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Implementing ARFORGEN: Installation Capability and Feasibility Study of Meeting ARFORGEN Guidelines

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1. Executive Summary

The terrorist attacks against U.S. targets on September 11, 2001 were a stark wake-up call to the U.S. military planners that the global strategic landscape had shifted dramatically from a conventional to an unconventional nature, and it would continue in this ambiguous state long into the future. Army planners responded with the Army Campaign Plan (ACP) that, among other things, called for a broad redesign of Army forces as well as a redesign of how the Army would deliver these newly designed forces. Whether these changes are revolutionary or evolutionary, the Army must adjust its policies and procedures to meet Title 10 requirements under the current operational environment.

The Army replaced its long-standing Time Phased Force Deployment (TPFD) model with Army Force Generation (ARFORGEN), a new model that promoted de-centralized decision-making and redefined readiness. Under ARFORGEN, the Army eliminates its traditional division-based structure and replaces it primarily with a brigade-based structure. These smaller units are designed to be agile, expeditionary, tailored to specific circumstances (e.g., nature of threat, climate, terrain, etc.), and capable of rapid assembly. The ARFORGEN model allows the Army to build predictability in a cyclic way of producing forces for the Combat Commander. ARFORGEN has placed new demands on the installations and these demands require study to measure the impact on the installation and unit level of the systems supporting the ACP. The purpose of this study is to provide detailed information on the feasibility of implementing ARFORGEN based on a 30-day window for re-staffing at the start of a unit lifecycle. The study solely concerns this preliminary stage of ARFORGEN and is conducted within specific parameters. Our feasibility study will explore a 70% Unit Reset under current resources and then under alternative scenarios.

In order to provide decision-makers with the most pertinent information, the study employs a variety of data-gathering tools that measure the processing capacity of current resources and practices in place at Carlisle Barracks, Ft. Jackson, Ft. Campbell, Ft. Hood and Ft. Bragg. The center of our approach is a discrete event simulation model developed for the project to mirror the reset process. The Unit Reset model is implemented in Java as a discrete event simulation using Simkit, an open source Java library for discrete event simulation modeling that is used at the Naval Postgraduate School. From the software perspective, the model represents blocks in the process model that was validated during site visits with IMCOM staff with blocks of code that implement these processes by instantiating Java classes that implement the corresponding functionality and represent the connections between the processes. The model endeavors to represent mathematically the process that actually occurs in the real world. Data gathering tools are used to produce numerical calculations for each step of the out- and in-processing activities required of Soldiers and their dependents, and those numbers are fed into the discrete event simulation model. The model spotlights where potential problems exist in the process and measures how resources are utilized. It also provides the potential to estimate the feasibility of meeting reset timelines under different resource levels.

During the course of this study we: (1) conducted interviews with subject matter experts including the Army Staff and special staff, IMCOM and HRC; (2) visited five installations interviewing IMCOM staffs, unit leaders and garrison commanders or their representatives; and (3) deployed and analyzed an online Soldier survey. We had four goals in mind: gather objective data to support our model; provide qualitative information regarding the potential impacts of ARFORGEN implementation; solicit the installation-unique perspective of that implementation; and gain a better understanding of the intricacies and how-to of in/out processing. The following findings are based on the reset model, site visits and interviews, and the Soldier survey.

1.1. Modeling Findings

The simulations of Unit Reset at Hood, Bragg, Campbell, and Jackson show that the criterion of 85% of the unit's personnel fully in-processed is not attained within the 30-day objective, based on current staffing and resource levels as well as processing time requirements under current procedures. Smaller bases have a longer turnaround time than the larger ones. In Figure 1-1, the measures of effectiveness of the simulated posts under varying degrees of personnel exchange are given in terms of days using the start of the 90-day stabilization period as day 1. Thus the goal is 85% of Soldiers completely in-processed on day 120. Assuming a 70% Unit Reset of a 7,000 Soldier unit, Hood and Bragg achieve R-date at day 168, Campbell at day 238 and Jackson at day 417 under modeling assumptions.

Figure 1-1–Reset Model Output. *Based on current resources, installations are not capable of meeting ARFORGEN guidelines assuming parameters of study. The two largest installations studied provide the shortest timelines achieving R-date by day 168.*

Scenario	Status	Installation			
		Hood	Bragg	Campbell	Jackson
A- 70% Reset of 7,000 Soldier Unit	R-date (85%) **	168	168	238	417
	Completion Date (100%)	186	210	304	469
	Check-In Only ##	141	127	197	381
B-50% Reset of 7,000 Soldier Unit	R-date (85%) **	144	142	190	319
	Completion Date (100%)	161	170	239	336
	Check-In Only ##	95	102	158	234
C-30% Reset of 7,000 Soldier Unit	R-date (85%) **	122	119	144	206
	Completion Date (100%)	155	161	169	234
	Check-In Only ##	94	98	109	165

** Defined as the time at which 85% of Soldiers have completely in-processed at the receiving installation

Check-in is almost instantaneous for modeling purposes and only requires temporary housing to be available

1.2. Site Visits and Interview Findings

During the course of this study we conducted interviews with subject matter experts including the Army Staff and special staff, IMCOM and HRC and we visited five installations interviewing IMCOM staffs, unit leaders and garrison commanders or their representatives. During site visits, it became apparent that the clearing process is complicated. While component activities can move forward simultaneously, sometimes an unexpected delay with one of the functional components stresses the installation's other capabilities and could jeopardize a Soldier's ability to meet the R-Day deadline. The critical elements, due to their multiple components, are housing, housing maintenance, and transportation. Further, the typical installation support staff is manned by a Table of Distribution and Allowance (TDA) designed to accommodate the orderly flow of Soldiers and their Families in and out of the installation throughout the year, with spikes at the beginning and end of the summer. These summertime spikes are minor, however, compared to what occurs under ARFORGEN. The findings and conclusions that follow contain the common themes we uncovered that impacts ARFORGEN implementation.

Finding #1: All installations are different.

True installation differences exist in many ways. These differences must be taken into consideration with any new process-driven activity such as ARFORGEN. Some TDAs are over 10 years old, are no longer based on valid requirements, and have been further reduced by budget constraints. Staffs are on subsistence manning. The mix of civilian, military, and contractor employees influences management flexibility in making course changes, working non-standard hours, ramping up or down in response to challenges, or sending workers to other installations to handle peak periods. Contractors provide yeoman service to installations and have filled many gaps.

The ability of the local community comes into play in some locales regarding the amount and quality of services that can be provided based on the characteristics of their labor pool. Many jobs, especially in the transportation and housing fields, are governed by complex bodies of regulation. A significant number of the civilians filling civil servant and contractor roles are military dependents and will disappear when units undergo mass exodus. Work rules in individual contracts / labor agreements vary widely from installation to installation and affect the flexibility of the workforce.

Installation mission and additional regional responsibilities impact resource commitment. Local communities have varying abilities to provide additional resource support. For certain installations, weather and distance can affect the availability of resources and the way they do business.

Finding #2: The In/Out Process lacks rigor.

A lack of consistency makes operating at a higher pace of operations, such as what ARFORGEN demands, difficult. The installations' answer to the question "How long does it take to In-Process a Soldier?" was almost always "four to five days". The overall customer service philosophy of Army installations has developed into a focus on the individual, which governs most of the way organizations operate as a whole. In the ARFORGEN concept, the focus cannot be on processing individuals but must be on the group as a whole. Organizations are still doing "business as usual." They are reactive, not proactive.

The military school system demonstrates it is possible to put the in/out process on a business basis. Systems are not linked on and off the installation. It is difficult for installations to cross level or borrow manpower to meet recurring surges. Installation "one stops" are usually not "one" stops. Overall, the capacity of the post activities to process Soldiers within a set period of time of 30 days is influenced by a variety of factors. Without standardization and metrics, installations cannot adequately plan, manage and improve operations as would be required if ARFORGEN were implemented.

Finding #3: Installation personnel uniformly feel that a massive drawdown and reconstitution is impossible given current resources. Full ARFORGEN implementation will require sweeping changes to a wide array of Army systems and culture.

Site visits confirmed that at virtually no level is ARFORGEN on anyone's radar screen – everyday business is all consuming and difficult enough as it is to worry about future "what ifs." Installations took a willing and positive attitude to tackling implementation of this "new" Army direction, but quickly concluded the massive draw-down and reconstitution "won't work" in the designed 30-day window. Two particular conclusions were strongly expressed: first, the effects of influences outside installation control – the personnel system, military schools, and equipment – seemed insurmountable no matter what the installation did; and second, the negative impacts on Soldiers and Families (well-being, financial and retention) will be substantial and pervasive.

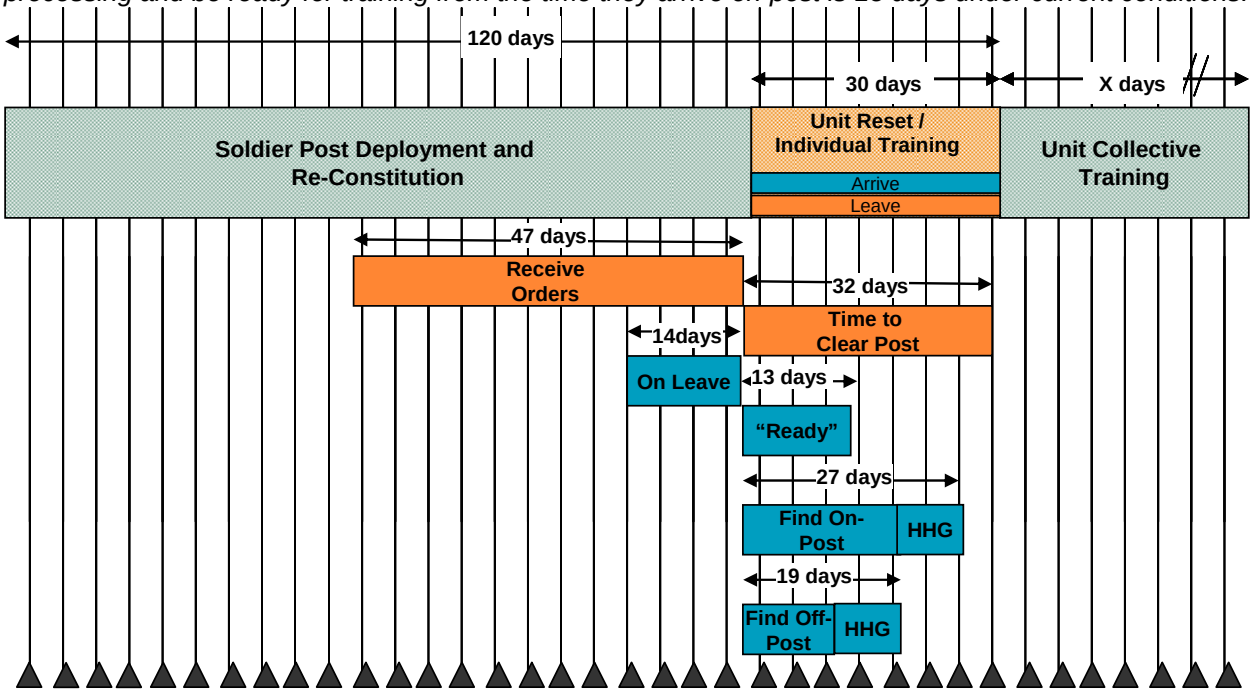
The requirements for NCO/OES attendance as a condition for promotion or assignment will impact the Army's ability to generate sufficient NCOs and Officers to meet required fill times because if Soldiers are not available to attend requisite courses, the available pool of officers and NCOs dries up. The current practice of pulling students from schools before their scheduled class completion to meet deploying unit fills is already beginning to render the value of attendance as moot.

ARFORGEN reinforces the evolution of the Army toward a truly expeditionary force. The timing of personnel actions can have strong impacts on installation capabilities to begin out processing. As focus shifts to the Expeditionary Army, the informal contract with the Soldier is seen as threatened, the currency of leadership is forfeited, and the Army Family is relegated to "not matter." Expectations will have to be managed very carefully.

1.3. Soldier Survey Findings

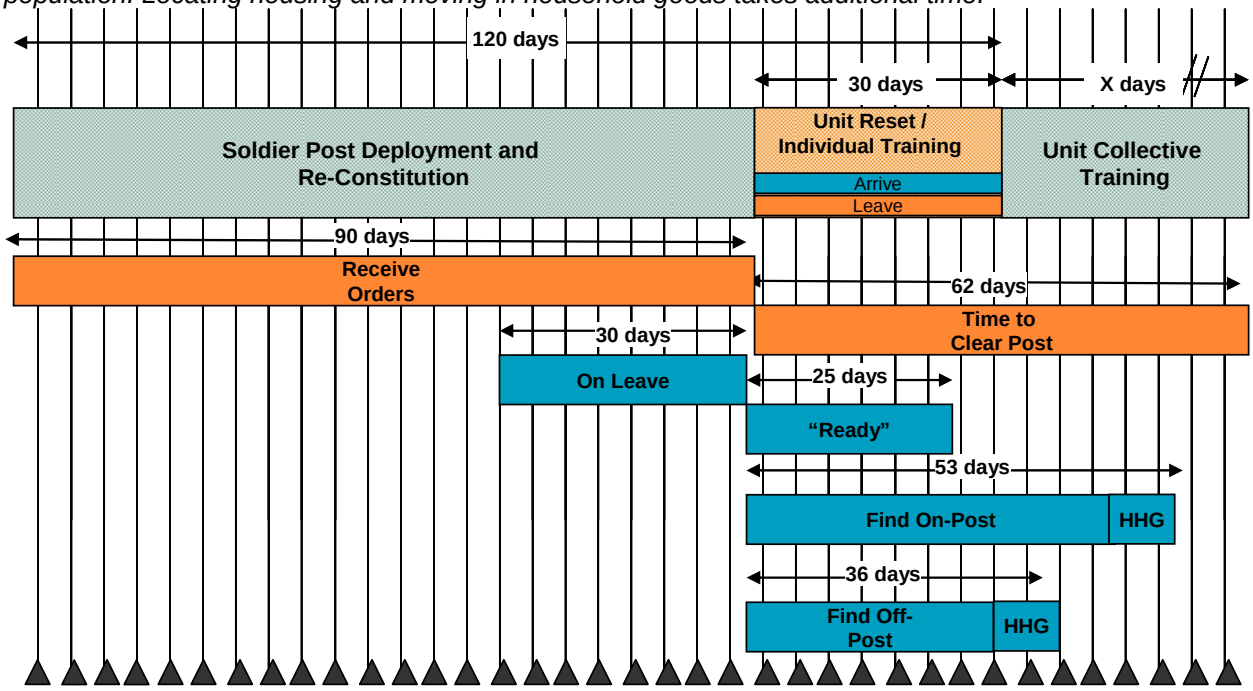
According to Soldiers who had gone through a PCS in the past year, the mean time to clear transportation, housing, CIF and other out-processing activities is 32 days from the time they received their orders. The time to "check in and be ready for training" (though not usually moved into their permanent housing) is 13 days. The mean time for Soldiers to find on-post housing is 19 days and the mean time to look for and find off-post housing is 11 days. Receiving and unpacking household goods takes an additional 8 days as illustrated in Figure 1-2. Because they are based on historical Soldier experiences, they are a function of current staffing and installation resources, installation in- and out-processing activity volumes, and current practices and business processes. However, most current Unit Resets do not involve large draw-downs. In addition, activity volume is effectively "smoothed" or "level-balanced" over a period longer than the 30 day reset envisioned under ARFORGEN due to delays in receiving orders and early departures. It is therefore unclear whether the installations could achieve the mean flow times illustrated below if the period was condensed due to resource limitations.

Figure 1-2 – Average Soldier In- and Out-Processing Flow Times. *According to Soldiers, the mean time to complete out-processing once their orders are received is 32 days. The mean time to complete in-processing and be ready for training from the time they arrive on-post is 13 days under current conditions.*



Approximately 75% of Soldiers experience delays during out-processing and 61% of Soldiers experience delays during in-processing. In both cases, the primary reasons for delays are paperwork issues (including late receipt of orders or problems with their orders), work interference and difficulty scheduling appointments. As a result, the flow time to out-process 85% of Soldiers is 62 days and the flow time to in-process 85% of Soldiers is 25 days as illustrated in Figure 1-3. Finding housing and receiving and unpacking household goods pushes the schedule further to the right as illustrated below.

Figure 1-3 – Flow Times to In- and Out-Process 85% of Soldiers. *It takes 62 days to out- process 85% of the surveyed Soldier population and a minimum of 25 days to in-process 85% of the surveyed Soldier population. Locating housing and moving in household goods takes additional time.*



1.4. Conclusion

According to the model, installation resource constraints – including the number of personnel, number of hours worked, temporary lodging, permanent lodging, movers and storage facilities – make it unlikely and perhaps impossible for installations to meet ARFORGEN guidelines and provide units with Soldiers to begin collective training in a 30-day window. This is validated by installation staff during site visits and Army planners who are witnessing a drop in the ability of units to meet Mission Readiness Exercise (MRE) requirements. The implementation of ARFORGEN is likely to impact installations like an oncoming wave – significant draw-down of a unit simultaneous with the building up of that same unit in a condensed time frame – placing significant burden on installation staff and community resources.

Recommendations to mitigate this challenge include: increase Staffing; expand and improve partnerships with community resource providers, increase resource availability; increase surge capability staff to develop and implement surge plans; connect civilians to mission; increase resource flexibility; program the dedication of resources; and focus resources regionally. The complementary recommendation is to increase R-day and all ARFORGEN timelines to accommodate observed resource limitations. These options include: develop more support for fluid ARORGEN timelines; protect the 90-day re-constitution period following return from deployment; and develop alternative PCS solutions for Families. At the same time, there is a great need to improve processes and increase efficiency. Some potential "quick hits" for improving processes are: standardize IMCOM and installation policies and procedures; change the in- and out-processing focus from the individual to the unit; revitalize and leverage systems already in place; operate proactively; assess Army installation support for joint applicability; and improve customer service to Soldiers. This study ought to be one of the initial studies that will help the Army better see the problems, develop solutions, and implement better ways to support the process of meeting Army Title 10 requirements.

2. Introduction

2.1. ARFORGEN Background

The terrorist attacks against U.S. targets on September 11, 2001 were a stark wake-up call to the U.S. military planners that the global strategic landscape had shifted dramatically from a conventional to an unconventional nature, and it would continue in this ambiguous state long into the future. They responded with the Army Campaign Plan (ACP) that, among other things, called for a broad redesign of Army forces. From fighting protracted, unconventional conflicts like the Global War on Terror (GWOT) to meeting other unanticipated threats and peacekeeping needs, the Army wanted a force that was agile, readily deployable, and equipped with the skills and resources needed to respond quickly to any challenge at hand.

The Army replaced its long-standing Time Phased Force Deployment (TPFD) model with Army Force Generation (ARFORGEN), a new model that promoted de-centralized decision-making and redefined readiness. Under ARFORGEN, the Army eliminates its traditional division-based structure and replaces it primarily with a brigade-based structure for both Active Component (AC) and Reserve Component (RC) forces as illustrated in Figure 2-1. These smaller units are designed to be agile, expeditionary, tailored to specific circumstances (e.g., nature of threat, climate, terrain, etc.), and capable of rapid assembly. The Brigade Combat Teams (BCTs) or battalion size units would be more self-sufficient and could be easily combined with other Army forces to meet the defined requirements of the Regional Combatant Commanders. The units can be deployed into conflicts as either rotational or contingency forces.

