, Bill. "DOD pay system hangs in the balance." Federal Computer Week OnLine 23 April 2001. Journal on-line. Available at <<http://www.fcw.com/print.asp>>. Internet. Accessed 19 September 2002.

\_\_\_\_\_. "Military HR deal goes to PeopleSoft." Federal Computer Week OnLine 26 March 2001. Journal on-line. Available at <<http://www.fcw.com/print.asp>>. Internet. Accessed 19 September 2002.

Myers, Richard B., "A Word from the Chairman," Joint Forces Quarterly 31 (Summer 2002):1-7.

National Defense Authorization Act (NDAA), Fiscal Year 2000. U.S. Code. Secs 586 and 991.

\_\_\_\_\_. Fiscal Year 2001. U.S. Code. Secs 586 and 991.

\_\_\_\_\_. Fiscal Year 2002. U.S. Code. Secs 586 and 991.

Onley, Dawn S. "DOD kicks off departmentwide HR systems project." Government Computer News OnLine 23 January 2002. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 19 September 2002.

\_\_\_\_\_. "DOD kicks off departmentwide personnel systems project." Government Computer News OnLine 16 September 2002. Journal on-line. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 19 September 2002.

\_\_\_\_\_. "DOD picks five contractors for pay, personnel systems." Government Computer News OnLine 7 October 2002. Journal on-line. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 27 February 2003.

\_\_\_\_\_. "Incoming." Government Computer News OnLine 4 February 2003. Journal on-line. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 27 February 2003.

\_\_\_\_\_. "Navy and Army take steps to consolidate HR systems." Government Computer News OnLine 27 January 2003. Journal on-line. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 27 February 2003.

\_\_\_\_\_. "Navy to link new military personnel program to NMCI." Government Computer News OnLine 15 January 2003. Journal on-line. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 27 February 2003.

Oscar, Kenneth J., Acting Army Acquisition Executive, and John M. Keane, Army Vice Chief of Staff. "Achieving Operability Among Army Systems." Memorandum for the Army. Washington, D.C., 4 October 2001.

Pollock, Neal. "Knowledge Management in Acquisition and Program Management (KM in the AM and PM)." Acquisition Review Quarterly 1(Winter 2002): 47-65.

Reynolds, John. "AC/RC Integration Item 97-52, Personnel Transformation." Memorandum for Reserve Component Coordination Council (RCCC). Washington, D.C., 1 December 2001.

Rumsfeld, Donald, Secretary of Defense. "Defense Transformation." Speech given at National Defense University. Washington, D.C.: U.S. Department of Defense, 31 January 2002.

Shinseki, Eric K., Army Chief of Staff. "Remarks Delivered by General Eric K. Shinseki." Army Chief of Staff Arrival Ceremony 22 June 1999. Available from Army Link News

<<http://www.dtic.mil/armylink/news/Jun1999/s19990623welcomespeech.html>>. Internet. Accessed 28 November 2002.

\_\_\_\_\_. Army Modernization Plan 2002. Washington, D.C.: U.S. Department of the Army, 2002.

\_\_\_\_\_. "Approval of Army Warfighting Requirements." Memorandum for the Army. Washington, D.C.: U.S. Department of the Army, 19 March 2001.

\_\_\_\_\_. "Army Leadership Notes." Department of the Army meeting held on 26 September 2002. Accessed from <[http://www.doim.army.mil/VirtualLibrary/ALN\\_26\\_Sept.htm](http://www.doim.army.mil/VirtualLibrary/ALN_26_Sept.htm)>. Internet. 28 November 2002.

Snider, Keith F., Frank J. Barrett, Ram Tenkasi. "Considerations in Acquisition Lessons-Learned System Design." Acquisition Review Quarterly 1 (Winter 2002) 67-84.

Temin, Thomas R. "Standardization of practices is key" Government Computer News OnLine 3 June 2002. Journal on-line. Available at <<http://www.gcn.com/print.asp>>. Internet. Accessed 19 September 2002.

The Armed Forces. U.S. Code, Subtitles A and B, Enacted August 10, 1956, Amended 1994.

The Defense Acquisition Workforce Improvement Act (DAWIA) U.S. Code. Defense Acquisition Workforce Improvement Act of 1990, as amended by Section 808, Public Law (PL) No. 106-398, National Defense Authorization Act for Fiscal Year 2001, October 30, 2000: Section 824, PL No. 107-107, December 28, 2001.

U.S. Department of the Air Force. The USAF Transformation Flight Plan, FY 03 – 07. Washington, D.C.: U.S. Department of the Air Force, June 2001.

U.S. Department of the Army. Army Command. Army Regulation 600-20. Washington, D.C.: U.S. Department of the Army, 1999.

\_\_\_\_\_. Army Knowledge Management, Version 2.1. "A Strategic Plan for an Agile Force", Office of the Chief Information Officer (CIO) Publication. Washington, D.C.: U.S. Department of the Army, 8 August 01.