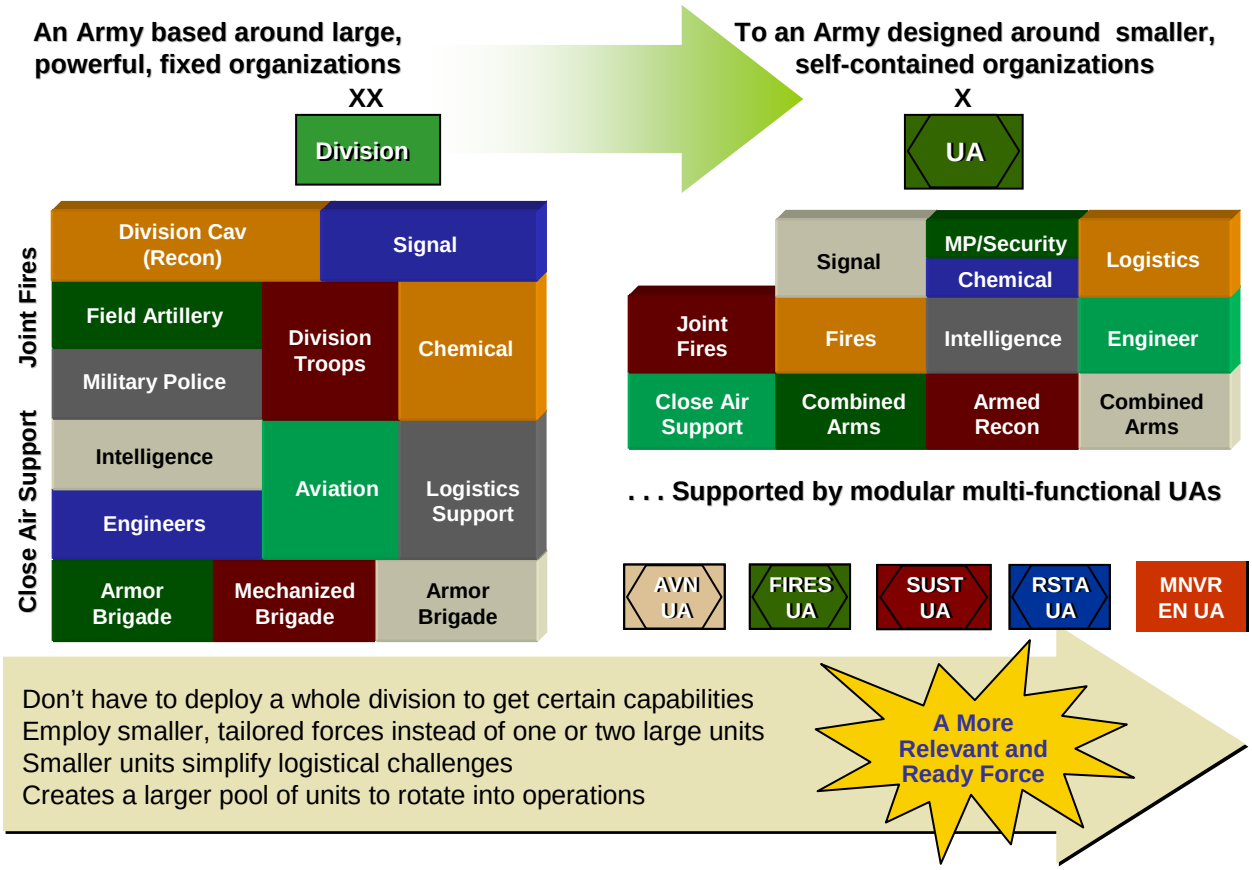
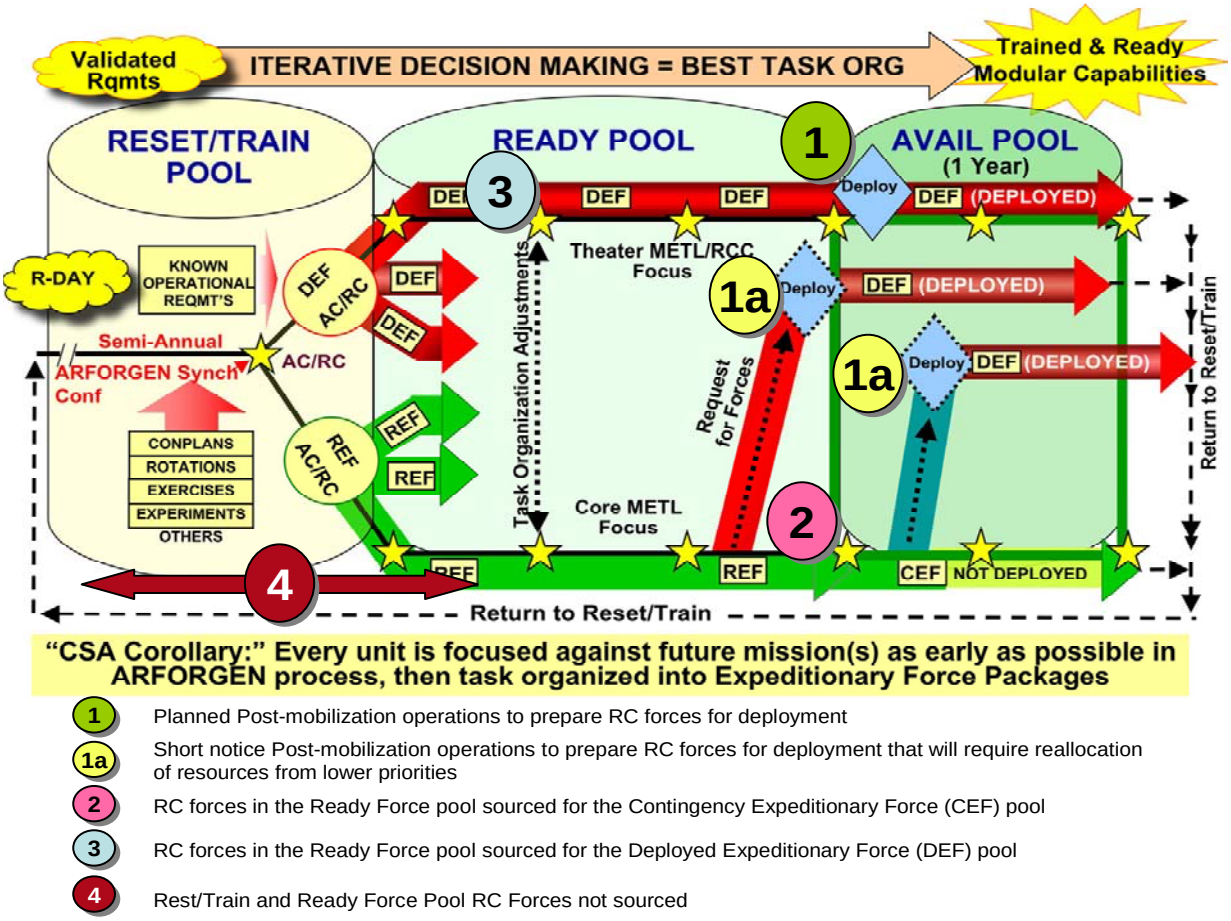


Figure 2-1– ARFORGEN Model Overview. *ARFORGEN eliminates the traditional division-based structure and replaces it primarily with a brigade-based structure.*

The move to a modular force structure that emphasized speed and agility mandated a new approach to unit creation and troop replacement. Consequently, a key element of ARFORGEN is that it synchronizes the continuous output of fully staffed, trained, and equipped units in a logical and systematic manner. Initial development of the model began in 2004. The Army approved it as part of ACP in July 2005 and has been reviewing options for its implementation.

2.2. Description of ARFORGEN

ARFORGEN addresses the segment of the ACP that converts the current force structure into modular BCTs with specialized skills, training, and equipment. Whenever strategic developments demand a reconfiguration of BCTs or the creation of new ones, the ARFORGEN process provides “plug and play” capability. The ARFORGEN model divides the unit lifecycle into three segments that in the original scheme were each approximately one year in duration as illustrated in Figure 2-2. The initial segment is for Reset/Training that begins with a 90 day block period devoted to reconstitution, followed by 30 days for re-staffing, and then roughly eight months of individual and core training. Reconstitution activities include equipment modification and repair, personal leaves, unit turnover, and changes of command. The principal goal of the units during Reset/Train is to achieve prescribed specific individual and organizational capabilities, and move quickly into the Ready Force Pool. The Ready phase focuses on conducting mission preparation and executing higher level collective training with other operational headquarters. Units are task organized and train to perfect their performance for a core mission as part of a larger force. In the third phase, BCTs are available for rapid deployment and require minimal pre-mission training.



1 Planned Post-mobilization operations to prepare RC forces for deployment

1a Short notice Post-mobilization operations to prepare RC forces for deployment that will require reallocation of resources from lower priorities

2 RC forces in the Ready Force pool sourced for the Contingency Expeditionary Force (CEF) pool

3 RC forces in the Ready Force pool sourced for the Deployed Expeditionary Force (DEF) pool

4 Rest/Train and Ready Force Pool RC Forces not sourced

Figure 2-2– Three Phases of ARFORGEN. *The ARFORGEN model divides the lifecycle of a unit into three distinct phases: (1) reset / train; (2) ready pool and (3) available pool.*

The model represents a new method for force generation. ARFORGEN eliminates the tiered readiness of TPFD and instead relies on rotational forces and cyclical training schedules. It introduces greater flexibility and speed to the unit replacement process, and minimizes the turbulence usually associated with large-scale re-staffing. Manning had been done primarily on an individual basis that required unpopular measures such as stop-loss and stop-move orders. The unit lifecycle part of the model based on a unit replacement system is meant to better manage personnel gains and losses, and therefore minimize the daily personnel turnover of the individual replacement system. The flexible nature of the pyramid-shaped, tri-stage model as shown in Figure 2-3 is designed to allow the Army to meet the multiple strategic challenges defined by the ACP: fighting the GWOT; defending the homeland; assisting Civil Authorities with defense support; deterring conflicts in strategic regions; and remaining ready to respond to small-scale contingencies. At the end of the deployment phase in the third year, each unit undergoes rapid re-staffing and possible re-location, and begins another lifecycle.

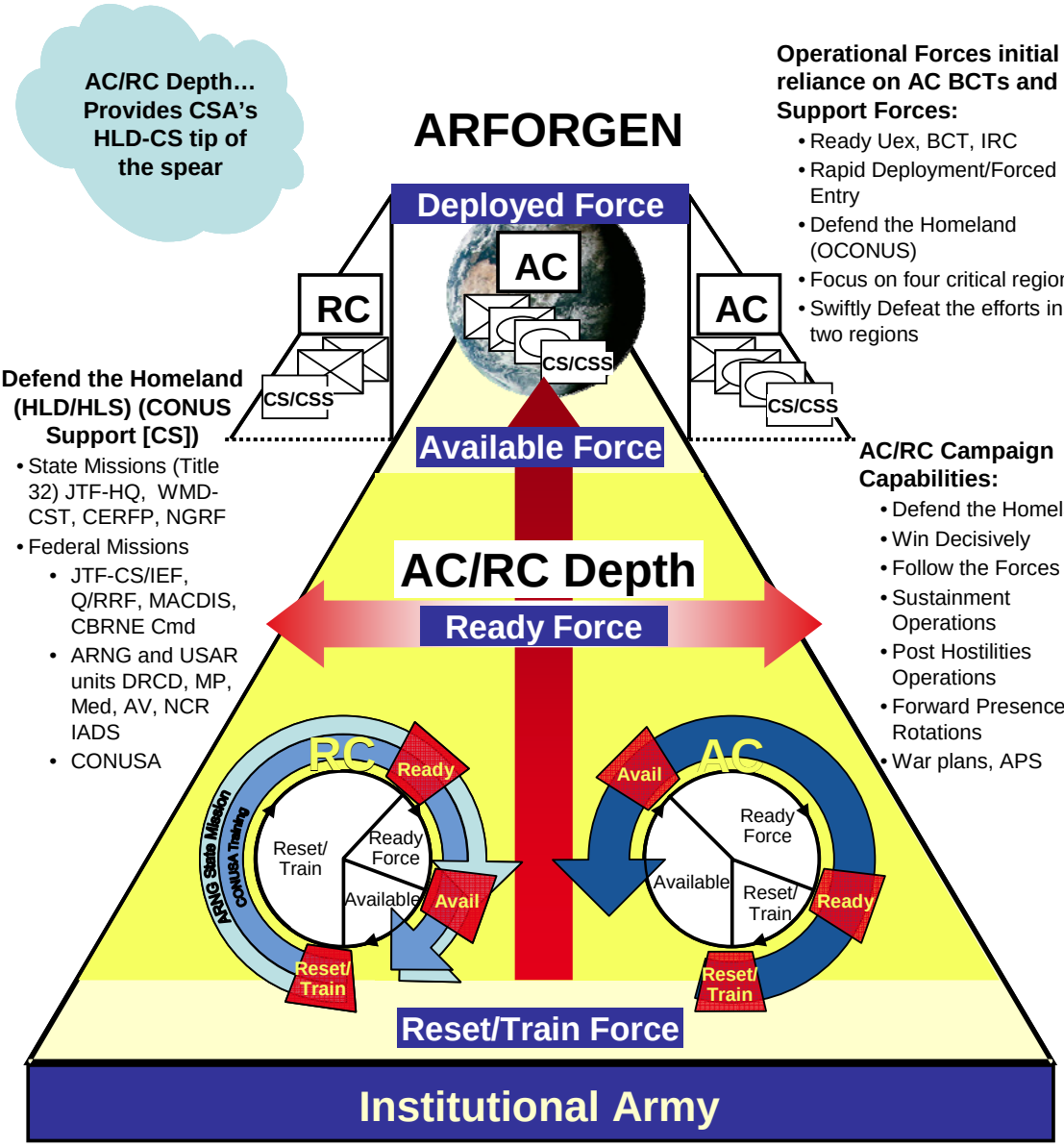


Figure 2-3– ARFORGEN Pyramid Structure. *ARFORGEN is designed to allow the Army to meet the multiple strategic challenges defined by the Army Campaign Plan.*

ARFORGEN is not only a systematic plan governing the efficient creation and maintenance of Army units; it also reinforces the Army's commitment to force stabilization. As originally conceived, the ARFORGEN model is built on the premise that units will remain intact during a three-year lifecycle, with the pre-deployment two-year dwell time serving the critical function of creating unit cohesion through extended training. The whole concept behind force stabilization is to provide increased levels of readiness and combat effectiveness for Army units. By training together intensively for that length of time, units learn to operate with a high degree of proficiency and esprit in the deployment phase, and are able to deploy as combat ready forces that require little added preparation. It continues the emphasis on unit cohesion that has been a cornerstone of Army philosophy since the post-Vietnam rebuilding efforts of the 1970s.

Aside from effectively aligning troop requirements with the Army's new strategic mission, the force stabilization element of ARFORGEN was developed to raise the morale of Soldiers and their Families as well. The three-year rotation cycle promises greater stability for Family life by relieving spouses and school-age children from the stress of undergoing frequent relocations.

2.3. Scope and Purpose of Study

The purpose of this study is to provide detailed information on the feasibility of implementing ARFORGEN based on a 30-day window for re-staffing at the start of a unit lifecycle. The study solely concerns this preliminary stage of ARFORGEN and is conducted within specific parameters. The new unit lifecycle re-staffing process is based on the current scenario of units reaching the end of their deployments in Iraq or Afghanistan and returning to the U.S. Upon return, Soldiers go through a post-deployment and re-constitution phase intended to last 90 days. Re-integration training, leave-taking and minimal duty are permitted until day 91, when normal Army activity resumes.

The project analyzes the feasibility of starting another unit lifecycle on the 31st day after Soldiers return to normal duty. It presumes that units will be drawn down 70% due to reassignment/ separation and retain 30% of personnel for the next lifecycle. The study attempts to ascertain whether a unit can be re-staffed to 85% of its desired end capacity within that 30-day window and be ready to start the training phase of a new lifecycle – referred to as "R-Day" – 121 days following re-deployment, as illustrated in Figure 2-4.

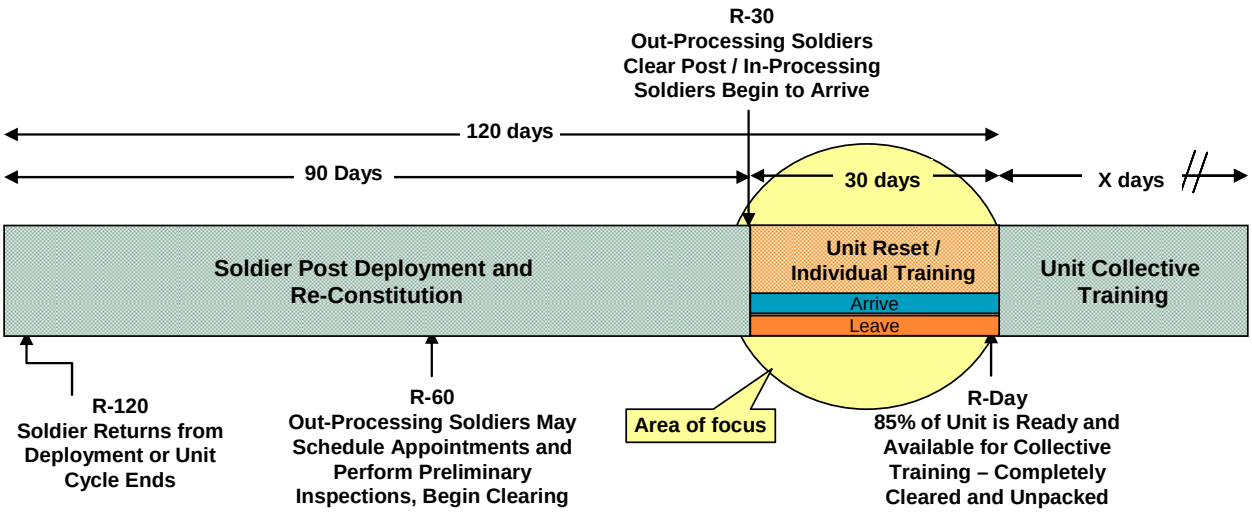


Figure 2-4– ARFORGEN Study Timeline. *The focus of this study is the ability of the installation infrastructure and the unit leadership to meet the 120 day timeline outlined under ARFORGEN guidelines.*

Bringing together disparate units to create a trained force is a daunting task that requires the close coordination of all elements of the Army system, especially the installation support staff. The Soldier is the critical unit of inventory for a unit undergoing reset as it prepares to begin training under a new lifecycle, and therefore it is expected that the Soldier will be delivered on time to the post and be prepared to start training on the designated date. If a Soldier is delayed trying to out-process from his previous post, the training either can't proceed or the Soldier misses the start of the training cycle. If housing at the destination installation isn't ready when he arrives, then the Soldier is diverted from training later on to assist his Family with the move-in when housing is finally made available.

As the Army weighs the merits of implementing ARFORGEN, it needs insight into whether the program is doable and, if so, what burden it might put on current resources. One of the planned advantages of ARFORGEN is the speed of the re-staffing process. There is minimal time-lapse allowed between unit lifecycles. Within the very limited timeframe planners have allotted for troop replacement, to what extent will ARFORGEN disrupt the existing staff organizations and procedures at various Army posts? If modifications to existing operations are required to adequately handle troop surges, the Army needs to know where and what changes should be made. Concerns have been raised that the ARFORGEN 30-day Reset requirement will overwhelm current base operational capabilities. Our feasibility study will explore Reset under current circumstances and business practices.

2.4. Study Approach

In order to provide decision-makers with the most pertinent information, the study employs a variety of data-gathering tools that measure the processing capacity of current resources and practices in place at Carlisle Barracks, Ft. Jackson, Ft. Campbell, Ft. Hood and Ft. Bragg. The center of our approach is a discrete event simulation model developed for the project to mirror the reset process. The parameters of the model are all the activities required to move Soldiers from one post to another to begin a new unit lifecycle. The model endeavors to represent mathematically the process that actually occurs in the real world. Data gathering tools are used to produce numerical calculations for each step of the out- and in-processing activities required of Soldiers and their dependents, and those numbers are fed into the discrete event simulation model. The model spotlights where potential problems exist in the process and then measures how the system would react when additional resources are selectively applied.

Our modeling approach follows three main steps. In step 1, we identified the appropriate ARFORGEN modeling tools and data requirements and the tactics necessary to validate and populate the model. We then developed drafts of the various proposed data gathering tools (e.g. surveys, interview guides, focus groups, data extracts, etc.) and worked with our internal subject matter experts to ensure comprehensiveness and accuracy before vetting with Army G-1. In step 2, we updated the tools, identified the target audience, coordinated visits to five installations, conducted interviews and focus groups with installation staff responsible for reset activities, validated the process maps and administered a data gathering survey on AKO based on input from the site visits. We then modeled the ARFORGEN process using operations research techniques and validated and analyzed the data based on data gathered through the survey and site visits. Qualitative data provided through the site visits and a survey deployed to Active Army Soldiers was used to compliment and validate survey output. In step 3, we presented a draft report and solicited feedback from stakeholders before re-assessing the data and preparing the final report and briefing materials. This process is illustrated in Figure 2-5.

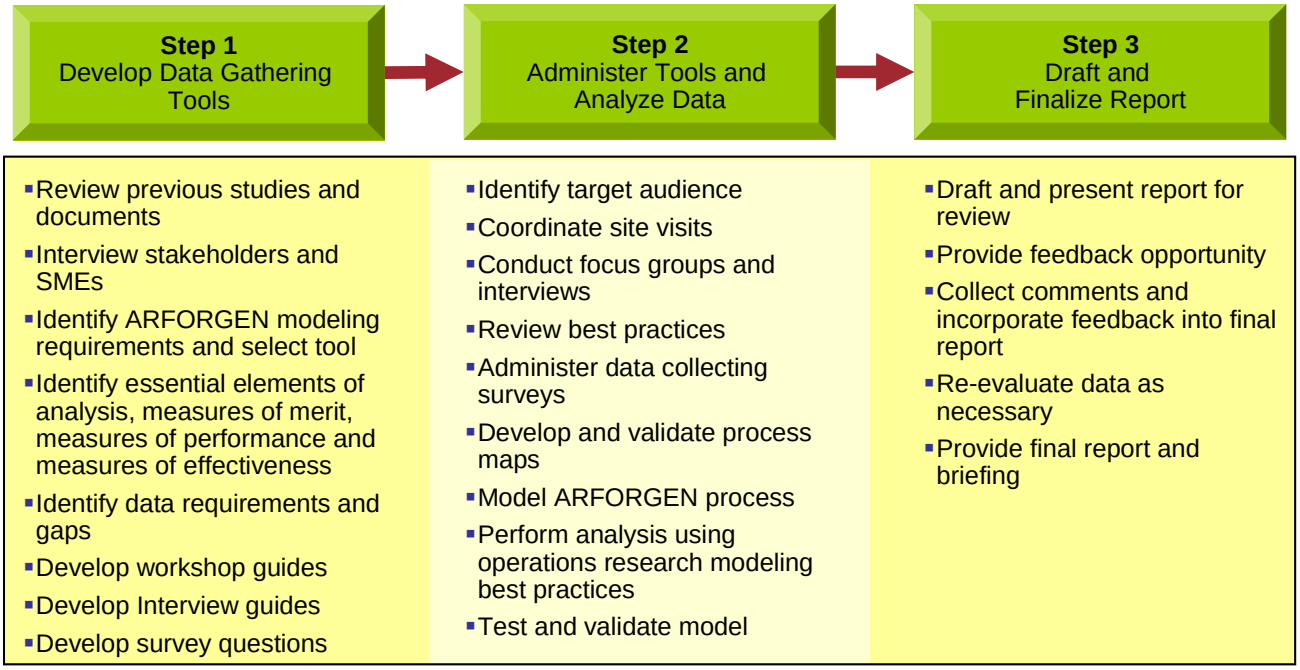


Figure 2-5– ARFORGEN Study Approach. *We employed a three-step approach for developing the data gathering tools, administering the tools and analyzing the data, and drafting and finalizing this report.*

From reviews of previous feasibility studies, we developed a set of data-gathering tools consisting of interview guides, questionnaires, surveys, and presentations for group discussions. The tools were used for telephone and on-site interactions with selected parties. We worked with Army G-1 to identify target audiences for the interviews and surveys. The work specifically concentrated on the installation staff responsible for handling all facets of the out- and in-processing of Soldiers and their dependents, such as personnel from the Post Adjutant General's staff and the Office of the Provost Marshall. Other targeted groups included Soldiers and their Families, unit leadership, civilian contractors, and representatives from community businesses that provide support services for local Army bases.

Our data collection tools included paper- and web-based instruments. Employees with significant research and analysis experience developed the web-based survey format that was a mix of multiple choice and open-ended questions. The surveys sent to Soldiers mainly focused on their own experience with the out- and in-processing functions. The purpose of the Soldier survey was to collect data on service / process times, lag times and idle times, and probability estimates used in the reset feasibility model. These elements are described in more detail in Sections 6 and 7. In addition, survey data was used to approximate reset flow times to validate model outputs, identify bottlenecks in the process, and capture Soldier ideas for improving the process. Survey questions sent to installation staff related directly to the overall operational capacity of their particular posts, i.e., staffing numbers, time spent processing each Soldier, etc.

Interview guides for site visits and SME interviews were developed and adhered to as closely as possible to facilitate better analysis capability in directly applying the findings to the project's objectives. All interview participants had at least some experience with the ARFORGEN process or with installation management. We relied on the guides for conducting individual interviews and focus group discussions with Installation Management Command (IMCOM) and garrison staff personnel associated with out- and in-processing functions.

3. Modeling the ARFORGEN Process

3.1. Model Overview

The Unit Reset model is implemented in Java as a discrete event simulation using Simkit[1,2] an open source Java library for discrete event simulation modeling that is used at the Naval Postgraduate School. From the software perspective, the model represents blocks in the process model that was validated during site visits with IMCOM staff with blocks of code that implement these processes by instantiating Java classes that implement the corresponding functionality and represent the connections between the processes. At root, many of the classes are variations and elaborations on Simkit's queue server examples. A high-level overview of the process blocks is represented in Figure 3-1.

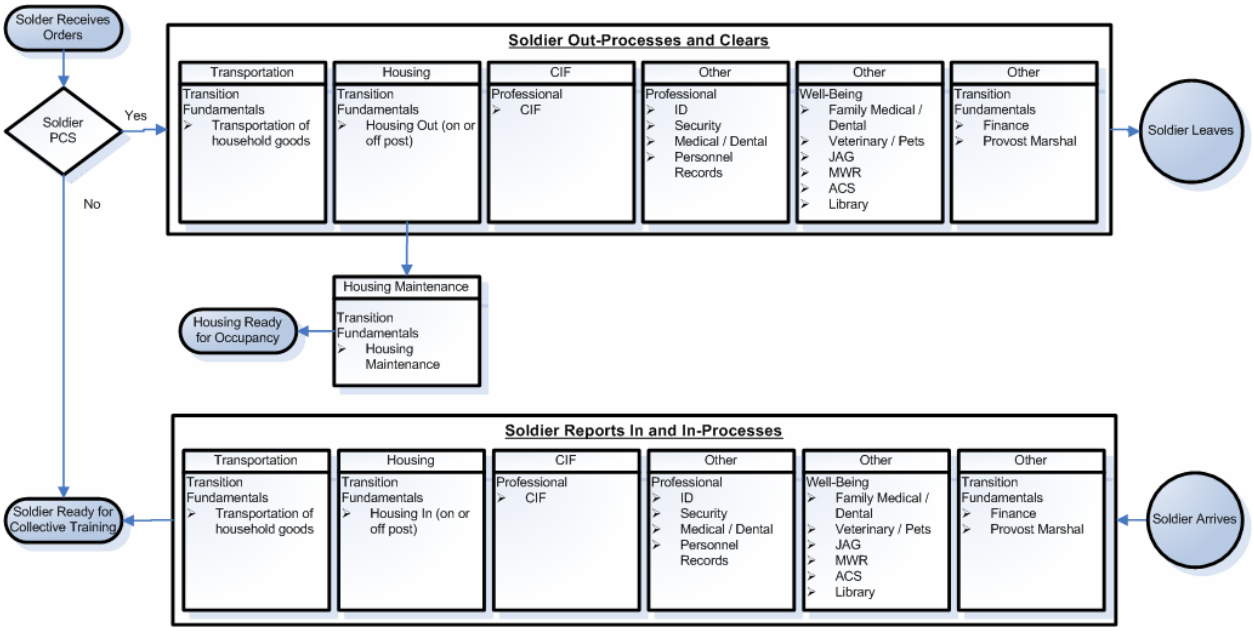


Figure 3-1– Overview of Installation In- and Out-Processing Blocks. *From the software perspective, the model represents blocks in the process model that was validated during site visits with IMCOM staff. In the simulation of the reset process, one post (and one unit) is the subject of attention. One set of Soldiers PCS in, another leaves the post, and a third stays with the unit at the post. The simulation follows the movements of the Soldiers only to the extent that they involve the subject post, and does not model the situations at other posts.*

Conceptually, the model is a network of queues. In a queue, there are a given number of servers that take a pseudo-random amount of time to service their customer. Arriving customers wait in "line" to be served, but may be in many lines at once such as in an appointment reservation system. The service capacity of the queue is given by the number of "servers" and the processing time per customer. After completion of service, the Soldiers proceed to the next queue. We do not model the Soldier's time expenditure or his limitation of being in only one place at any one time, but focus on the limitations of the processing resources, such as housing inspectors, transportation counselors and maintenance crews.

In the process model for Unit Reset, most of the server resources work with more than one process block, as in the multiple meetings with the transportation officer. The outgoing process meets the same servers as the incoming process as well. To model this, the concept of a

[1] Buss, Arnold H., "Component Based Simulation With Simkit," in E. Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes, eds., *Proceedings of the 2002 Winter Simulation Conference*, pp. 244-249; software available at https://diana.nps.edu/Simkit/
[2] Buss, Arnold H. and Paul J. Sanchez, "Building Complex Models With LEGOS (Listener Event Graph Objects), in E. Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes, eds., *Proceedings of the 2002 Winter Simulation Conference*, pp. 732-737.

queue is enhanced to permit the same queue to serve customers from more than one portion of the process, and send them to their next block upon completion.

Related to the concept of a queue is that of resources such as housing, which are taken by a Soldier upon assuming residence and released when he moves out. These are modeled as a number of vacant resources along with processes for freeing and allocating them to Soldiers. The process of allocation or freeing may take a given amount of processing time.

Queue processing is also regulated by a time clock, which is set to the business hours kept by the server, as determined by data provided by each installation. For example, a server may be set to take customers between the hours of 8:00 and 16:00 Monday-Friday. Customers left over at closing time continue to be processed, but customers that arrive later than that are put in the virtual queue. For building maintenance crews, however, multi-day efforts are conceivable and the repair time period in hours is mapped into the corresponding time in the work day.

In addition to queues and resource handlers, additional simulation entity classes were constructed for organizing the code blocks, querying whether certain blocks had been visited, making random choices according to a given probability, routing process flow, recording the paths taken by individual Soldiers, collecting queue statistics, initiating Soldiers, and implementing the working hours time clock.

Process flows in Simkit are created by simulation entities scheduling the broadcast of messages and having other simulation entities listen for them. A simulation entity picks up a message, processes it, and may schedule new messages in response. Pathways between process blocks are implemented using patterns of sender-listener relationships, which are defined in the Java code. Process flow is implemented using a chain of such sender-receiver relationships. Flows are flexibly routed by having the simulation entity vary its output message and defining listeners for the different messages.

In the reset simulation model, the flow of events is coordinated using several types of simulation blocks. One class allows an output message only if a given set of blocks have been visited. Another queries the property values that have been assigned to a Soldier in previous blocks, and sends an output message accordingly. A holding gate entity class enforces scheduling requirements by absorbing events and storing them until release at a given time. This is employed in the reset model to allow preparation for the move to occur before the “go” signal without having the actual move occur too early.

Each model contains a variety of simulation entity classes and associated types of inputs. These include (1) installation and community resources; (2) hours of operation; (3) probabilities; (4) service times; (5) delays, and (6) holding gate time points. Since models were developed for each installation separately, the sources of data elements of the installation-specific model vary by post. The sources of data were either (1) data collected from installations or (2) data collected from Soldiers through an electronic survey. Several modeling inputs are shared by each model (for example, the amount of time it takes the housing inspector to inspect a house is modeled as the same time across each model). The model element and data source(s) for each modeling entity are illustrated in Figure 3-2 below.

Figure 3-2– Model Input Entities and Data Sources. *The reset model is built as a network of queues. Models were populated for 5 different installations. Each model contains 76 elements based on estimates discovered during data collection. The source of the estimate for each element is described below.*

Category	Model Element / Description	Source
Installation Staff Resources	• # housing officers • # housing counselors • # housing inspectors • # transportation officers • # transportation counselors • # housing maintenance officers • # housing maintenance engineers • # CIF clerks • # in- and out-processing clerks	Installation
Resource Availability	• Housing office available hours** • Transportation office available hours ** • Maintenance office available hours ** • CIF office available hours ** • In- and out-processing available hours**	Installation
Installation Characteristics	• # vacant on-post housing units • # vacant off-post housing units • Installation directly contracts-out cleaning (Y/N) • Installation has a one-stop-shop to perform some Soldier out-processing activities (Y/N) • Installation has a one-stop-shop to perform some Soldier in-processing activities (Y/N)	Installation
Community Resources & Availability	• # moving teams • Available hours for moving ** • # temporary lodging available • # temporary storage units available	Installation
Soldier Re-Location Activity	• # Soldiers leaving on post housing • # Soldiers leaving off post housing • # arriving Soldiers who already have housing before arrival • # arriving Soldiers who prefer to live on-post • # arriving Soldiers who prefer to live off-post	Scenario Dependent / For Testing / Feasibility
Housing Out Service Times	• Service time for housing to perform a preliminary inventory • Service time for housing to meet with Soldier and organize move • Service time for contractors to clean housing • Service time for housing to inspect cleaning • Service time for housing to release paperwork to DFAS • Service time for housing to release housing to maintenance	Installation
	• Service time for a Soldier to interview / select cleaners • Service time for a Soldier to perform a “sweep out” of housing • Service time for a Soldier to clean housing	Soldier
Housing Out Probabilities	• Percentage of Solders who contract-out cleaning • Percentage of housing that pass first cleaning inspection	Installation
Transportation Out Service Times	• Service time for transportation to perform a preliminary transportation inspection • Service time to select movers • Service time to schedule movers • Service time to pack and load HHG • Service time for transportation to perform an inspection of a move out of housing	Installation

Category	Model Element / Description	Source
	• Service time for a Soldier to move into temporary housing (before leaving an installation)	Soldier
CIF Out Service Times	• Service time for a CIF Clerk to inspect and inventory CIF	Installation
	• Service time for a Soldier to re-clean CIF	Soldier
CIF Out Probabilities	• Percentage of Soldier who pass first CIF inspection	Installation
Other Out Service Times	• Service time for a Soldier to perform one-stop activities • Service time for Soldier to perform non one-stop Activities	Installation / Soldier
Housing maintenance Service Times	• Service time for maintenance to perform an inspection of the house for needed maintenance • Service time for maintenance to perform work on a housing unit • Service time for maintenance to perform an inspection of completed maintenance work • Service time to release house for occupancy	Installation
Housing maintenance Probabilities	• Percentage of maintenance work that passes first inspection	Installation
Housing In Service Times	• Service time for housing to put Soldier on waiting list • Service time for a Soldier to evaluate on-post housing • Service time for Soldier to inspect house and get keys	Installation
	• Service time to find temporary housing • Service time for Soldier to find off-post housing • Service time for Soldier to move out of temporary housing (before moving into housing)	Soldier
Housing In Probabilities	• Percentage of on-post housing accepted immediately by Soldiers	Soldier
Transportation In Service Times	• Lag time between arrival of Soldier and Arrival of HHG • Service time for transportation to notify Soldier of HHG arrival • Service time for transportation to arrange temporary storage • Service time for movers to deliver and move HHG into housing • Service time for movers to move HHG into temporary storage • Service time for transportation to inspect and invoice move of HHG into temporary storage • Service time for transportation to schedule delivery of HHG • Service time for movers to move HHG from storage to housing • Service time for transportation to inspect and invoice move	Installation
CIF In Service Times	• Service time for CIF clerk to issue gear to a Soldier • Service time for a Soldier to inspect CIF received	Installation
CIF In Probabilities	• Percentage of CIF complete on first issue	Installation
Other-in Service Times	• Service time for a Soldier to perform one-stop • Service time for Soldier to perform non one-stop activities	Installation / Soldier

** All availability times include start and stop times and break times on a daily basis

The basis for a discrete event simulation is the generation of pseudo-random numbers, which underlie the server processing times. These are generated using the Mersenne Twister[3] algorithm as it appears in Simkit. Most of the service times are according to the exponential probability distribution, and parameterized to reflect the estimates of mean service times estimated from the data collected during the site visits and through the survey deployed to Soldiers who had gone through a PCS move during the past year.

3.2. Mapping the Process

Designing an accurate map begins with a list of the major functions managed by the installation staff that Soldiers must engage when changing posts. At a high level, the functions include housing, transportation, housing maintenance, central issue facility (CIF), and other (e.g., records processing—finance, medical, dental, etc.), with an out- and in-processing side for each of the functions with the exception of housing maintenance as illustrated above in Figure 3-1. Beneath those general categories, all component steps are atomized that the Soldier, installation staff, and relevant third parties must actually complete. Under housing move-out, for instance, the Soldier must set up an appointment with a housing counselor to initiate the process, meet with the counselor, and clean the house or contract with someone else to clean it. The housing counselor is responsible for a preliminary and a final inspection of the house, releasing the Soldier, providing paperwork to DFAS, and sending a message to housing maintenance that the house is ready for maintenance and repair work. Detailed process maps validated during site visits is provided in Appendix C.

3.3. Modeling Assumptions

The simulation model seeks to push through a reset process as quickly as possible, in which a group of Soldiers attempts to leave base and check out, while another seeks to arrive and check-in. In practice, however, this in not always the case. According to data gathered from Soldiers, approximately 8% of Soldiers coordinate their movements based on school calendars and approximately 75% of Soldiers experienced delays associated with their paperwork such as delays in receiving or problems with their orders. Beyond the limitations imposed by the two holding gates, the model does not globally orchestrate the movements of different groups of Soldiers, but lets each Soldier get in line for the next resource as soon as he has completed the previous steps. This is important because Soldiers use common resources (e.g., transportation officer) in the process steps for arriving and leaving. Arrivals could conceivably congest the queue for the resources needed for the leaving Soldiers to depart. One example of contention for the same resources is the use of temporary housing as part of the moving-out process for on-post residents, as well as part of the moving-in process for arrivals.

To explore how fast the reset can be accomplished and yet assume reasonable behavior, Soldiers arrive on base as soon as there is temporary housing available, but after the check-in holding gate time. At this point they start the CIF and Other in-processing as well as discussions with housing and transportation on base. For robustness with respect to user inputs, the model tracks projected vacancies in off-post and on-post housing and does not allow a Soldier to get in the queue for either type of housing unless there will be a vacancy after the leaving Soldiers have departed. Departing Soldiers start making arrangements at time zero, but the movers may arrive only after the pack-and-load holding gate time. For simplicity, household goods are modeled as arriving after check-in to temporary lodging by a pseudo-random amount of time, rather than having them appear before the Soldier. In order to show best-possible

[3] M. Matsumoto and T. Nishimura, "Mersenne Twister: A 623-Dimensionally Equidistributed Uniform Pseudo-Random Number Generator", ACM Transactions on Modeling and Computer Simulation, Vol. 8, No. 1, January 1998, pp 3--30.

performance, the leaving and arriving Soldiers are allowed to enter the simulation at day one to make preparations, but cannot leave or arrive until day 90.

Part of the process of leaving the post from on-post housing is checking into temporary lodging while the house is cleaned and inspected. In the simulation, this can create a condition of "lodge-lock", in which arriving Soldiers take the temporary lodging and thus prohibit some of the exiting Soldiers from leaving. This, in turn, can prevent the arrivals from moving in. For this reason, the model allows the option of exceeding the supply of temporary lodging, which corresponds to looking further out or accepting more expensive accommodations. This option is employed in the case of Jackson, which is the scenario that results in lodge-lock.

Different posts may combine the officer/counselor roles, as in Carlisle's combining housing inspector, counselor, and officer into one role. To accommodate this, different versions of the model are developed to pool these resources according to base practice. During site visits and data collection stage of the model development, it became apparent that each post performed the "other" in- and out-processing tasks differently. A combination of "one-stop" activities, e-MILPO and Soldier visits to each organization not at one-stop is required to clear the "other" in- and out-processing steps as illustrated in the Figure 3-3 below. In addition, a number of the tasks such as medical and dental require Soldiers to access community resources not on post where resource availability is not easily known. Because of the miscellaneous nature of "other" processing, it is modeled as a random delay of approximately 5 days without regard to resource loading. The time estimated was based on input received from Soldiers.

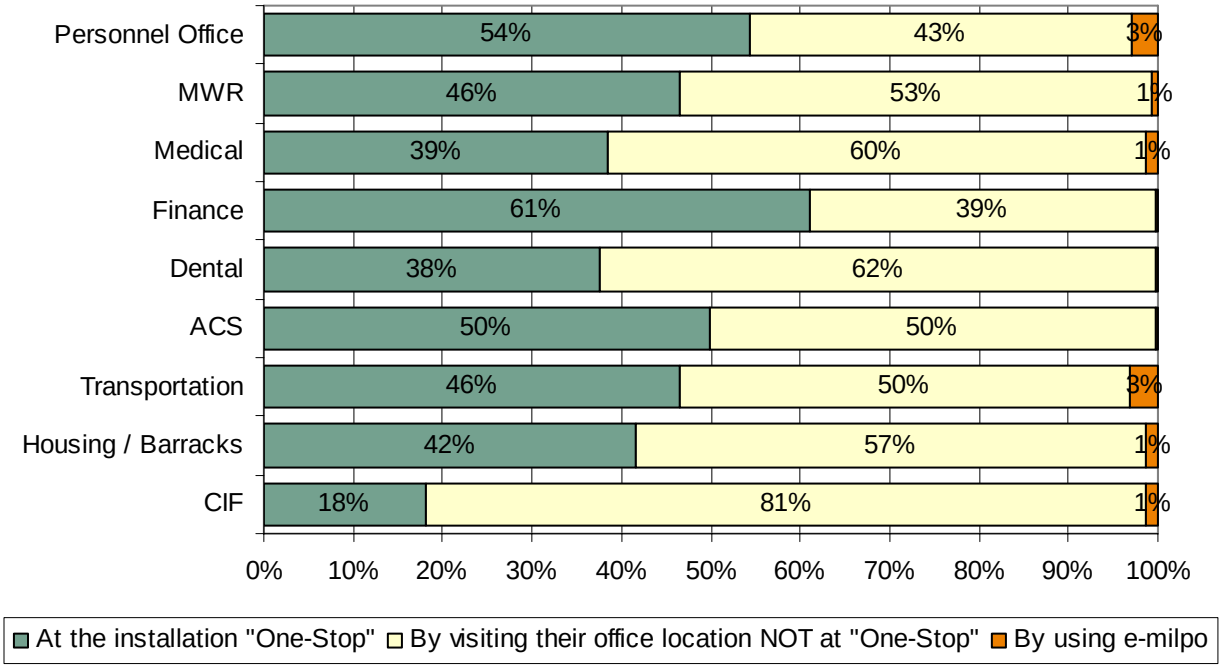


Figure 3-3– Methods of Clearing "Other" In-Processing Tasks. *Clearing of other tasks (e.g. finance, personnel records, MWR, etc.) varies significantly by post. As a result, this process flow is represented by an average "delay" based on Soldier survey responses.*

The model is agnostic in regard to the MOS of the Soldiers who are in- and out-processing, tracking only the overall percentage of total Soldiers cleared. However, the composition of the Soldiers available to the unit may impact the unit's ability to begin collective training.

3.4. Validation

After implementation, the simulation model was verified to see that Soldiers would successfully leave and enter the base under different scenarios, such as housing shortages that require changes of plan concerning residence. It was also compared with the process map to see whether the event message pipelines between process blocks went as intended. Clarifications concerning the process map also resulted in corresponding changes to the simulation code. To validate the model and our understanding of the meaning of the model coefficients, we developed a scenario for the annual class transition at Carlisle. A number of revisions to the model and data resulted from the cycle of running the simulation, examining the results, and discussion. The results examined included the exit and entry time frames, which were compared to the known routine at Carlisle, as well as queue lengths and resource utilization levels as a function of time.

Using holding gate time point of 60 days for pack-and-load and a check-in holding gate time of 90 days for entry, we see in the model results a rate of progress that resembles the actual routine at Carlisle as illustrated in Figure 3-4. The model also allows one to look into the queues in terms of queue lengths and utilization of servers. For the Carlisle scenario, we have dynamically varying queue lengths illustrated in Figure 3-5.

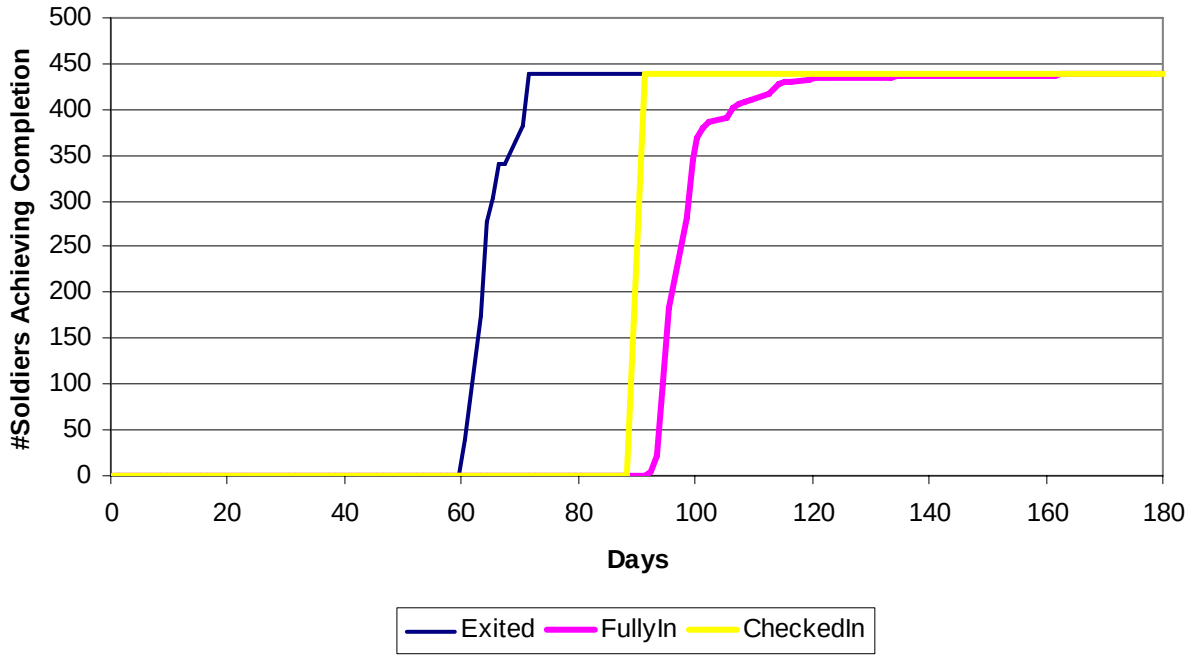


Figure 3-4–Carlisle Barracks Modeled Rate of Progress (In- and Out-Processing) Estimated. *Output from the Carlisle Barracks model mirrors the Carlisle calendar. Students begin the out-processing (scheduling transportation and housing) in advance of graduation then quickly exit within a 6-10 day period. Arriving Soldiers then begin to check-in and clear the in-processing tasks also within a similar 6-10 day period following maintenance of housing.*

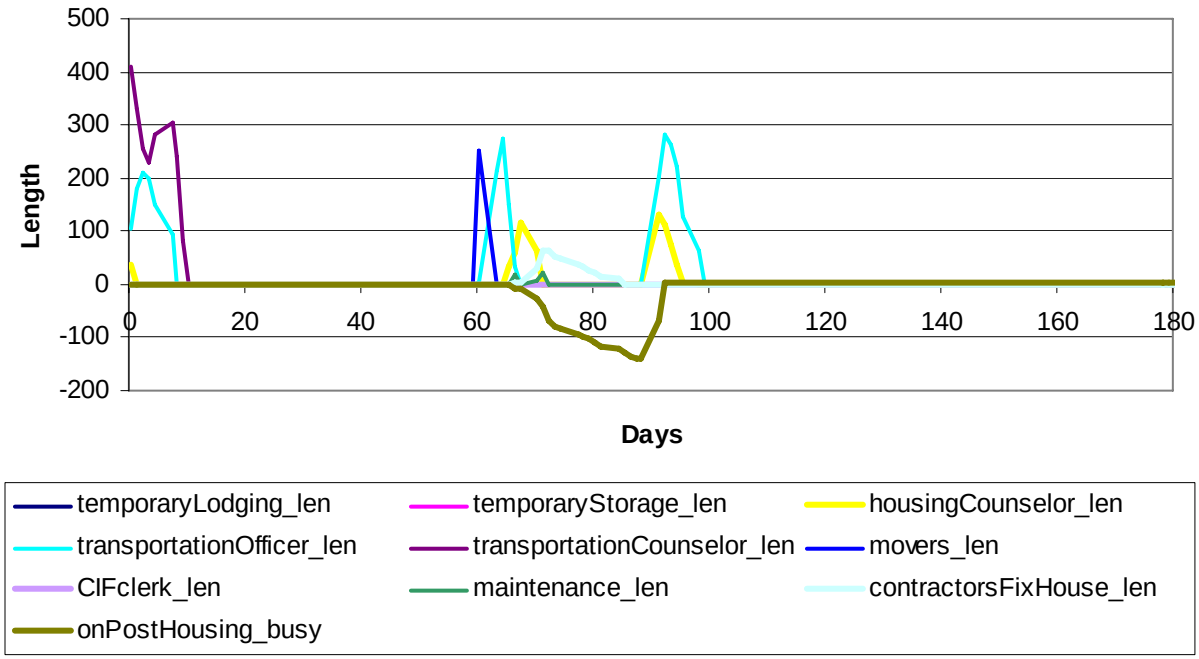


Figure 3-5–Carlisle Barracks Queue Lengths. *Output from the Carlisle Barracks is consistent with what was learned during the site visits. The negative "onPost_Housing_Busy" value represents available housing.*

In the nomenclature of the reset model, additional vacancies in temporary lodging, housing, and storage vacancies over what the model started with are presented as negative queue lengths. We see this happening with on-post housing during the transition period as residents leave without being immediately replaced by arrivals. When the "go" signal for making arrangements is given at time zero, queues form for the services of transportation officer and transportation counselor. When they leave after day 60, queues form for the use of the movers, transportation officer, and housing counselor (who is also the housing inspector). Between cohorts, the contractors repair the housing units as needed, and basically get done in time for the incoming class. Then queues form for housing person services and transportation officer at the same time that the free housing is occupied.