\_\_\_\_\_. Army Transformation Roadmap. Department of the Army Publication. Washington, D.C.: U.S. Department of the Army, June 2002.

\_\_\_\_\_. "Goal 3 In-Progress Review to CIO." Briefing slides. Washington, D.C.: Chief, Information Infrastructure Division, CIO, U.S. Department of the Army, 2 July 2002.

\_\_\_\_\_. "Questions and Answers For Army Personnel Transformation." Defense Contracting Command, Washington (DCCW) publication from the Army G1 Personnel Transformation Industry Day. Washington, D.C.: U.S. Department of the Army. Available from <<http://www.dccw.hqda.pentagon.mil>>. Internet. Accessed 28 November 2002.

\_\_\_\_\_. "Roadmap to Interoperability in Army Business Systems." Briefing slides. Washington, D.C.: Director of Information Systems for Command, Control, Communications and Computers (DISC4), U.S. Department of the Army, 11 Jun 2001.

- \_\_\_\_\_. The Army Human Resources System of Systems Architecture (SOSA HR), Version 2.0 (Extract). Washington, D.C.: Deputy Chief of Staff for Personnel, 1 April 2001.
- \_\_\_\_\_. The Army Vision. Available from <<http://www.army.mil/vision/default.htm>>. Internet. Accessed 16 September 2002 – 17 March 2003.
- \_\_\_\_\_. Unit Status Reporting. Army Regulation 220-1. Washington, D.C.: U.S. Department of the Army, 1 September 1997.
- U.S. Department of Defense. 2001 Basic Research Plan (BRP). U.S. Department of Defense Publication. Washington, D.C.: U.S. Department of Defense, April 2001.
- \_\_\_\_\_. Automated Extract of Active Duty Military Personnel Records. U.S. Department of Defense Instruction (DODI) 1336.5. Washington, D.C.: U.S. Department of Defense, 5 May 2001).
- \_\_\_\_\_. Defense Integrated Military Human Resource System (DIMHRS) Operational Requirements Document (ORD). U.S. Department of Defense Document. Washington, D.C.: Joint Project Management Office, 2 July 2001.
- \_\_\_\_\_. Defense Acquisition Education, Training and Career Development Program. Department of Defense Directive 5000.52. Washington, D.C.: U.S. Department of Defense, 25 October 1991.
- \_\_\_\_\_. Defense Acquisition University (DAU) Glossary of Defense Acquisition Terms and Acronyms. Available from <<http://deskbook.dau.mil/jsp/glossarydet.jsp>>. Internet. Accessed 5 September 2002 – 17 March 2002.
- \_\_\_\_\_. “Defense Integrated Military Human Resources System.” Fiscal Year 2001 Annual Report for the Office of the Director, Operational Test and Evaluation. Available from <[http://www.globalsecurity.org/military/library/budget/fy2001/dot-e/annual\\_report.html](http://www.globalsecurity.org/military/library/budget/fy2001/dot-e/annual_report.html)>. Internet. Accessed 2 January 2003.
- \_\_\_\_\_. “DIMHRS Overview.” Briefing slides available from Office of the Under Secretary of Defense (Personnel and Readiness), Joint Requirements and Integration Office (JRIO), <[http://www.gulflink.osd.mil/mrk/mrk\\_refs/n27en137/www\\_mpm\\_osd\\_mil.html](http://www.gulflink.osd.mil/mrk/mrk_refs/n27en137/www_mpm_osd_mil.html)>. Internet. Accessed 27 February 2003.
- \_\_\_\_\_. Information Technology: Acquisition and Clinger-Cohen Act Certification of the Defense Integrated Military Human Resources System. Washington, D.C.: U.S. Department of Defense Office of the Inspector General, 28 June 2002.
- \_\_\_\_\_. Interim Defense Acquisition Guidebook. Department of Defense Guidebook (formerly DODI 5000.2-R). Washington, D.C.: U.S. Department of Defense, 30 October 2002.
- \_\_\_\_\_. Knowledge Management and Information Technology (Know-IT Encyclopedia). Program Executive Office for Information Technology Publication. Fort Belvoir, VA: Defense Acquisition University, September 2002, First Edition.
- \_\_\_\_\_. National Military Strategy of the United States of America (pre-decisional draft). Washington, D.C.: U.S. Department of Defense, 19 September 2002.