Looking at resource utilization in the queues, we see a pattern that also reflects the expectation in the process model as illustrated in Figure 3-6.

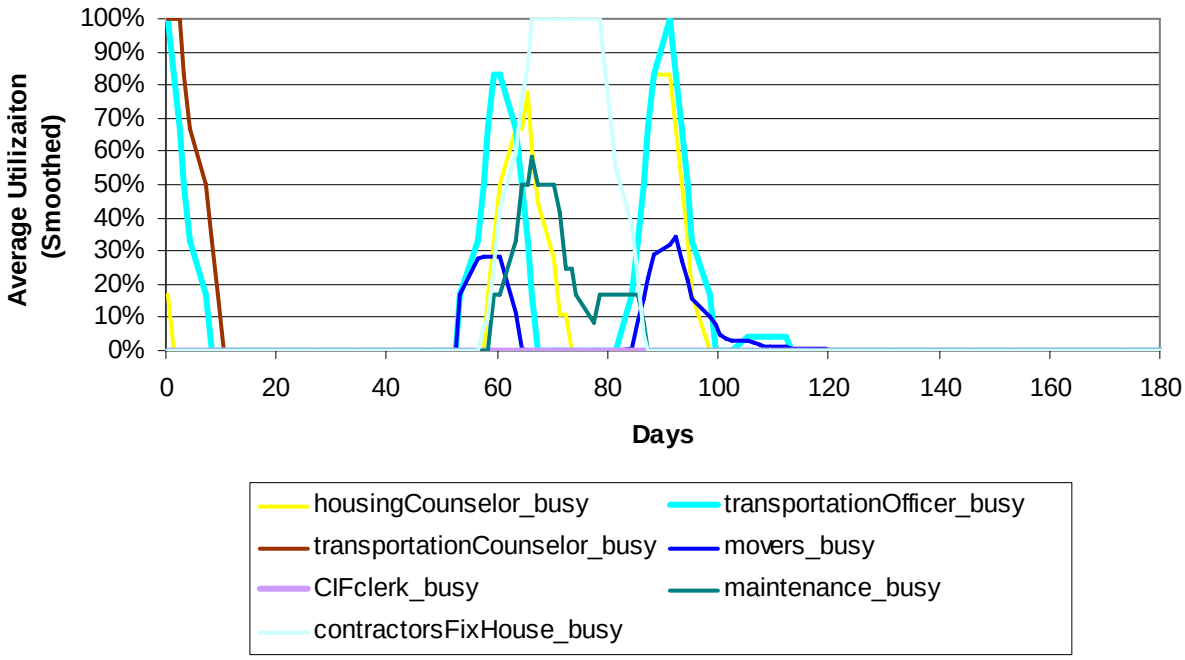


Figure 3-6–Carlisle Barracks Resource Utilization During Modeled Reset Period. *Looking at resource utilization in the queues, we see a pattern that also reflects the expectation in the process model.*

Initially transportation officer and transportation counselor utilization are high, reflecting the making of arrangements by outgoing residents. After the "go" signal, transportation officer and housing counselor utilization peaks, accompanied by a peak in Mover utilization. Then, maintenance and contractors are busy with the housing stock, followed by utilization of movers, housing counselor, and transportation officer for the move in. From the Carlisle test results above we see that the model produces activities in the sequence expected from the process model, and performs these in a timeline that is consistent with Carlisle achieved turnaround times for incoming and outgoing students. The model parameters thus arrived at form the baseline from which those for the ARFORGEN reset scenarios are set.

4. Findings and Analysis

4.1. Modeling Findings

The simulations of Unit Reset at Hood, Bragg, Campbell, and Jackson show that the criterion of 85% of the unit's personnel fully in-processed is not attained within the 30-day objective, based on current staffing and resource levels as well as processing time requirements under current procedures. Smaller bases have a longer turnaround time than the larger ones. In Figure 4-1, the measures of effectiveness of the simulated posts under varying degrees of personnel exchange are given in terms of days using the start of the 90-day stabilization period as day 1. Thus the goal is 85% of Soldiers completely in-processed completion on day 120. Assuming a 70% Unit Reset of a 7,000 Soldier unit, Hood and Bragg achieve R-date at day 168, Campbell at day 238 and Jackson at day 417 under modeling assumptions.

Figure 4-1–Reset Model Output. *Based on current resources, installations are not capable of meeting ARFORGEN guidelines assuming parameters of study. The two largest installations studied provide the shortest timelines achieving R-date by day 168.*

Scenario	Status	Installation			
		Hood	Bragg	Campbell	Jackson
A- 70% Reset of 7,000 Soldier Unit	R-date (85%) **	168	168	238	417
	Completion Date (100%)	186	210	304	469
	Check-In Only ##	141	127	197	381
B-50% Reset of 7,000 Soldier Unit	R-date (85%) **	144	142	190	319
	Completion Date (100%)	161	170	239	336
	Check-In Only ##	95	102	158	234
C-30% Reset of 7,000 Soldier Unit	R-date (85%) **	122	119	144	206
	Completion Date (100%)	155	161	169	234
	Check-In Only ##	94	98	109	165

** Defined as the time at which 85% of Soldiers have completely in-processed at the receiving installation
Check-in is almost instantaneous for modeling purposes and only requires temporary housing to be available

To analyze these results we examine the simulation results in detail for the case of the 70% personnel exchange in a 7000 Soldier unit.

4.1.1. Fort Hood Simulation Results

As seen in Figures 4-2 and 4-3, the full move-in and check-in process is substantially complete by day 180. 85% of the incoming Soldiers are fully moved in by day 168, although the check in is much faster. In terms of the queue for resources, transportation officers and movers have significant numbers of customers awaiting service throughout the reset period as shown in Figure 4-4 and the queue for lodging is also a significant feature. In Figure 4-5 we see that movers and transportation officers are utilized 100% throughout the interchange of personnel, with peak activity levels by housing inspectors and housing counselors.

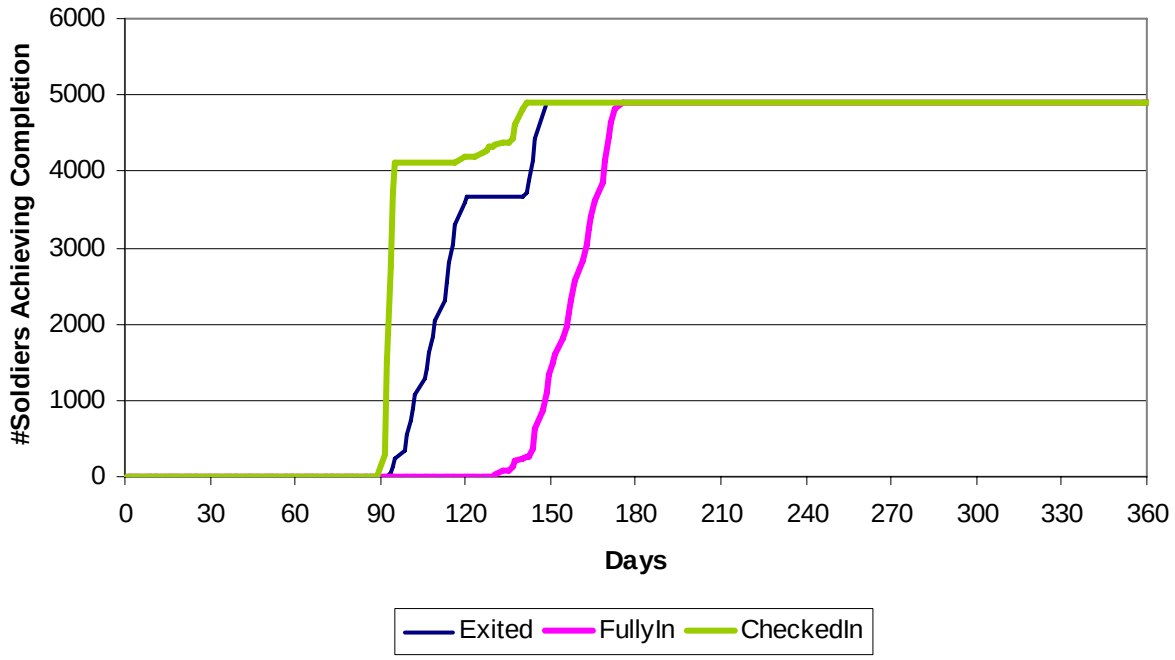


Figure 4-2– Fort Hood Rate of Progress.

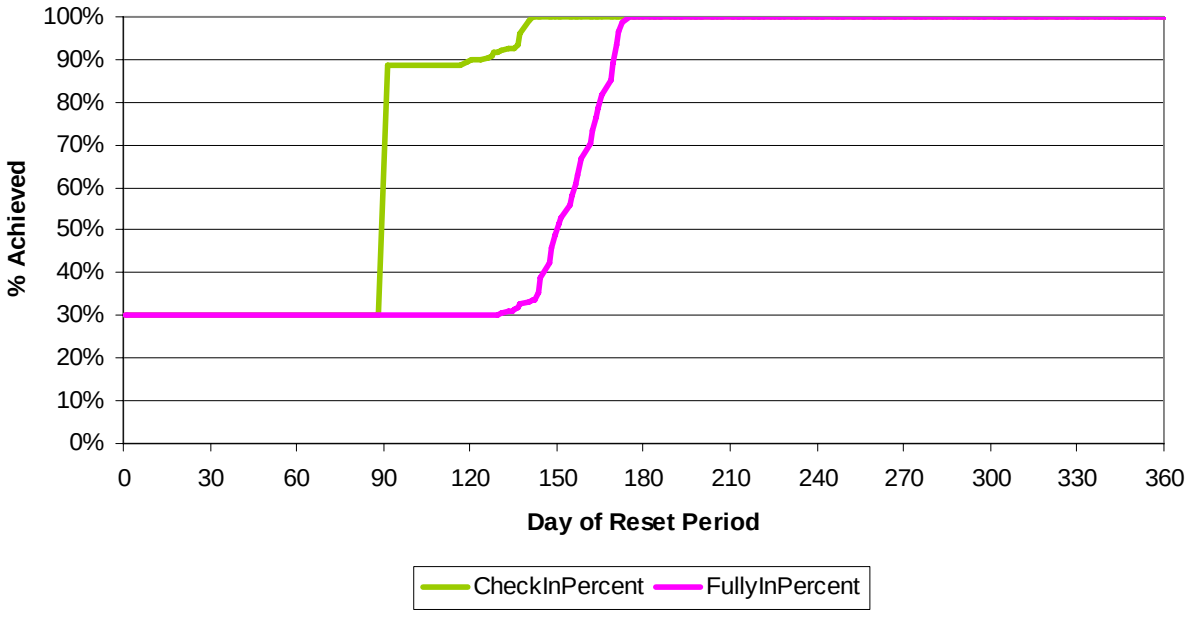


Figure 4-3– Fort Hood Completion Percentage.

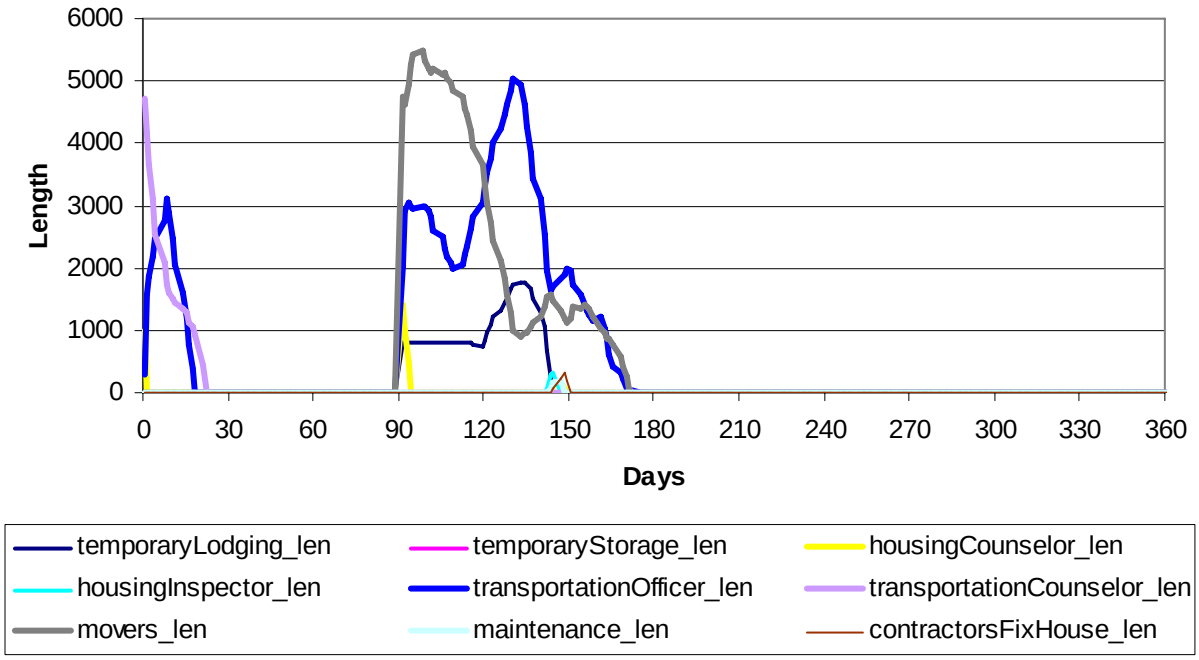


Figure 4-4– Fort Hood Queue Length. *In terms of the queue for resources, transportation officers and movers have significant numbers of customers awaiting service throughout the reset period and lodging has a queue for over 50 days.*

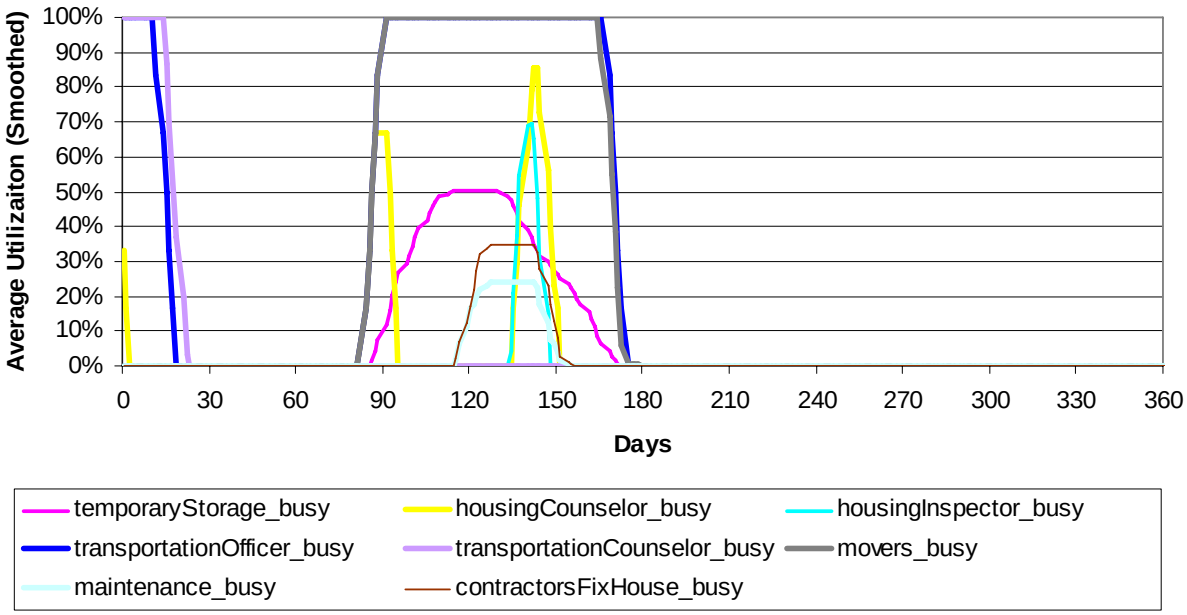


Figure 4-5– Fort Hood Resource Utilization. *Consistent with the queue length results, movers and transportation officers are utilized 100% throughout the interchange of personnel. There are also nearly simultaneous transient loads on the housing inspectors and housing counselors. Due to the 90 day stabilization period being used for preparation, the peak loading on the transportation counselors is 100% utilization in the first 14 days.*

4.1.2. Fort Bragg Simulation Results

In Figures 4-6 and 4-7, we see a similar rate of simulated progress at Fort Bragg. Starting from day 90, the arriving Soldiers fully check in and move in by day 210. 85% of the incoming Soldiers are fully moved in by day 168, although the check in is much faster. Looking at queue lengths in Figure 4-8, the biggest queue in the reset process is for the transportation officer function. The queues for CIF clerk, temporary lodging, and movers are also important. During the reset period, the transportation officers are busy, but peak activities also occur for CIF clerks, maintenance and contractors (to turn around housing), and movers as shown in Figure 4-9.

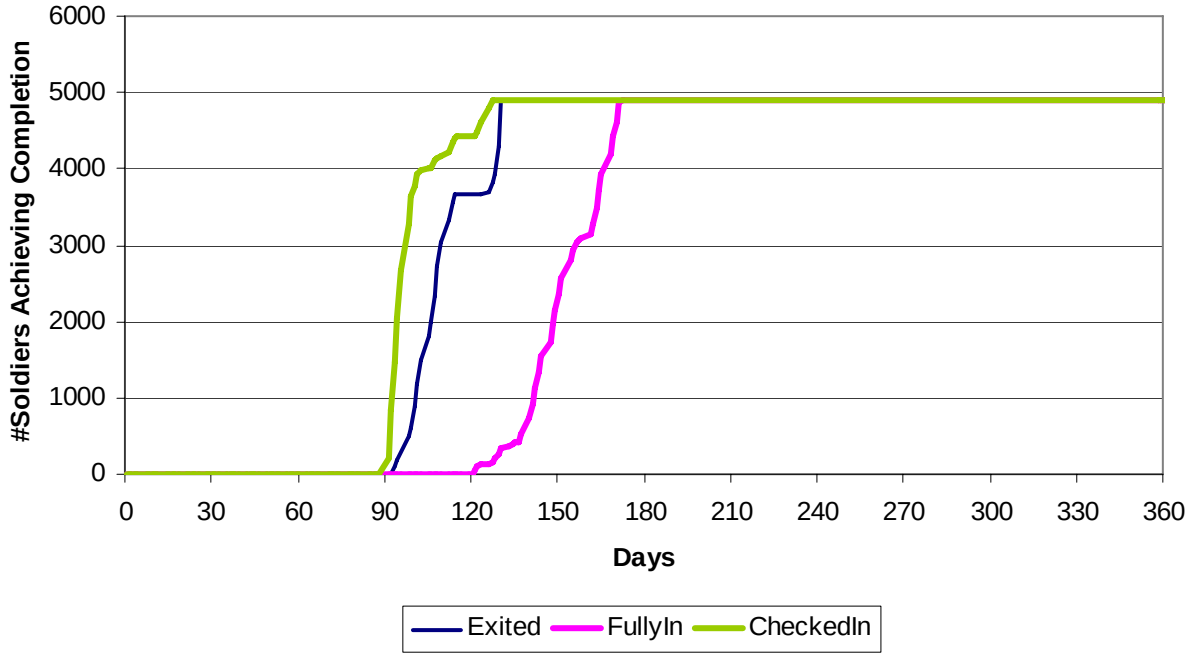


Figure 4-6– Fort Bragg Rate of Progress.

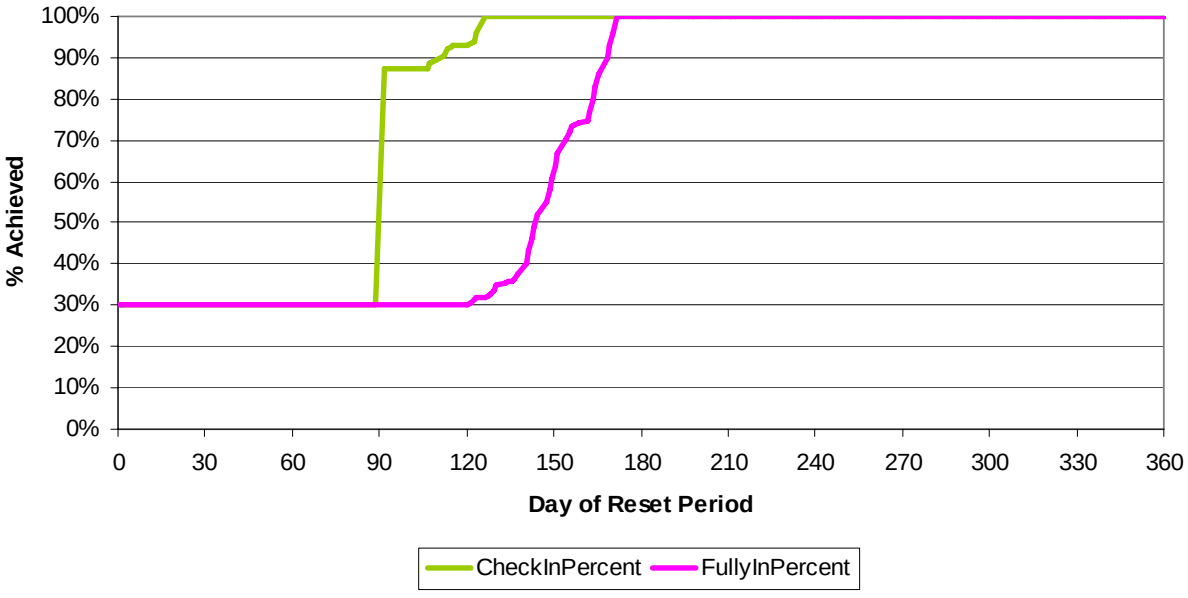


Figure 4-7– Fort Bragg Completion Percentage.

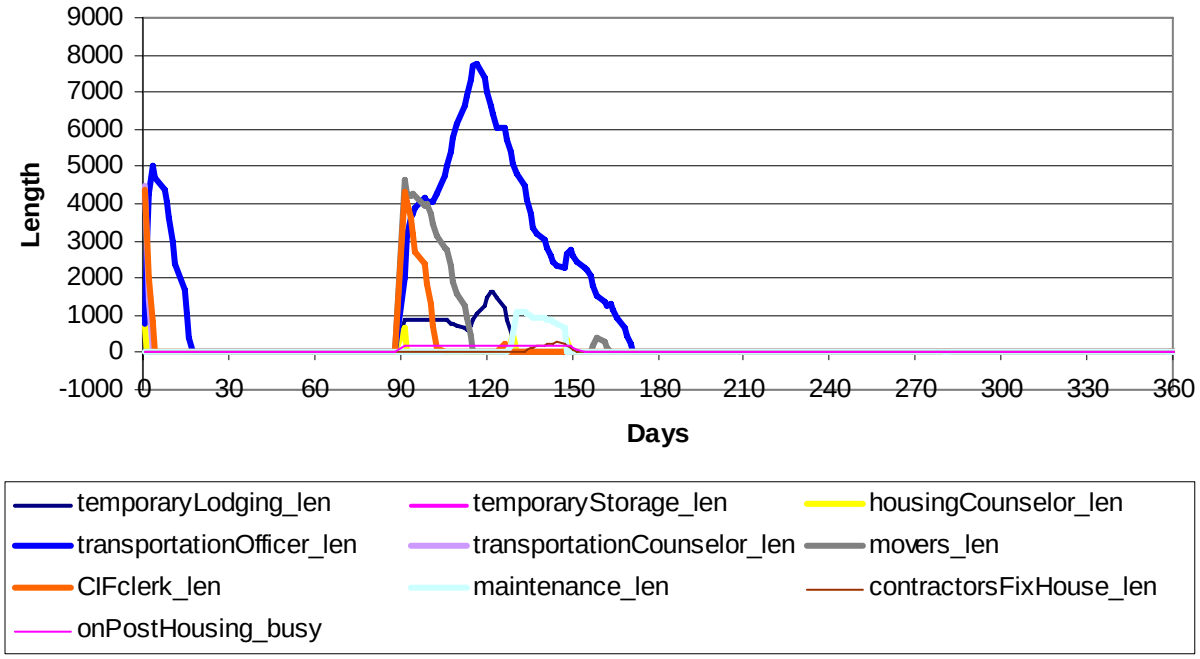


Figure 4-8– Fort Bragg Queue Lengths. *The biggest queue in the reset process is for the transportation officer function. The queues for CIF clerk, temporary lodging, and movers are also important. Significant preparatory activity occurs in the first 90 days as well.*

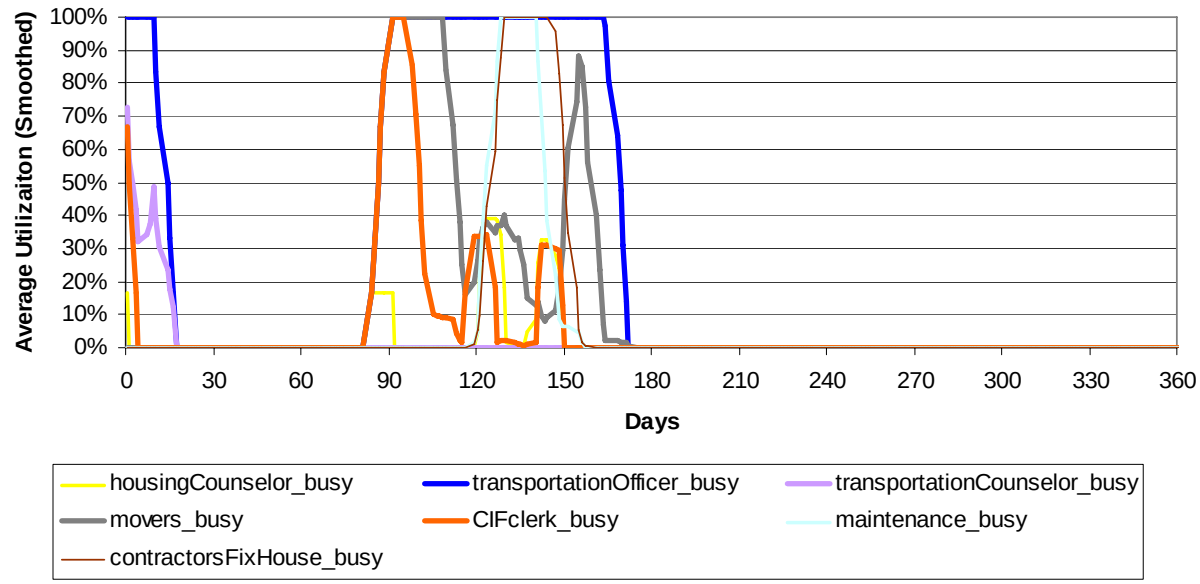


Figure 4-9– Fort Bragg Resource Utilization. *During the reset period, the transportation officers are busy, but peak activities also occur for CIF clerks, maintenance and contractors (to turn around housing), and movers.*

4.1.3. Fort Campbell Simulation Results

Figures 10 and 11, presents the rate of progress at Fort Campbell. The reset is complete at day 304, although check-in is complete on day 197. This is a slower rate of progress than with Hood or Bragg for the same size of unit. 85% of the incoming Soldiers are fully moved in by day 238. Figure 4-12 presents the resource queues, which are significant for transportation counselor, transportation officer, movers, CIF clerks, and temporary lodging. This is reflected in the resource utilization results presented in Figure 4-13.

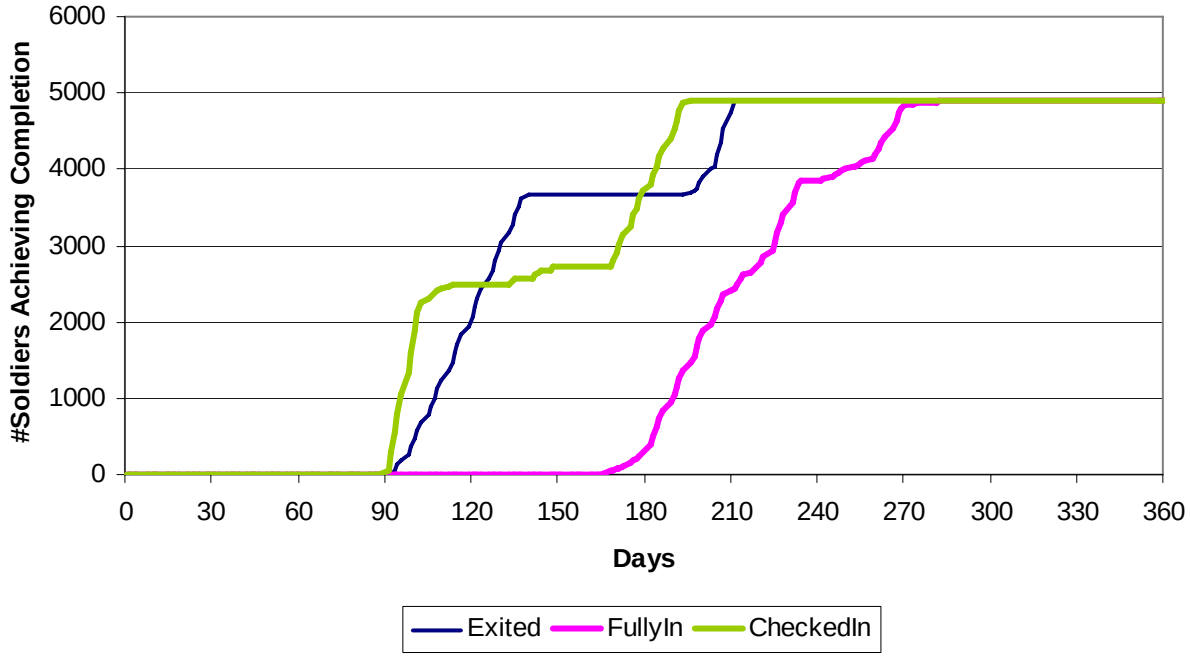


Figure 4-10– Fort Campbell Rate of Progress.

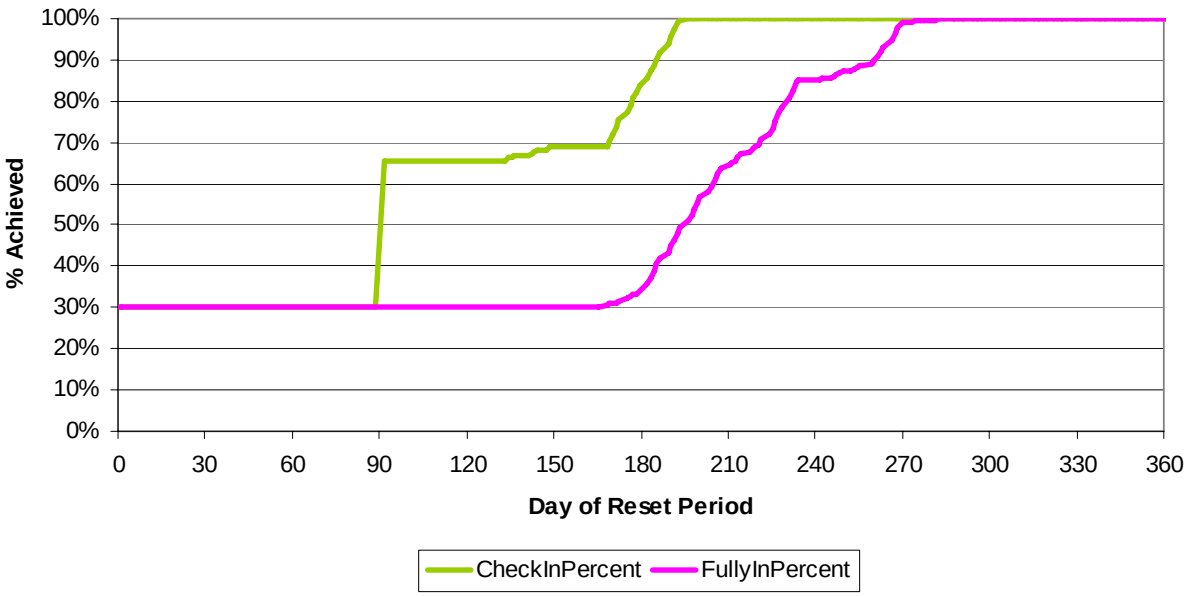


Figure 4-11– Fort Campbell Completion Percentage.

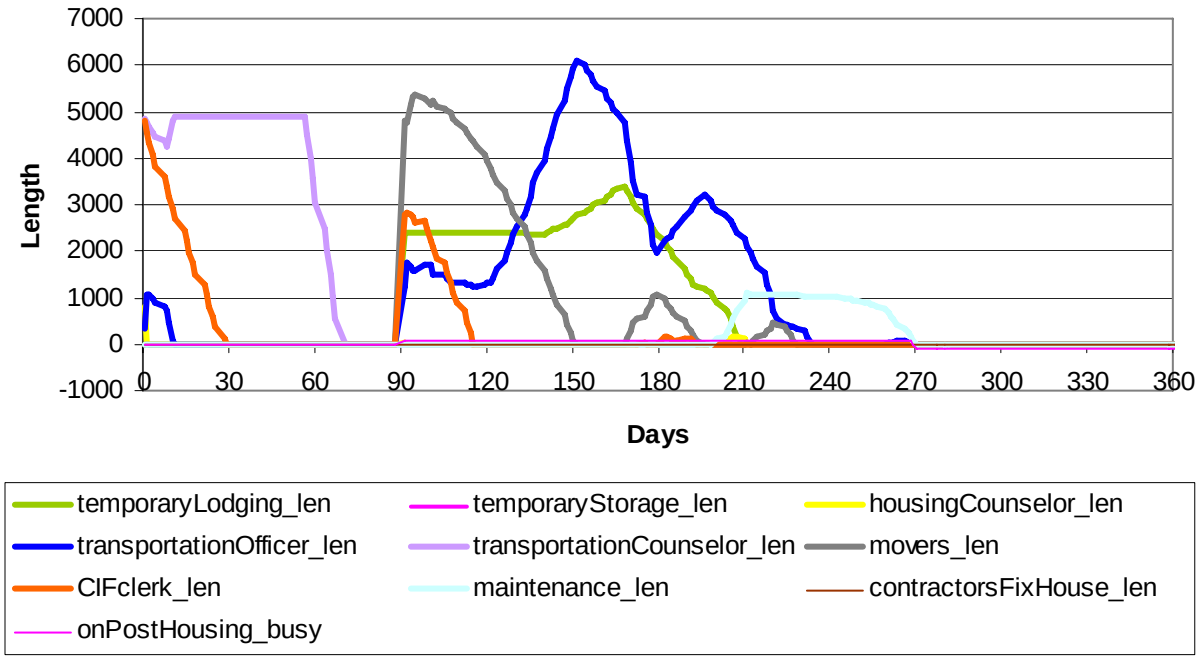


Figure 4-12– Fort Campbell Queue Lengths. *During half of the stabilization period, the transportation counselor function is busy helping prepare for the moves. In the reset period itself, the major resource queues are transportation officer, movers, CIF clerks, and temporary lodging. At Campbell, exiting Soldiers were not simulated as being able to exceed the temporary lodging resource.*

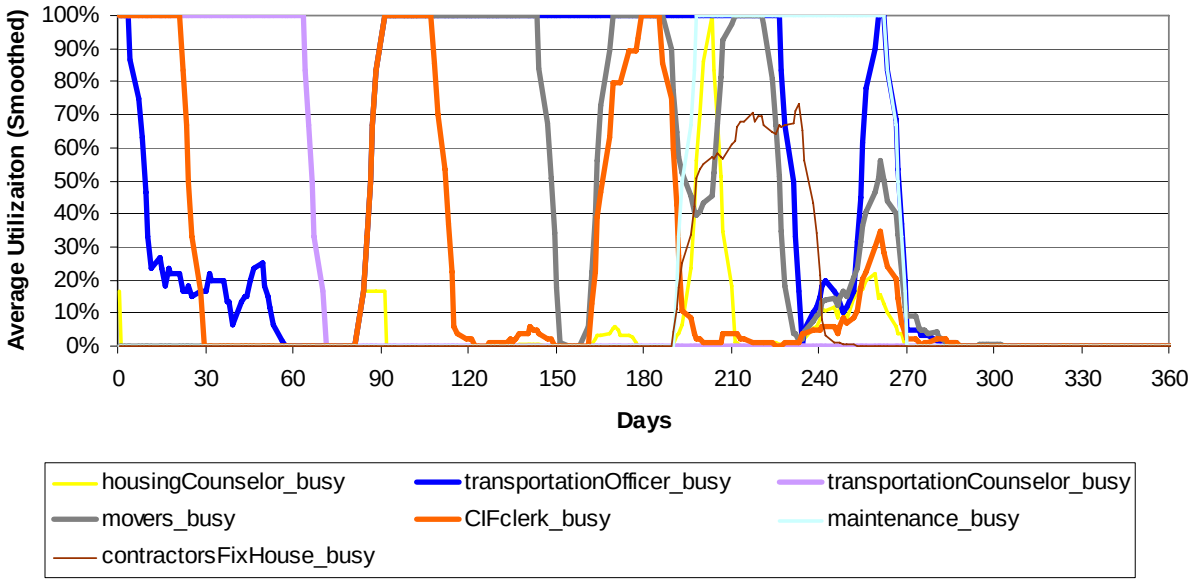


Figure 4-13– Fort Campbell Resource Utilization. *Due to overlaps, many of the resource loadings do not show well. However, the transportation officer is fully loaded for over 130 days after the go signal at 90 days, and the movers are at full capacity for 60 days, followed by a second peak in activity around day 180 at which time Soldiers who are in-processing move from temporary housing to permanent housing.*

4.1.4. Fort Jackson Simulation Results

Fort Jackson has the slowest simulated reset. Starting from day 90, the arriving Soldiers fully check in and move in by day 469 as shown in Figure 4-14. Check-in and exit also require a significant amount of time. Looking at completion percentages in Figure 4-15, the move-in process is 85% complete at day 417. Significant queues are observed for the CIF clerk, transportation counselor, transportation officer, and temporary lodging resources as shown in Figure 4-16 and utilization is nearly 100% throughout the period as shown in Figure 4-17.

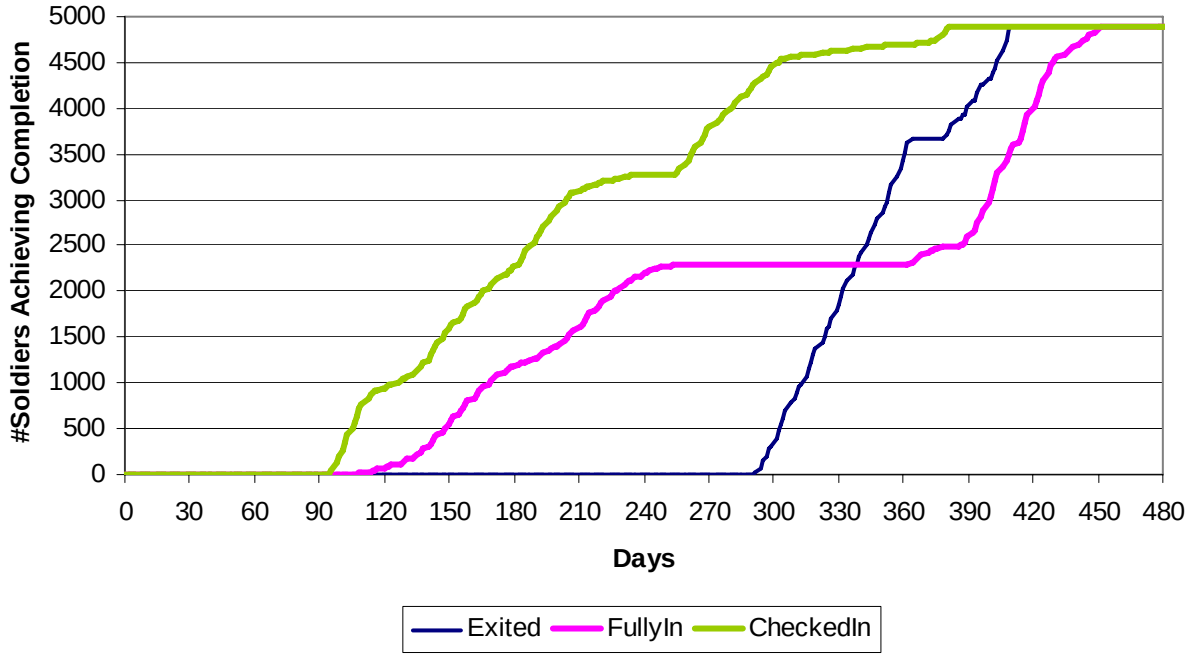


Figure 4-14– Fort Jackson Rate of Progress.

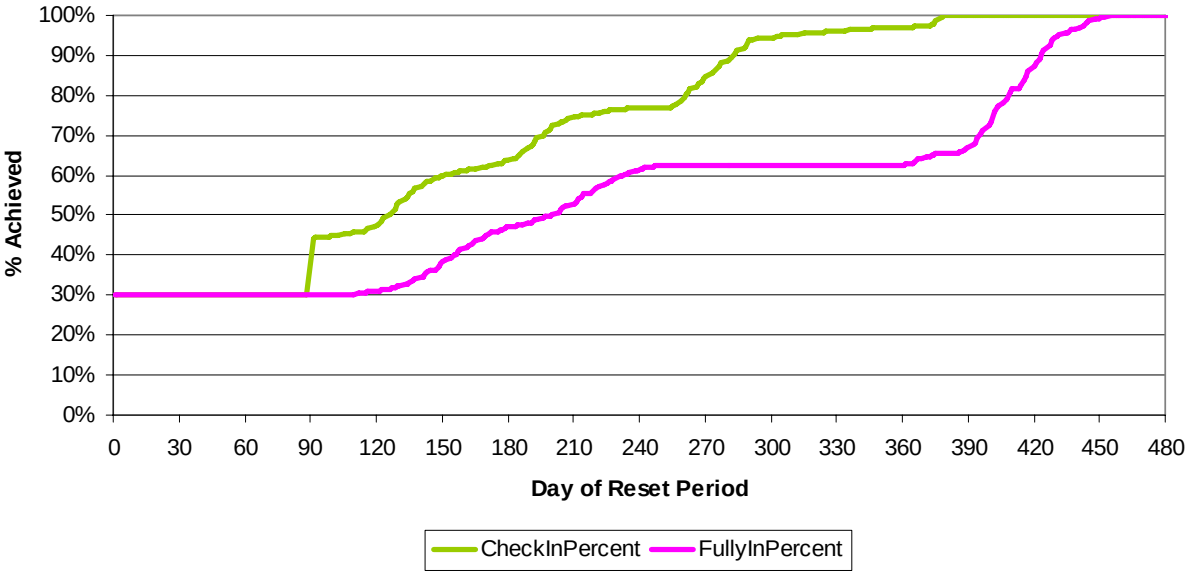


Figure 4-15– Fort Jackson Completion Percentage.