- \_\_\_\_\_. Operation of the Defense Acquisition System. Department of Defense Instruction 5000.2. Washington, D.C.: U.S. Department of Defense, 30 October 2002.
- \_\_\_\_\_. Quadrennial Defense Review Report. Washington, D.C.: U.S. Department of Defense, 30 September 2001.
- \_\_\_\_\_. Resource Center Guidebook. Department of Defense Directive 5000. Available from <<http://DOD5000.dau.mil>>. Internet. Accessed 16 September 2002 – 17 March 2003.
- \_\_\_\_\_. Science and Technology Strategy. Department of Defense Publication. Washington, D.C.: U.S. Department of Defense, May 2000.
- \_\_\_\_\_. The Defense Acquisition System. Department of Defense Directive 5000.1. Washington, D.C.: U.S. Department of Defense, 30 October 2002.
- \_\_\_\_\_. Transforming Military Operational Capabilities. Transformation Study Report. Washington, D.C.: U.S. Department of Defense, 27 April 2001.
- U.S. Department of the Navy. "DIMHRS Homepage." Available from <[http://www.peo-it.navy.mil/es/c4\\_DIMHRS.asp](http://www.peo-it.navy.mil/es/c4_DIMHRS.asp)>. Internet. Accessed 2 January 2003.
- \_\_\_\_\_. Forward ... From the Sea: The Navy Operational Concept. Policy on Navy Operational Primacy. Washington, D.C.: U.S. Department of the Navy, March 1997.
- \_\_\_\_\_. "SPAWAR Awards DIMHRS Development Contract." News release from U.S. Department of the Navy Space and Naval Warfare Systems Command. San Diego: U.S. Department of the Navy, 12 September 2002. Available from <<http://www.spawar.navy.mil>>. Internet. Accessed 19 October 2002.
- U.S. General Accounting Office, Report to the Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate "Best Practices, Capturing Design and Manufacturing Knowledge Early Improves Acquisition Outcomes." Washington, D.C.: U.S. General Accounting Office, July 2002.
- Wall, Timothy, Senior Engineer, MITRE Corporation. Telephone interviews conducted by author, 19 October 2003, 18 March 2003.
- \_\_\_\_\_. <[twall@mitre.org](mailto:twall@mitre.org)>. "Even More AKM Stuff." Electronic mail messages to Catherine McNerney <[catherine.mcnerney@carlisle.army.mil](mailto:catherine.mcnerney@carlisle.army.mil)> . 19 September 2002.
- \_\_\_\_\_. <[twall@mitre.org](mailto:twall@mitre.org)>. "More AKM Stuff." Electronic mail messages to Catherine McNerney <[catherine.mcnerney@carlisle.army.mil](mailto:catherine.mcnerney@carlisle.army.mil)> . 19 September 2002.
- \_\_\_\_\_. <[twall@mitre.org](mailto:twall@mitre.org)>. "Slide Electrons." Electronic mail messages to Catherine McNerney <[catherine.mcnerney@carlisle.army.mil](mailto:catherine.mcnerney@carlisle.army.mil)> . Four messages, same subject. 17 – 19 September 2002.
- \_\_\_\_\_. <[twall@mitre.org](mailto:twall@mitre.org)>. "Title 10, U.S.C." Electronic mail message to Catherine McNerney <[catherine.mcnerney@carlisle.army.mil](mailto:catherine.mcnerney@carlisle.army.mil)>. Two messages, same subject. 24, 26 September 2002.

- \_\_\_\_\_ <twall@mitre.org>. "Your Sentence." Electronic mail message to Catherine McNerney <catherine.mcnerney@carlisle.army.mil>. 19 March 2003.
- White, Thomas E., Secretary of the Army, and General Eric K. Shinseki, Army Chief of Staff. "Army Knowledge Management (AKM) Guidance Memorandum Number 1." Memorandum for the Army. Washington, D.C., 8 August 2001.
- White, Thomas E., Secretary of the Army, and General Eric K. Shinseki, Army Chief of Staff. "Army Knowledge Management (AKM) Guidance Memorandum Number 2." Memorandum for the Army. Washington, D.C., 19 June 2002.
- Williams, Rudi. "DoD Creating New All-Service Personnel, Pay System." American Forces Information Service News Articles, Defense LINK On-line Available from <[http://www.defenselink.mil/news/Mar2002/n03072002\\_200203071.html](http://www.defenselink.mil/news/Mar2002/n03072002_200203071.html)>. Internet. Accessed 19 September 2002.
- Wixted, Michael, Colonel, U.S. Army, Retired. Telephone interviews by author, 14 September 2002 – 15 March 2003.
- \_\_\_\_\_ <michael.wixted@eds.com>. "Title 10, U.S.C." Electronic mail message to Catherine McNerney <catherine.mcnerney@carlisle.army.mil>. Six messages, same subject. 24 September 2002 – 17 October 2002.
- Wolfowitz, Paul, Deputy Secretary of Defense. "Defense Acquisition." Memorandum to the Secretaries of the Military Departments. Washington, D.C., 30 October 2002.
- Wong, Frederick G., Director of Human Resources, Defense Intelligence Agency. Telephone interviews by author, 28 September 2002, 15 November 2002, 5 March 2003.
- Wood, David, "Summary of Lessons Learned in AEIT Responses." Briefing slides. Fort Monmouth, NJ: MITRE Corporation. 28 December 2001.