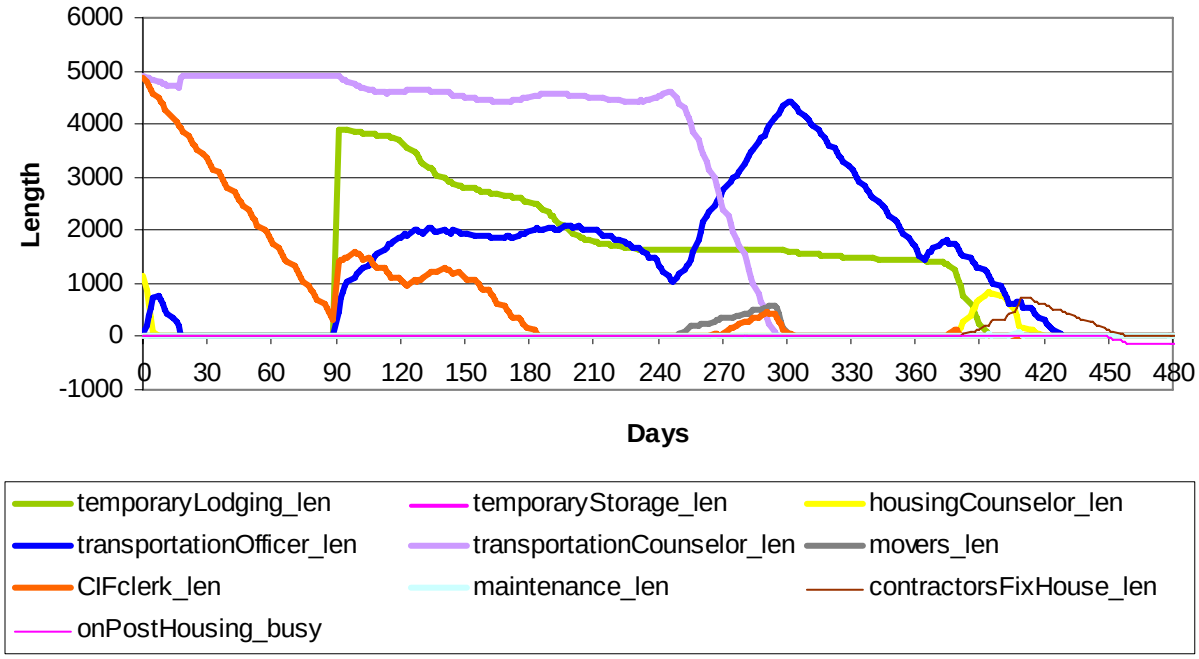


Figure 4-16– Fort Jackson Queue Lengths. *Significant queues are observed for the CIF clerk, transportation counselor, transportation officer, and temporary lodging resources over an extended period of time.*

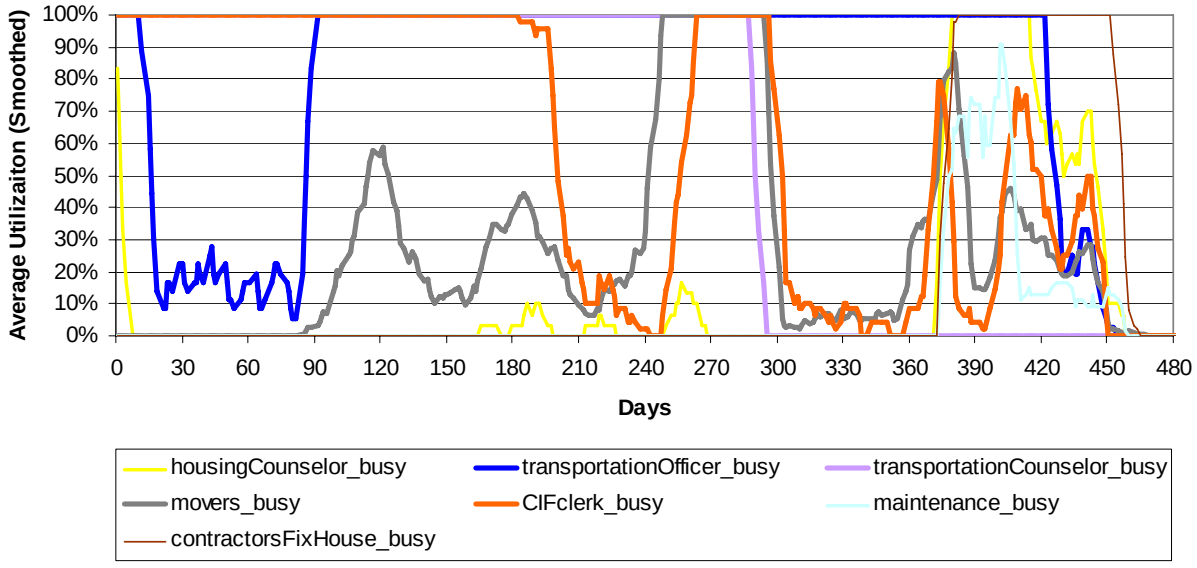


Figure 4-17– Fort Jackson Resource Utilization. *The CIF clerk, transportation counselor, and transportation officer functions are fully utilized for extensive periods of time, indicating the need for additional processing capacity if a brigade combat team is to be reset at Jackson with a 70% swap-out of personnel.*

4.2. Site Visits and Interview Findings

During the course of this study we conducted interviews with subject matter experts including the Army Staff and special staff, IMCOM and HRC, and we visited five installations to interview IMCOM staffs, unit leaders, and garrison commanders or their representatives. We had four goals in mind: gather objective data to support our model, provide qualitative information regarding the potential impacts of ARFORGEN implementation, solicit the installation-unique perspective of that implementation; and gain a better understanding of the intricacies and how-to of in/out processing.

During site visits, it became apparent that the clearing process is complicated. While component activities can move forward simultaneously, sometimes an unexpected delay with one of the functional components stresses the installation's other capabilities and could jeopardize a Soldier's ability to meet the R-Day deadline. The critical elements, due to their multiple components, are housing, housing maintenance, and transportation. Further, the typical installation support staff is manned by a Table of Distribution and Allowance (TDA) designed to accommodate the orderly flow of Soldiers and their Families in and out of the installation throughout the year, with spikes at the beginning and end of the summer. These summertime spikes are minor, however, compared to what occurs under ARFORGEN. As a possible scenario, it would be a logistical nightmare if approximately 70% of 7,000 Soldiers from a unit at Ft. Carson, 90 days after returning from deployment, have to depart the post within a 30-day window and at the same time their replacements are arriving to in-process. It would mean within 30 days roughly 10,000 Soldiers, half of them married, would pass through the same installation manned by a staff that was created to handle less than one-third the amount. Since about half of all Soldiers are married, the number of trucks required to move these Soldiers and their Families would stretch bumper to bumper 55 miles in an unbroken line—approximately the distance from Ft. Carson to the Denver city line. Processing, weighing, inspecting, and supervising just the movement of household goods is an undertaking of such magnitude that existing installation staffs would be stretched past the point of flexibility.

The findings and conclusions that follow contain the common themes and universal truths we uncovered. We correlated these findings to include real and potential impacts of ARFORGEN implementation.

Finding #1: All installations are different. These differences must be taken into consideration with any new process-driven activity such as ARFORGEN.

True installation differences exist in many ways. The factors below reflect the installation attributes that combine to influence in and out processing and the ability to move large numbers of people through processes in a small time window:

- Composition of the Staff – *Some TDAs are over 10 years old, are no longer based on valid requirements and have been further reduced by budget constraints. The mix of military, civilian and contractors affects flexibility. The number of principal civilian positions filled by former or retired military is part of the culture. The level of contractor support, the age and experience of the available labor pool, and the number of temporary workers and military Family members filling jobs, and the jobs they fill, impact capabilities.*

  - ✓ Staffs are on subsistence manning. They can (barely) hold their own, for the present, and accommodate surges for a limited period. However, they cannot adapt to a consistent five-fold spike on a bimonthly basis.

- ✓ The mix of civilian, military, and contractor employees influences management flexibility in making course changes, working non-standard hours, ramping up or down in response to challenges or sending workers to other installations to handle peak periods. The ratio of senior staff filled by retired military versus long time career DA Civilians influences the culture of the staff. For good or bad, responsive or reluctant to change, empirical or collegial, the situation is clearly in the eye of the beholder as the same characteristics are ascribed to both camps. Leaders must take this phenomenon into consideration when undertaking massive change such as ARFORGEN implementation.

- ✓ Contractors provide yeoman service to installations and have filled many gaps. The ability of the local community comes into play in some locales as to the amount and quality of services that can be provided based on the characteristics of their labor pool. In Alaska, for example, money was available to construct temporary lodging but the local capacity was dedicated to building Katrina victim shelters and therefore unavailable to support the Army's need to surge. In another situation, all available transportation and storage assets from Texas to Florida were committed to handling a surge at Ft. Hood. Combine simultaneous requirements at Forts Hood, Stewart and Bragg and impact becomes a tsunami. Some measures are in place, i.e., CSBS, to provide flexible contract procedures installations can use to ameliorate the effects of surging to a degree, but even they have limitations. For the most part the federal contract process does not reward creativity and leaves the installation with little room to wiggle. Installations with RCI housing contracts seem to have advantages in their ability to surge over those who do not. Speeding up the "occupancy to repair to occupancy" cycle is easy according to housing administrators, but they caution the ability to be flexible is only as good as one's contract and all contracts are installation specific.

- ✓ Many jobs, especially in the transportation and housing fields are governed by complex bodies of regulation. The requirement to have qualified personnel in many instances would negate the use of flex staff, fillers and temp workers to handle surges unless a triage system can be established that sets aside the out-of-the-ordinary cases for the professionals.

- ✓ A significant number of the civilians filling civil servant and contractor roles are military dependents and will disappear when units undergo mass exodus. Under a more gradual attrition schedule replacements trickle in and are able to occupy vacancies with little apparent decrement to organization mission performance. Under ARFORGEN if 30% of the ACS staff were to depart when a specific BCT resets, managers would want to staff based on unit affiliation or not hire dependents at all.

- ✓ Work rules in individual contracts / labor agreements vary widely from installation to installation affecting the flexibility of the workforce. The impact of unions on commanders' intentions in the implementation cannot be ignored.

- ➢ <u>Command Prerogatives</u> – *Significant latitude exists in the way installations manage their resources. There is little coordination between commands. Lessons learned are not shared. Performance metrics are not standardized.*

  - ✓ Garrison Commanders have wide latitude in the way they manage their resources. This is intentional, important and the right way to allow for the disparities that exist among commands. However, the absence of close coordination between

commands, or of wide promulgation of lessons learned coupled with the existence of only the most minimal standardized metrics, can create an ungoverned prerogative climate that can stifle growth, initiative and change. ARFORGEN implementation requires that all systems and sub-systems in the installation in and out process work at peak efficiency. There can be no boutique operations that when someone falters, that operation doesn't get performed. The days of "the finance office is closed for training; therefore their station will not be open until tomorrow" will not be acceptable. One best practice observed was a "synch matrix" that Ft. Jackson maintained to allow mid course adjustments to work around delays, shortages and stoppages.

- Missions and "Other Duties as Assigned" – Installation mission and additional regional *responsibilities impact resource commitment.*

  - ✓ The unit density, installation mission, additional regional responsibilities and tasks, such as area support to recruiters, ROTC, other services, retirees, etc. impact resource availability and duration of commitment. For example, Ft. Hood handles transportation needs for 56 counties in addition to the installation itself. Also, Ft. Jackson runs a Drill Instructor school. Both installations require the same assets to be used to manage ARFORGEN.

  - ✓ Mobilization missions, schools, and presence of Special Forces units all affect the installation work flow and the constant friction of having to support on-going activities at the limits of the installation's abilities to support any "big push." In the words of one installation manager: "Surge is normal."

- Community – *Local communities have varying abilities to provide additional resource support. Community participation in BRAC planning results in sounder relationships with installations*.

  - ✓ The varying abilities of the local community to provide labor, temporary lodging, transportation, schooling, and medical support have obvious impacts on the installations' ability to execute ARFORGEN. For example, sufficient motel rooms to handle the migration of thousands of Family members three times a year, remaining under-utilized the rest of the year, is not economically attractive to investors; only communities with a sizeable population base can sustain such a cyclical occupation as occurs with ARFORGEN. Skilled labor – plumbers, electricians and carpenters to support rapid turn-around of bases housing – exist in finite quantities in many of the communities that surround military bases.

  - ✓ It appears that communities which have participated in BRAC planning and analysis in concert with the installation have formed tight partnerships. Importantly, from an ARFORGEN perspective, they seem more likely to also have developed a business-process oriented relationship that leads to better understanding of the mutual support one renders to the other and the assets that are available. On the other hand, those who have not participated in a BRAC analysis have only a rather vague idea of the assets and support available.

- Climate/Distance – *For certain installations, weather and distance can affect the availability of resources and the way they do business.*

  - ✓ Alaska's long, harsh winter virtually shuts down the surrounding area. Roads are closed, populace displaced south, deliveries become infrequent, motels close, and

houses are boarded up. It is, after all, Alaska. Ft. Drum, experiences some of the same on a smaller scale, but it frequently resembles Alaska with the same impacts on the installation's ability to manage a large scale drawdown and ramp up as envisioned by ARFORGEN.

- ✓ Hawaii's weather is fine but its location at the end of a very long pipeline and the inflated cost of everything can have financial impacts on Soldiers and their Families. Household goods must come by sea, extending transit times. The isolated nature of the islands can impact the labor pool willing or available to work on the installation.

Finding #2: The In/Out Process lacks rigor. A lack of consistency makes operating at a higher pace of operations, such as what ARFORGEN demands, difficult.

The installations' answer to the question "How long does it take to In-Process a Soldier?" was almost always "four to five days". That doesn't mean the time it takes to in- process a Soldier is four to five days, but that Soldiers are given four to five days to do it in. As an exception, most installations admit they can get a Soldier through in two days or less. However, it sometimes does take four to five days to get through the process because the process is so loose. The implication for ARFORGEN is that while no installation could execute a 70% of BCT drawdown and re-build in 30 days with current manning levels and budgets, there is still considerable slack and opportunities to tighten process times.

The overall customer service philosophy of Army installations has developed into a focus on the individual which governs most of the way organizations operate as a whole. In the ARFORGEN concept, the focus cannot be on processing individuals but must be on the group as a whole. Large installations are already running continuous operations at a heightened state of work requirement. All installations have improvised, begged and borrowed to "make it happen" but none seem to have adopted a consistent state of being in this higher pace of operations. They are fast becoming weary and have made adjustments but have not put in place / reached a state of change to meet the challenges associated with ongoing troop and unit rotations as OEF/OIF continue.

- ➢ Organizations are still doing "business as usual." They are reactive, not proactive. Resources are not always available – for example, they can be closed for training, restocking, doing DCS, school physicals, etc. – and taking on the increased workload is seen as a temporary situation that must surely go away soon. (It is of interest that it takes just as long to in-process today as it did in 1971 when one of our team enlisted.) Most installations do not appear to look at their processes as a business would, not withstanding the influence of lean six sigma. For example, there are very few metrics used to measure throughput or efficiency or lead time. No standardization exists. There are few data kept, measured and used in process improvement. The demands of ARFORGEN are such that all supporting systems must work at peak efficiency before any of the more stringent criteria can be considered. When you ask the cruise line industry how they get 3000 people off and three thousand people on, with their bags stowed in their stateroom and all the food and drink they are going to consume in the space of 6 hours, they will tell you. "The chorus girls carry suitcases."

- ➢ The military school system, as well as Ft. Jackson, demonstrates it is possible to put the in/out process on a business basis. One of their tenets is to know as much in advance as is possible and plan around that information, adjusting as necessary. Carlisle Barracks has created a questionnaire for incoming Families that automatically generates

PDFs to appropriate staff agencies. Those installations that typically handle large influxes in a short time frame do so by pre-planning and pre-loading information (e.g. checklists, forms etc.) into packets, scheduling everything, developing a backup to the schedule, and prioritizing everything.

- Systems are not linked on and off the installation. In an example that is mirrored at almost every level in one form or another, Recruiting Command has personal data on every recruit; but because that information is not shared, Ft. Jackson has to re-punch that same data before the new recruit starts his first day in the Army. Quite often managers don't know what is going to happen or in what numbers. Soldiers arrive within a broad time window, with and without Families, and the system processes them. By necessity, some organizations collaborate, such as housing and transportation, but for the most part organizations operate independently both within the post and a region.

- It is difficult for installations to cross level or borrow manpower to meet recurring surges. Labor agreements and contracts notwithstanding, staffs, particularly after being reduced to the bone, are quite often very technically proficient because the rules are so arcane and complicated – and require such specialized training experience that it just isn't possible to merely double up or bring in temps. For ARFORGEN skilled staff could do triage, let other less skilled do the routine and the more competent the corner cases. It might be possible to create fire brigades, like gypsy bands of skilled workers from the installations less impacted, to export during surges, or to have comprehensive understudy or swing actor training programs. As it stands, handling ARFORGEN will be like watching the circus come to town: everyone has a part to play and the very difficult job of raising the big top is made to look easy. Currently units are not involved in facilitating in/out processing. Commanders indicated they would be willing to participate, especially in establishing priorities for who leaves and arrives and in what order. In their minds, key personnel suddenly include supply sergeants and property book officers.

- Installation "one stops" are usually not "one" stops. A different variety of installation functions is available at each installation one stop and there are a few functions that can be processed there, but many of the smaller functions require Soldiers to travel to their office location to clear or in-process. There is a distrust of the e-milpo system and it is not widely used. Organizations would seemingly rather stick to the old way of stamping and signing off on a piece of paper.

- Overall the capacity of the post activities to process Soldiers within a set period of time of 30 days is influenced by a variety of factors. Without standardization and metrics, installations cannot adequately plan, manage and improve operations as would be required if ARFORGEN were implemented. The process of in- and out-processing Soldiers must be a predictable event for both the installation and the Soldier with as little mystery as possible whether you land in Alaska or Alabama. Systems utilized to process the Soldier cannot share information and eliminate redundancy when they are not linked. Commands are not communicating often preventing prior preparation for personnel surges and other issues. When the 3rd BCT, 1st Infantry Division was stood up at Ft. Hood, because of the ARFORGEN-like requirement to rapidly come to a level of fill, troops were provided by diverting entire graduating classes from Basic Training. There were almost 75% of the BCT on the ground, but they were all privates. For a significant period the ranking officer was a Colonel and the next ranking a 2d Lieutenant who was made the Brigade XO. There were few NCOs, no company commanders, no one with military driving licenses or ammunition handling certificates, and no one with

authority to sign for ranges. These all demonstrate resource challenges that could occur with ARFORGEN.

Finding #3: Installation personnel uniformly feel that a massive drawdown and reconstitution is impossible given current resources. Full ARFORGEN implementation will require sweeping changes to a wide array of Army systems and culture.

"Akin to replacing horses with trucks," one Army staff officer said when discussing the cross-Army impacts of converting to the envisioned ARFORGEN process. Site visits confirmed that at virtually no level is ARFORGEN on anyone's radar screen – everyday business is all consuming and difficult enough as it is to worry about future "what ifs." Most know of it, but only in the most general ways and little, if any, thought is given to accommodating the paradigm shifts ARFORGEN will require.

In discussion, installations took a willing and positive attitude to tackling implementation of this "new" Army direction but quickly concluded the massive draw-down and reconstitution "won't work" in the designed 30-day window. They were uniform in declaring it would be impossible to condense this situation into a manageable workflow within such a tight time period. They cited insufficient resources – qualified staff, time, facilities, and money for overtime and new hires. Additionally, they cited a lack of flexibility in contracts and manning documents, and restraints imposed by policies and regulations.

Two particular conclusions were strongly expressed: first, the effects of influences outside installation control – the personnel system, military schools, equipment – seemed insurmountable, no matter what the installation did; and second, the negative impacts on Soldiers and Families (well-being, financial and retention) will be substantial and pervasive.

To that end, full ARFORGEN implementation will require sweeping changes to a wide array of Army systems and culture:

- Military Education/Schooling – *NCO/OES attendance is a condition for promotion. Cannibalized Soldiers are denied schools with career implications. Students are pulled from schools before scheduled completion. The low density/high skill training graduation frequencies do not synchronize with ARFORGEN.*

  - ✓ The requirements for NCO/OES attendance as a condition for promotion or assignment will impact the Army's ability to generate sufficient NCOs and Officers to meet required fill times because if Soldiers are not available to attend requisite courses the available pool of officers and NCOs dries up. Alternatives such as the Vietnam era 'shake and bake' courses produced substandard products and did not serve the Army well. Soldiers who are diverted (cannibalized) from a recently deployed unit to another already in queue to deploy (frequently on the same installation) to meet outstanding critical requisitions are denied school opportunities that will have career implications.

  - ✓ The current practice of pulling students from schools before their scheduled class completion to meet deploying unit fills is already beginning to render the value of attendance as moot. Under ARFORGEN, with very large strength requirements having to arrive in a very short window, the personnel community's ability to finesse end strength is even more severely restricted.

- ✓ Certain low density/high skill training (e.g. master gunner, supply management, senior level schools), SSC/SMA and commissioning sources (ROTC and USMA) have graduation frequencies that do not synchronize with ARFORGEN unit fill date requirements. Units whose build up dates do not coincide with West Point graduate availability mean none of its 2d Lieutenants will be Academy graduates; other units' lieutenants may all be from the academy, circumstances that go counter to long and well-founded traditions for service academy grads. On a less parochial note, new majors qualified to do staff work are available only twice a year, etc. ARFORGEN implies liberal use of snow-birding, black-birding and holding assignments to create artificial availability times to match the unit needs.

- Personnel Management – Assignments are individualized, and often negotiated. Some *assignments will be seen as sinecures protected from deployment. Current unit personnel requirements are not being satisfied within 120 days of post-deployment. The timing of personnel actions can have strong impacts on installation capabilities to begin out processing. Changes of Command are very difficult to synchronize within the 90 – 120 day period.*

  - ✓ At grades E6 and above assignments are individualized, often subject to negotiation and balanced against requirements, taking into consideration the needs of the service while accommodating the desires of the individual if possible. Under the compressed ARFORGEN schedule, a Family wishing to move at the end of school or based on a child's completion of her senior year in high school will find those wishes secondary or the family will elect to stay while the sponsor moves. Also without careful management nominative assignments will be seen as sinecures protected from deployment.

  - ✓ Current unit personnel needs are being satisfied at rates less than 75% of fill on R-Day with incremental increases finally approaching 97%+ as deployment becomes imminent. In the words of a personnel manager: "I'd describe the current situation as a plates and wands situation with a lot of squeaking wheels."

  - ✓ In many instances orders production is intentionally delayed at the division level until after re-deployment to avoid distractions in the field. This reduces the reaction time of both Soldiers and the installation to plan and prepare for their move. The decision to delay issuing orders while still deployed is understandable, but it will be a causative factor in the installation's inability to execute ARFORGEN as required. The timing of Stop Loss and Stop Move revocation has strong impacts on installation capabilities to process as well because it creates an artificial bow wave that overwhelms the staff. Awards and efficiency report submissions have to be completed and fully processed before Soldiers can move into a departure window, and that is currently taking months, not weeks, in many units.

  - ✓ Leadership Changes of Command are now programmed to occur in the window following completion of the DCS post-deployment tasks. At best this is difficult to synchronize within the 90 – 120 day window with all the dependencies involved. The consensus is the world must come to a hard stop for one week just to change commanders and key leaders.

- Army Culture – *Focus shifts to the Expeditionary Army. The informal contract with the Soldier is seen as threatened. The currency of leadership is forfeited. The Army Family is relegated to "…not matter"*

  - ✓ ARFORGEN reinforces the evolution of the Army toward a truly expeditionary force like the Marine Corps. Beyond the deployments to Iraq and Afghanistan, the future has BCTs deploying to Eastern Europe for 6 – 8 month stints. Like the Roman legions, Soldiers will spend more and more time away on the frontier than at home base. Expeditionary forces typically are agile, flexible, retain a small footprint and don't carry much baggage. This evolution will have far-reaching effects.

  - ✓ Executing the constrained personnel moves is complicated by the housing and transportation requirements to move Families in a compressed period of time. It is much harder and more expensive to move Families than it is for single Soldiers, which reinforces the view that the junior Soldiers will be unmarried or at least unaccompanied.

  - ✓ Two BCT Command Sergeant Majors and a former BCT Commander expressed concern that the currency of leadership, i.e., taking care of the Soldier and his Family, would be devalued. Further, they observed that the Army had intentionally created a smaller Army, and compensated for its smaller size by retaining a special breed of motivated, educated, highly competent Soldiers. Almost half of all Soldiers are married. In fact, significant treasure had been invested in Family well being and Family programs. The Army has ascribed to "If momma ain't happy; nobody's happy' and "We enlist Soldiers. We re-enlist Families." There is the potential for giving the impression that those values no longer apply.

  - ✓ When considering the way Families will have to be handled to make the shortened time frame – fewer options or choices, if any; short notification; mandated arrival or departure times; dealing with people in clumps rather than individually – one spouse likened it to "…being ridden out of town on a rail." Expectations will have to be managed very carefully.

4.3. Soldier Survey Findings

In order to gather information on the in- and out-processing experiences of Active Army Soldiers that have completed a PCS (Permanent Change of Station) in the past 12 months we deployed a web-based survey through an announcement on AKO. 639 Soldiers completed at least one section of the in-processing survey and 486 Soldiers completed at least one section of the out-processing survey. Survey responses were anonymous and authentication was not required to ensure high response rates. A break-out of the grades of the Soldiers that completed the surveys is found below in Figure 4-18.

Figure 4-18 – Grades of Soldier Survey Population. *Relative to the Active Army overall population, grades E1-E4 are underrepresented while the grade group CW01-O10 is slightly over-represented.*

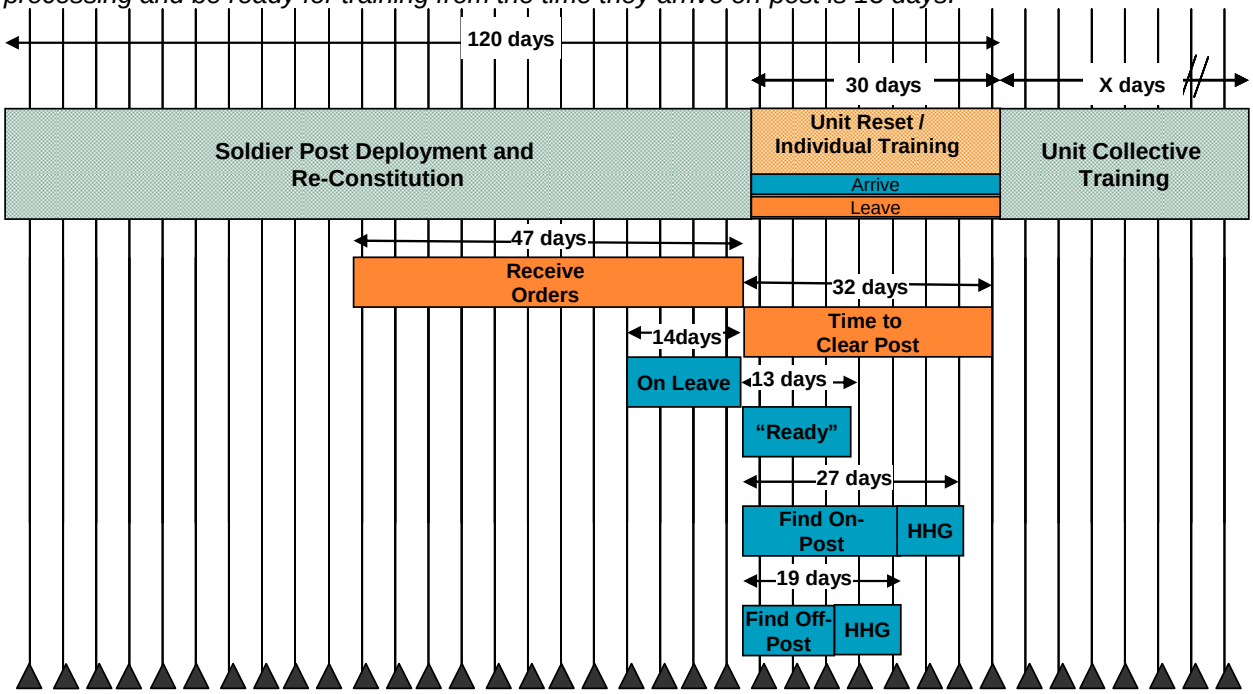
Rank Group	Rank	Out-Processing Responses	% of Overall Responses	In-Processing Responses	% of Overall Responses
E1-E4	E1	2	0.4%	6	0.9%
	E2	1	0.2%	18	2.8%
	E3	11	2.3%	49	7.7%
	E4	50	10.3%	80	12.5%
	Sub-Total	**64**	**13.2%**	**153**	**23.9%**
E5-E6	E5	76	15.6%	89	13.9%
	E6	96	19.8%	114	17.8%
	Sub-Total	**172**	**35.4%**	**203**	**31.8%**
E7-E9	E7	64	13.2%	82	12.8%
	E8	31	6.4%	30	4.7%
	E9	11	2.3%	8	1.3%
	Sub-Total	**106**	**21.8%**	**120**	**18.8%**
CW01-O10	CWO1	7	1.4%	8	1.3%
	CWO2	5	1.0%	5	0.8%
	CWO3	5	1.0%	2	0.3%
	CWO4	4	0.8%	5	0.8%
	CWO5	0	0.0%	1	0.2%
	O1	8	1.6%	26	4.1%
	O2	5	1.0%	10	1.6%
	O3	41	8.4%	49	7.7%
	O4	30	6.2%	37	5.8%
	O5	27	5.6%	14	2.2%
	O6	11	2.3%	6	0.9%
	O7	0	0.0%	0	0.0%
	O8	1	0.2%	0	0.0%
	O9	0	0.0%	0	0.0%
	O10	0	0.0%	0	0.0%
	Sub-Total (CW01-O10)	**144**	**29.6%**	**163**	**25.5%**
Grand Total		**486**	**100.0%**	**639**	**100.0%**

The purpose of the survey was to collect data on service / process times, lag times and idle times and probability estimates used in the reset feasibility model. These elements are described in more detail in Sections 6 and 7. In addition, survey data was used to approximate reset flow times to validate model outputs, identify bottlenecks in the process and capture Soldier ideas for improving the process. Key findings are described in the following section.

According to Soldiers who had gone through a PCS in the past year, the mean time to clear transportation, housing, CIF and other out-processing activities is 32 days from the time that they received their orders. The time to "check in and be ready for training" when in-processing to their gaining unit is 13 days. Solders indicated that they were "checked-in and ready to begin training" before they completed found housing and received their household goods. The mean time for Soldiers to find on-post housing is 19 days and the mean time to look for and find off-post housing is 11 days. Receiving and unpacking household goods takes an additional 8 days.

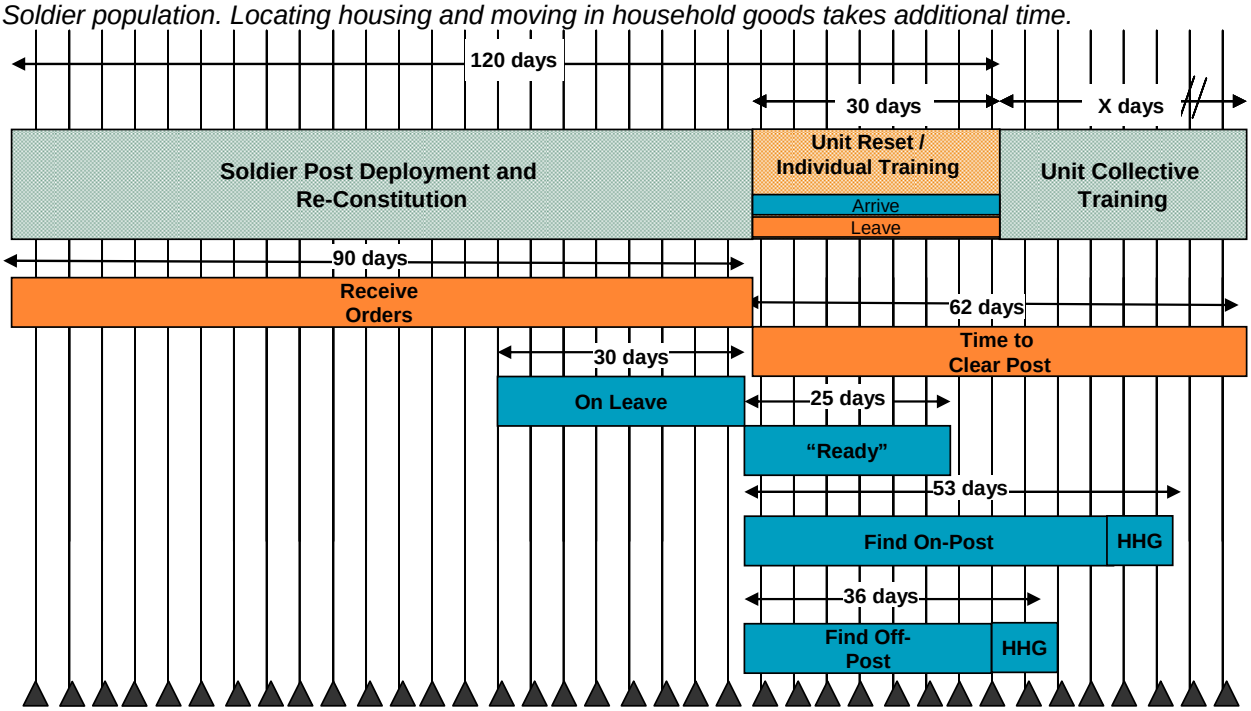
Average flow times are illustrated in Figure 4-19. Because they are based on historical Soldier experiences they are a function of current staffing and installation resources, installation in- and out-processing activity volumes and current practices and business processes. However, most current Unit Resets do not involve large draw downs. In addition, activity volume is effectively "smoothed" or "level-balanced" over a period longer than the 30 day reset envisioned under ARFORGEN due to delays in receiving orders and early departures. According to Soldiers surveyed, nearly 70% of Soldiers returning from deployment began their out-processing prior to the completion of the 90 day post-deployment and re-constitution period effectively pushing the start date in the timeline to the left and allowing for a more gradual reset period. It is therefore unclear whether the installations could achieve the mean flow times illustrated below if the period was condensed due to resource limitations.

Figure 4-19 – Average Soldier In- and Out-Processing Flow Times. *According to Soldiers, the mean time to complete out-processing once their orders are received is 32 days. The mean time to complete in-processing and be ready for training from the time they arrive on-post is 13 days.*



Approximately 75% of Soldiers experience delays during out-processing and 61% of Soldiers experience delays during in-processing. In both cases, the primary reasons for delays are paperwork issues (including late receipt of orders or problems with their orders), work interference and difficulty scheduling appointments. As a result, the flow time to out-process 85% of Soldiers is 62 days and the flow time to in-process 85% of Soldiers is 25 days. Finding housing and receiving and unpacking household goods pushes the schedule further to the right as illustrated in Figure 4-20 below.

Figure 4-20 – Flow Times to In- and Out-Process 85% of Soldiers. *It takes 62 days to out- process 85% of the surveyed Soldier population and a minimum of 25 days to in-process 85% of the surveyed Soldier population. Locating housing and moving in household goods takes additional time.*



Complete survey results are provided in Appendix A – Soldier Out-Processing Survey Data and Appendix B Soldier In-Processing Survey Data. Key highlights and findings are summarized in Figure 4-21.

Figure 4-21 – Key Survey Findings. *Complete survey results are provided in the appendixes.*

Finding	Reference(s)
• 63% of out-processing Soldiers and 60% of in-processing Soldiers relocate with one or more dependents • Approximately one in every six to seven Soldiers indicate that their dependents arrive at a later date. Dependents of grade E1-E4 Soldiers are nearly twice as likely to arrive at a later date than dependents of higher grade Soldiers	• Appendix A: Figure 6-1 • Appendix B: Figure 7-1
• 24% of out-processing Soldiers and 21% of in-processing Soldiers indicate that their most recent PCS relocation followed a deployment. However, only 12% of in-processing E1-E4 Soldiers indicate that their most recent PCS relocations followed a deployment	• Appendix A: Figure 6-2 • Appendix B: Figure 7-2
• On average, Soldiers returning from deployment receive their orders 47 days following their return from deployment. 85% of Soldiers receive their orders within 90 of their return • Cw01-O10 Soldiers are more likely to receive their order more than 90 days following their return from deployment • 8% of Soldiers including 16% of grade CW01-O10 Soldiers receive their orders prior to returning from deployment	• Appendix A: Figure 6-3
• 69% of Soldiers begin to make their appointments and arrangements for out-processing within the 90-day stabilization period. • The percentage of Soldiers that begin the clearing process does not vary significantly based on grade • 62% of Soldier complete their out-processing and clear post within the 90-day stabilization period following their return from deployment	• Appendix A: Figure 6-4 • Appendix A: Figure 6-5

Finding	Reference(s)
• On average, it takes Soldiers 32 days to complete out-processing once orders are received • 67% of Soldiers including 79% of grade E1-E4 Soldiers complete out-processing within 30 days of receiving their orders. 85% of Soldiers complete out-processing within 62 days of receiving their orders • 5% of Soldiers take more than 120 days to complete out-processing	• Appendix A: Figure 6-6
• Out-processing Soldiers prioritize transportation and CIF during the clearing process. In-processing Soldiers prioritize housing and finance	• Appendix A: Figure 6-7 • Appendix B: Figure 7-12
• Few Soldiers utilize e-MILPO for in- and out-processing. E-MILPO is primarily used for personnel records • "One-Stop" activities vary significantly by installation. The most common organization represented at "One-Stop" is finance. Approximately 90% of Soldiers clear medical and dental by visiting those offices at locations other than at "One Stop"	• Appendix A: Figure 6-8 • Appendix B: Figure 7-13
• 24% of out-processing Soldiers indicate that their spouse was either primarily responsible or "equally responsible" for the implementation of activities necessary for the move out. This proportion is significantly higher during in-processing	• Appendix A: Figure 6-9 • Appendix B: Figure 7-5
• 77% of out-processing Soldiers and 61% of in-processing Soldiers experience delays during the PCS process • The three most typical causes for delay are: (1) paperwork issues (including late receipt or problems with order); (2) work interference; and (3) difficulty scheduling appointments • Of the 77% of out-processing Soldiers that experience delays, approximately 10% are delayed due to children's school calendars	• Appendix A: Figure 6-10 • Appendix A: Figure 6-11 • Appendix B: Figure 7-6 • Appendix B: Figure 7-7
• On average it takes Soldiers 24 days to complete the entire transportation-out process and get household goods in transit. The first meeting with the transportation office to complete the preliminary inventory inspection typically takes 8 days to schedule	• Appendix A: Figure 6-12 • Appendix A: Figure 6-13
• The percentage of Soldiers that live off-post varies significantly by the grade of the Soldier. Not surprisingly, officers are much more likely to live off-post while lower graded enlisted Soldiers are much more likely to live on post in barracks or BOQ, BEQ housing	• Appendix A: Figure 6-14
• Out-processing Soldiers take 15 days on average to clear housing • Approximately 32% of out-processing Soldiers clear housing within one week of making contact with the office while 25% of Soldiers take more than 30 days to complete this same process • It typically takes 11 days to schedule the initial inspection of quarters • 92% of Soldiers pass housing inspection on the first attempt	• Appendix A: Figure 6-15 • Appendix A: Figure 6-16 • Appendix A: Figure 6-17
• Approximately 58% of Soldiers clean their own on-post housing while 32% contract out to a cleaning team. The percentage of Soldiers that clean their housing units themselves does not vary significantly by grade – 56% of officers as compared to 61% of grades E1-E4 • On average it takes Soldiers 3 days to clean their quarters after their household goods have been picked up. It also takes approximately three days to: (1) complete all necessary self-help; (2) complete sweep out cleaning prior to final inspection; and (3) conduct interviews and select a contract cleaning team if they contract-out	• Appendix A: Figure 6-18 • Appendix A: Figure 6-19 • Appendix A: Figure 6-20 • Appendix A: Figure 6-21 • Appendix A: Figure 6-22
• On average, Soldiers stay in temporary lodging for 6 days during the PCS out-process	• Appendix A: Figure 6-23

Finding	Reference(s)
• Soldiers take 2 days to clean their equipment before their first attempt to clear CIF. The percentage of Soldiers that take one day or less does not vary significantly by grade • The wait line at CIF is approximately one hour • On average it takes 1.4 attempts to clear CIF during the PCS-out process. 60% of Soldiers clear CIF on the first attempt • Soldiers who fail CIF take approximately 1.5 days to re-clean, replace to complete a Survey of Report • Overall, it takes approximately 3 days for Soldiers to clear CIF	• Appendix A: Figure 6-24 • Appendix A: Figure 6-25 • Appendix A: Figure 6-26 • Appendix A: Figure 6-27 • Appendix A: Figure 6-28
• On average it takes Soldiers slightly more than 4 days to clear the other out-processing activities	• Appendix A: Figure 6-29
• Soldiers typically take 2 weeks of leave during their transit to their new duty station. Approximately 21% take more than 30 days	• Appendix B: Figure 7-3
• 38% of Soldiers take permissive TDY during relocations • 12% of Soldiers completed military education as TDY en route	• Appendix B: Figure 7-4
• On average it takes Soldiers 13 days to complete in-processing and be ready for training once they arrive at their gaining installation. 10% of Soldiers take more than 30 days to be ready while 50% of Soldiers take fewer than 7 days to complete in-processing and be ready	• Appendix B: Figure 7-8
• 50% of Soldiers arrive at their gaining installation after their unit has begun training together	• Appendix B: Figure 7-9
• 27% of the Soldiers that completed a PCS move within the past year have already re-deployed. 53% of Soldiers that have re-deployed reported-in to their new unit within 4 months of re-deployment, including 12% who were in their new unit fewer than 30 days	• Appendix B: Figure 7-10 • Appendix B: Figure 7-11
• In-processing Soldiers take 7 days on average to clear all other activities after clearing “one-stop”	• Appendix B: Figure 7-14
• After being informed of the on-post housing situation, 58% of Soldiers including 71% of grade CW01-O10 Soldiers decide to live off-post. Approximately 19% of Soldiers “have to live on post” because of being key and essential personnel or other reasons • 64% of Soldiers stay in temporary housing while waiting for on-post housing to become available including 26% of Soldiers who stay without household goods delivery • 85% of Soldiers accept on-post housing once it is offered	• Appendix B: Figure 7-15 • Appendix B: Figure 7-17 • Appendix B: Figure 7-18
• The typical wait for on-post housing is 19 days. However, 20% of Soldiers take 30 days or more before they are offered housing • On average, Soldiers need 10 days to find off post housing • On average, Soldiers spend 11 days in temporary lodging	• Appendix B: Figure 7-16 • Appendix B: Figure 7-19 • Appendix B: Figure 7-20
• 6% of Soldiers do a DITY move. Household goods arrive and are put in temporary storage before Soldiers arrive 39% of the time • From the time they arrive at their gaining installation it takes 11 days to get a scheduled delivery date, 4 more days to complete delivery and unload household goods, 4 more days to unpack and 4 more days to complete final inspection and file claim with transportation	• Appendix B: Figure 7-21 • Appendix B: Figure 7-22 • Appendix B: Figure 7-23 • Appendix B: Figure 7-24 • Appendix B: Figure 7-25
• 37% of Soldiers in-process CIF as a walk-in • On average, it takes slightly more than 1 day to in-process CIF	• Appendix B: Figure 7-26 • Appendix B: Figure 7-27
• On average it takes 5 days to in-process the other organizations (i.e. ACS, MWR, etc.)	• Appendix B: Figure 7-28

5. Recommendations

5.1. Recommendations Overview

The commander of TRADOC, General William S. Wallace, recently wrote that, "ARFORGEN has the potential to touch and change every aspect of the Army." The Army at large has a monumental task ahead to make ARFORGEN work. According to our reset simulation model, none of the installations studied are capable of achieving large unit draw downs and resets typical of ARFORGEN within a 30 day window under current resource limitations and business processes. This concern was echoed by installation staff during site visits to five installations and is supported by the experiences of Soldiers who responded to a web-based survey.

The impact of not achieving timelines is magnified by the current OPTEMPO. The original ARFORGEN concept was based on a 36-month unit lifecycle. The unit would train for 24 months (dwell time) and deploy for 12 months. In today's environment with dwell time typically less than 12 months and deployment time increased to 15 months the risk of not achieving guidelines is clear – the amount of collective training and with it the ability of a unit to be certified for combat and achieve cohesiveness will be compromised as illustrated in Figure 5-1.

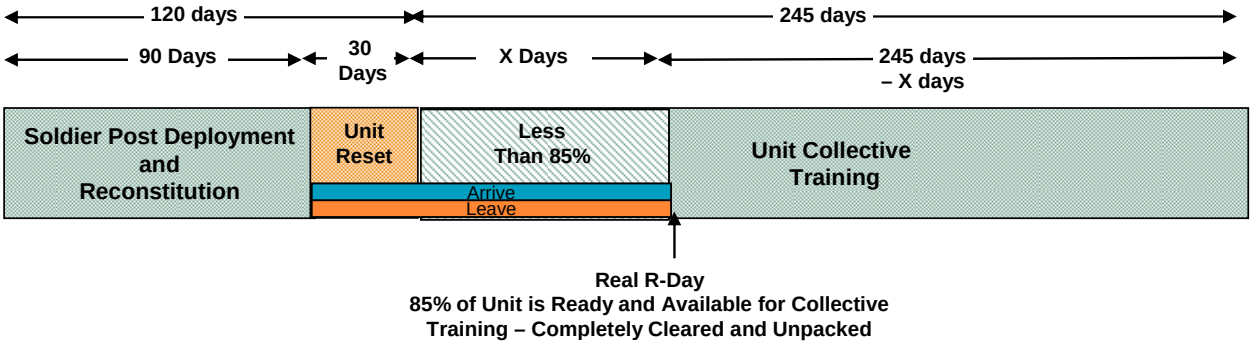


Figure 5-1 – Impact of Not Achieving 30-Day Guideline. *In today's environment, dwell time is decreasing while deployment time is increasing. Assuming that the 90-day post-deployment and re-constitution phase is observed, in- and out-processing delays directly reduce collective training.*

Based on our findings in Section 4 of this study, we have outlined several recommendations to explore. Our recommendations are categorized into three main categories directly relevant to the feasibility and capability of installations to meet ARFORGEN guidelines – resource recommendations, policy recommendations and process recommendations. The recommendations are not necessarily exclusive. For example, the Army may decide to both increase resources and adjust the R-day.

5.2. Resource Recommendations

According to the model, installation resource constraints – including the number of personnel, number of hours worked, temporary lodging, permanent lodging, movers and storage facilities – make it unlikely and perhaps impossible for installations to meet ARFORGEN guidelines and provide units with Soldiers to begin collective training in a 30-day window. This is validated by installation staff during site visits and Army planners who are witnessing a drop in the ability of units to meet Mission Readiness Exercise (MRE) requirements. The implementation of ARFORGEN is likely to impact installations like an oncoming wave – significant draw down of a unit in concurrence with the building up of that same in a condensed time frame – placing significant burden on installation staff and community resources. Recommendations to mitigate this challenge include:

- Increase Staffing – The typical installation support staff is manned by a Table of Distribution and Allowance (TDA) designed to accommodate the orderly flow of Soldiers and their Families in and out of the installation throughout the year, with small spikes at the beginning and end of the summer. The TDA has not changed since implementation of ARFORGEN and should be updated to reflect ARFORGEN model requirements. Current resources and requirements vary significantly by installation and need to be addressed on an installation-by-installation basis.

- Expand and Improve Partnerships with Community Resource Providers – Many of the resources that impact flow times are not controlled by the installation. Every installation must rely to varying degrees on the communities surrounding the post. Temporary lodging, movers, storage facilities and others must be utilized to move Soldiers and Families. Installations should actively seek cooperative agreements with certain sectors of private business in the community and share information on surges to help plan for in- and out-flows.

- Increase Resource Availability – Soldiers indicate that in- and out-processing is typically slowed due to: (1) work interference, (2) training interference and (3) difficulty scheduling appointments. Soldiers "manage" their own relocation and typically attempt to get their "boxes checked" after the end of their own workday or during breaks. However, installation resources typically follow the same schedule and may not be available for the Soldier at these times. Rotate shifts during administrative times, breaks and lunch so that customers are served at all times increasing the overall customer capacity.

- Increase Surge Capability Staff – Efforts to support surges during times of increased customer flow should be first sought from other organizations within the installation. This could include the use of contract support from the CONUS Support Base Services (CSBS) contract but should also include government civilians from other offices. The capability to require employees to work nontraditional hours and the breadth of the "other duties as assigned" clause should be explored. This could allow the shifting of employees as they are needed across post but also the capability to run the facilities at hours when Soldiers are not normally on duty as described above.

- Develop and Implement Surge Plans – With the planned nature of ARFORGEN, the Installation Management Command (IMCOM) should look at the ability to focus the resources, including employees, funding and temporary infrastructure, for both a period of time during the end of the unit lifecycle and beginning of the next. The surge capability could be looked at in terms of concentric circles from the installation outward to the region and then beyond to the rest of the Army. The plans for supporting the unit lifecycle transition and deployment of the units should include the plan from the IMCOM and garrison side of how other installations and personnel will be needed to assist and where they will be coming from.

- Connect Civilians to Mission – The Army has made an effort over the past several years to incorporate the government civilian into the sense of mission. This effort should be revitalized for the current wartime footing as a reminder of the importance of their task and direct involvement in meeting the mission but also a reminder of service to the Soldier as a valued customer. The comfortable isolation that many installation entities have ensconced themselves in may need a reminder that this customer is more important than the need to close for lunch daily. A consolidated team effort is required to enable ARFORGEN to work.

- Increase Resource Flexibility – In interviews, most installations reported a lack of flexibility in options available to them through contract workforce or a surge of government employees. Contracts were limited in breadth and scope but when available were very beneficial. The scope must be increased to incorporate nontraditional work hours. The government workforce requires funding approvals to pay overtime. Employing a temporary workforce is not usually agreeable and deemed a bad long-term investment, especially at larger installations that have no ebb and flow of work but a continuous gush. Both government and contract employees must be trained in a variety of tasks; growing more generalists and decreasing the number of specialists.

- Program the Dedication of Resources – In the programming of resources, it must be taken into account that installations service more than just the Soldiers and Families assigned there. They also serve a surrounding area of operation that includes the retiree population, Recruiting Command, any satellite posts and Reserve Component Soldiers and their Family Members. It must be determined which organizations are most often stressed by this wider area of responsibility and at what times of the year. Further, personnel that perform key ARFORGEN reset activities are also often involved in other actions such as mobilization and de-mobilization. The impact of this high demand for the same resource should be considered when developing ARFORGEN conference timelines and schedules.

- Focus Resources Regionally – Installations must matrix resources across regions and beyond when needed. Larger installations that house many BCTs may many not have the capability to matrix their resources due to the consistently high OPTEMPO. However, small- and medium-sized installations that have an ebb and flow can practice resource sharing with each other and with the larger installations. Interviews with other organizations that respond to surges reinforce this need. For example, the FBI critical response program provides additional resources to respond to large scale events. These responders are housed in FBI field offices throughout the country. When needed they are “activated” to respond to a need at another field office.

5.3. Policy Recommendations

Based on current resources and processes, installations are not capable of meeting ARFORGEN guidelines. The risk of not meeting ARFORGEN is significant and ultimately impacts the ability of the Army to produce properly trained and cohesive units. Increasing resources to meet this challenge is discussed above. The complementary recommendation is to increase R-day and all ARFORGEN timelines to accommodate observed resource limitations. These options are discussed below:

- Push Back R-Day Depending on the Size of the Reset and the Size of the Post – The simulations of Unit Reset at Hood, Bragg, Campbell, and Jackson show that the criterion of 85% of the unit’s personnel fully in-processed is not attained within the 120-day objective if the first 90 days are protected. Assuming a 70% Unit Reset of a 7,000 Soldier unit, Hood and Bragg achieve R-date at day 168, Campbell at day 238 and Jackson at day 417 under modeling assumptions and resources. Smaller posts are less likely to achieve guidelines due to lower resource levels. Not surprisingly, the size of the Unit Reset also impacts feasibility as illustrated in Figure 4-1. Army planners should consider these two factors when developing timelines. Schedules should also consider other resource draws that could take place at the same time (e.g. de-mobilization) as the model assumes that the resources are completely focused on the reset.

- Develop More Support for Fluid ARFORGEN Timelines – The original assumption of ARFORGEN was that all units would end their lifecycle following the return from deployment at 36 months. The current deployment lengths and continued transformation have created a 30 month ARFORGEN cycle that does not automatically dictate the end of a unit lifecycle upon each return. This decision is at the discretion of command and creates a less predictable environment. Continual changes in the cycle timeline require adjustments and flexibility of the supporting installations. An extension of the ARFORGEN timeline for post deployment, reconstitution and transitioning will lessen the concentrated impact on the installation infrastructure and on Soldiers and Families. This would give the installation much needed processing time and Soldiers additional time to PCS and settle in. However, any time added to the transition timeline must also be added to the training time; lengthening the entire cycle time. Consideration must be given to the amount of training time a unit receives following more than a 70% changeover of personnel and prior to deploying to war together. The additional time needed will also depend on the installation support and the resources they are able to utilize and surge when necessary. Units that do not end their lifecycle following deployment will not require additional time.

- Protect the 90-Day Re-Constitution Period Following Return from Deployment – It is imperative that the first 90 days following a unit's return from deployment are protected to meet the Deployment Cycle Support (DCS) requirements in place specifically to monitor and assist in the well-being of Soldiers and Families. The 90 day stabilization period of Post Deployment in the Deployment Cycle Support requirements must be respected as an important time for the Soldier to reintegrate back into society and home. Respondents to our Soldier survey indicated that about 70% of Soldiers are using at least some of that time to begin their out-processing arrangements and over 60% of the unit is already gone at day 91. Recent reports conducted by the Army indicate an incidence of combat stress and Post-Traumatic Stress Disorder (PTSD) in about 1 in 8 Soldiers. The first symptoms of these difficulties usually do not surface until approximately 90 days after return from deployment. Tampering with this important time of reintegration carries with it a great risk.

- Develop Alternative PCS Solutions for Families – The Army Campaign Plan states that the Army will become a more, "joint CONUS-based expeditionary Army." The definition of expedition is, "an excursion, journey or voyage for some specific purpose." The focus is on an Army that deploys for a purpose and then returns to prepare to repeat the cycle again. For the Families of Soldiers, the implementation of ARFORGEN will mean a disregard for their needs concerning their education and that of their children, employment and stability. Families with school-aged children are more likely to choose not to move during the school year, especially older children. Alternative solutions must be created that would enable Families to minimize disruption and potential adverse consequences to finances, profession, and well-being. Possible alternative solutions are complicated by the need to be together as a Family following a return from deployment. Is the Army still striving to reenlist Families? Family members are often serving as conscripted helpers to enable Soldiers to remain at work during out-processing and to more quickly participate in training during in-processing. Over 30% of Soldiers surveyed credited an equal distribution of the move in with their spouses. Ten percent credited their spouses for handling the majority of the move in activities.

5.4. Process Recommendations

There is a great need to improve processes and increase efficiency. According to Soldiers and installation staff Soldiers encounter a number of errors during the relocation / PCS process that impact flow times and throughput. A full BPR and Lean/Six Sigma review of ARFORGEN related processes would improve the efficiency and therefore the capability of installations to achieve ARFORGEN guidelines. Some potential "quick hits" for improving processes follow:

- Standardize IMCOM and Installation Policies and Procedures – On installations, garrisons must look at standardizing policies and procedures, teaming with other installations across states and regions, and building bridges of cooperation to join the installation "islands". From these standards, metrics must be developed, reported and tracked for continuous process improvement and trend analysis. Consistency of procedures for in- and out-processing across all installations would create an environment more conducive to inter-installation cooperation, greater efficiency for Soldiers and Families and better management of expectations.

- Change the In- and Out-Processing Focus from the Individual to the Unit – Each organization involved in the in- and out-processing process must revise its business processes to reflect a new focus. With ARFORGEN the focus must switch to being unit-centric. To support the units in becoming 85% manned and ready for training by R-day (Day 121 in the original ARFORGEN cycle) installation organizations must be able to prioritize activities to focus primarily on Soldiers departing and arriving at the BCT in cycle, become proactive support to the Soldier versus reactive, and develop metrics to be used for continuous improvement. Giving more focus on the unit as a whole and less on individuals as they "pull" service provides better management of expectations for the installation, command, Soldiers and Families.

- Revitalize and Leverage Systems Already in Place – Many installations have a "One Stop" in- and out-processing center in place. However, most are not truly "one" stop but house satellites of only a few offices necessary to in- or out-process. This necessitates multiple trips to other sites on post and working around admin hours, the unavailability of the specific person authorized to sign-off on clearing papers, and interference from work. Centralizing all offices that are involved with in- and out-processing in their fully-functioning capacity would reduce redundancy and increase efficiency of actions. The e-milpo system, intended to reduce the amount of in- and out-processing required, is not being used. According to our Soldier survey, 90% indicate not utilizing e-milpo for any part of in-processing and 97% do not utilize e-milpo for out-processing. The lack of use should be studied and steps taken to increase the understanding and ability to utilize this and other electronic/virtual tools. Use of this system should allow better accountability for all installation organizations, improved tracking of activity for the unit and greater efficiency for Soldiers. Used in concert with a true "One Stop" processing center would greatly increase efficiency, reduce time and resources needed, promote inter-agency cooperation and provide convenience for the Soldier and Family.

- Operate in Proactive Versus Reactive Mode – To enable processing to run efficiently and develop a steady-state in the midst of seeming chaos prior preparation must occur. Soldiers must receive their orders in a timely fashion to allow them as much time as possible to make clearing and in-processing arrangements. Installations and units must be informed who is being assigned there and when in order to prepare adequate resources to handle the surge. As much as can be accomplished and prepared ahead of the Soldier's departure from the losing installation and/or arrival at the gaining installation should be done to minimize the concentrated impact on the garrison.

- Assess Army Installation Support for Joint Applicability – The U.S. military is moving towards a much more synchronized existence as a joint enterprise working together and closing the gaps between services. Future military installations will house multiple services within its ranks; not just Soldiers and their Families. To this end, current Army installation systems need to be reviewed for future applicability to widespread use in a joint environment. Some current systems such as DFAS (Defense Finance and Accounting Service), human resources, logistics and transportation are already in use as Department of Defense systems, not just as service-specific entities. What began as the Army's online community, AKO (Army Knowledge Online), has now become DKO (Defense Knowledge Online) ready to bring all military communities together in the virtual environment. In the not-so-distant future all military services will in- and out-process service members the same way, using the same systems. Planning for the implementation of ARFORGEN presents a great opportunity to thoroughly examine the processes and systems in use by installations for in- and out-processing operations, and look at how these systems are/are not integrated with the other services. If they are not, how they could be and how Army system best practices could be applied to the other services.

- Improve Customer Service to Soldiers – Many Soldiers commented that they received inadequate customer support from installation staff during the PCS process. In many cases, Soldiers complained of misinterpreted policies, paperwork issues and unavailable or disinterested resources. Representative quotes follow:

  - ✓ *"The personnel had bad attitudes… they were there for the check not to ensure we were taken care of. The workers here could care less for you as a Soldier and even less for your family and it is so clear that the PCS here was about numbers and not the Soldiers' well-being or the family "In-processing was [done] on their schedule and not what was at your best interest or your family's interest."*

  - ✓ *"Get people in there that know what they are talking about and know how to talk to people with respect."*

  - ✓ *"Delays were caused by civilian employees leaving their assigned place of work to "take breaks" not to return for 45 min to an hour."*

  - ✓ *"In-processing was not well organized. Offices were closed several days of the week."*

  - ✓ *"I was given incorrect information which caused me to receive a reimbursement that was much less than my cost of temporary lodging. The finance office assumed that I would know where to stay for temporary lodging. How can I know unless someone tells me during in-processing???"*

  - ✓ *"Streamline it and get rid of useless BS. Ensure that housing options are clearly set forth. Currently units do not plan for the arrival of inbound Soldiers - instead they just show up at a Welcome Center and THEN the unit responds. Be proactive. Soldiers should be expected and welcomed. It should be possible to arrange housing within 30 days of arrival of a new post PRIOR to signing in."*

6. Appendix A – Soldier Out-Processing Survey Data

Figure 6-1 - Out-Processing Survey Question / Comment 3: "*I relocated with one or more dependent Family Members.*"

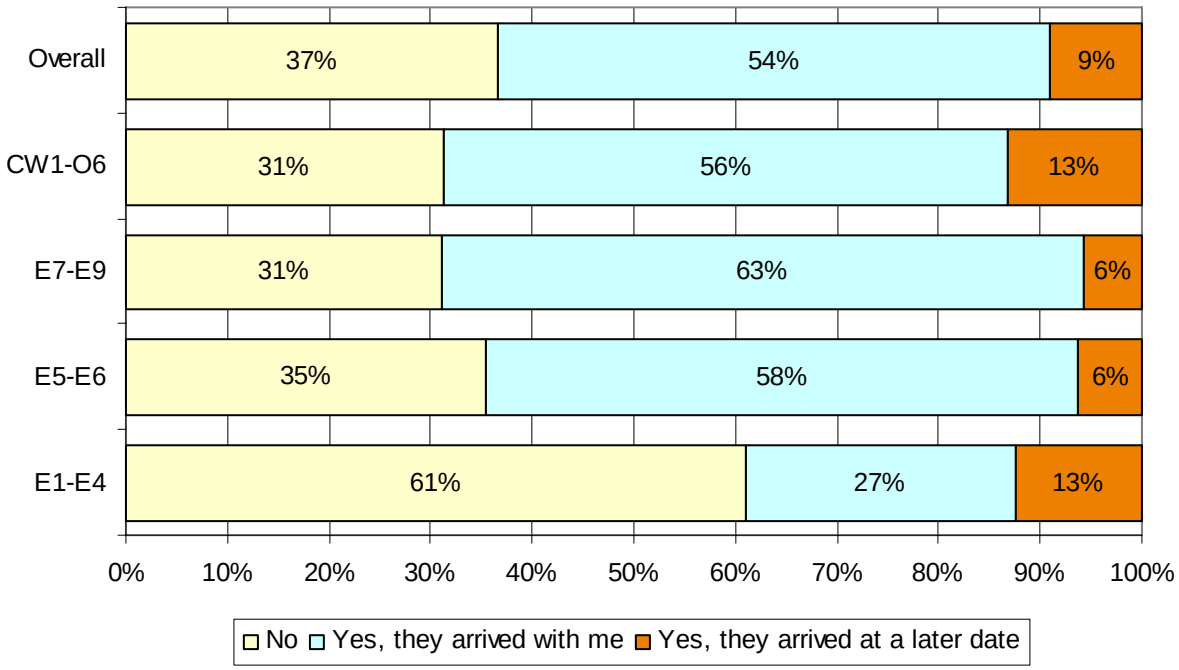


Figure 6-2 - Out-Processing Survey Question / Comment 4: *"My most recent PCS occurred immediately following a return from deployment*."

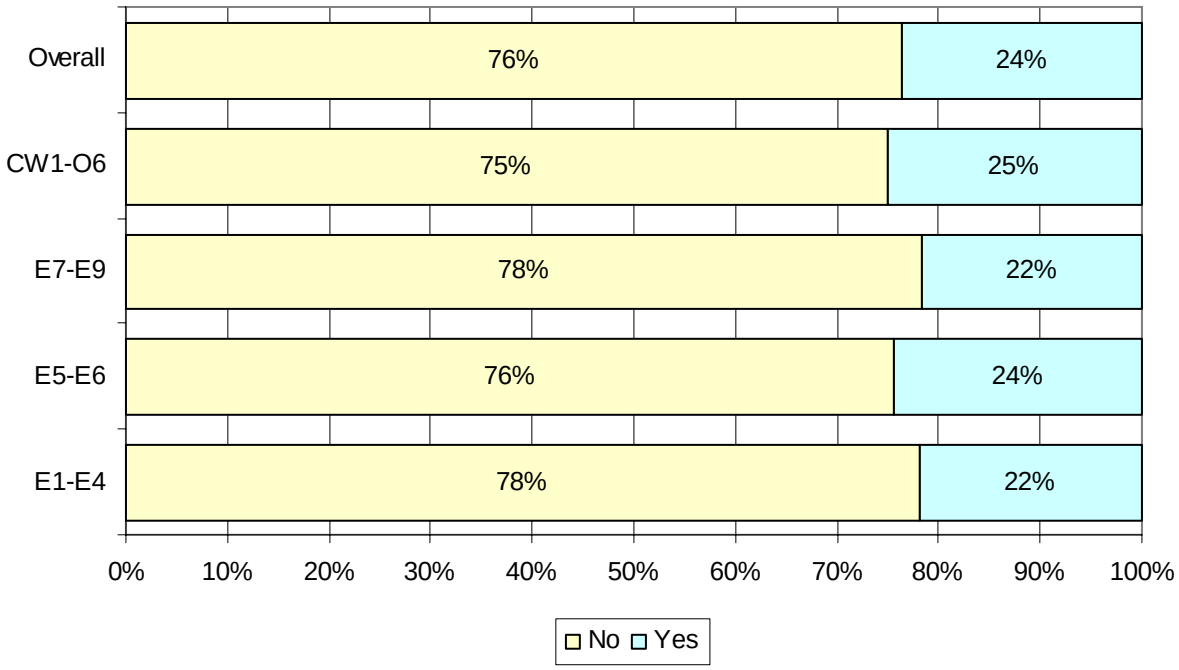


Figure 6-3 - Out-Processing Survey Question / Comment 5: *"How many days following your return from deployment did it take to receive your orders?" (Average 47.1 days following return from deployment)*

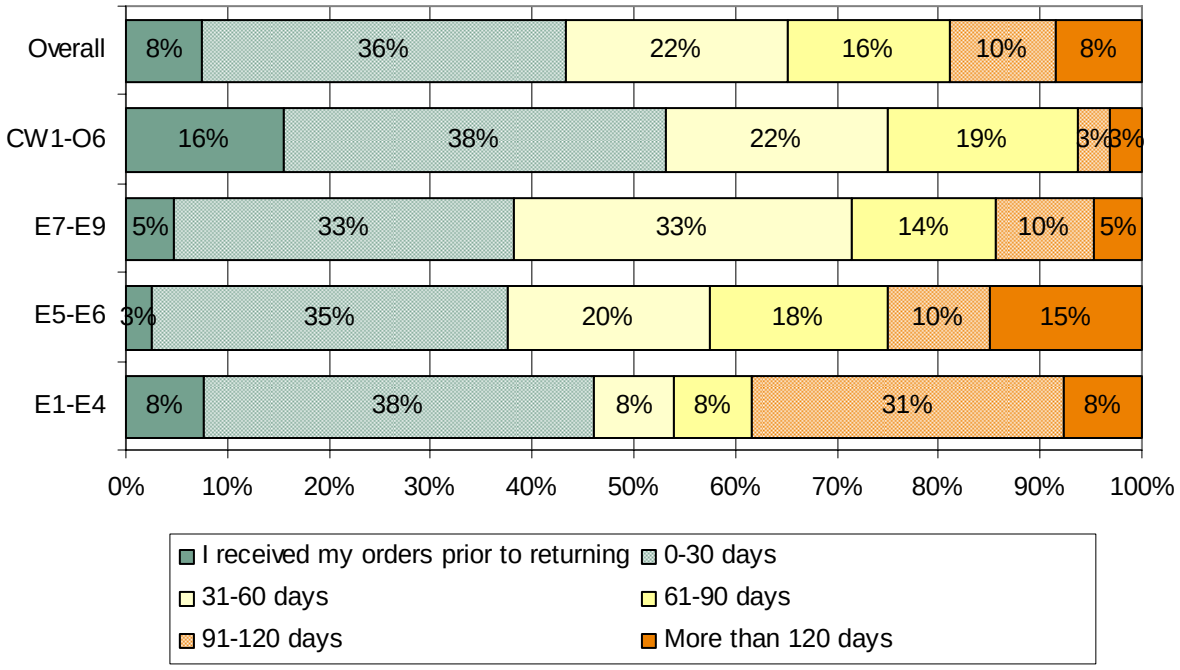


Figure 6-4 - Out-Processing Survey Question / Comment 6: *"Did you begin making your out-processing appointments and arrangements within the 90-day stabilization period following return from deployment?"*

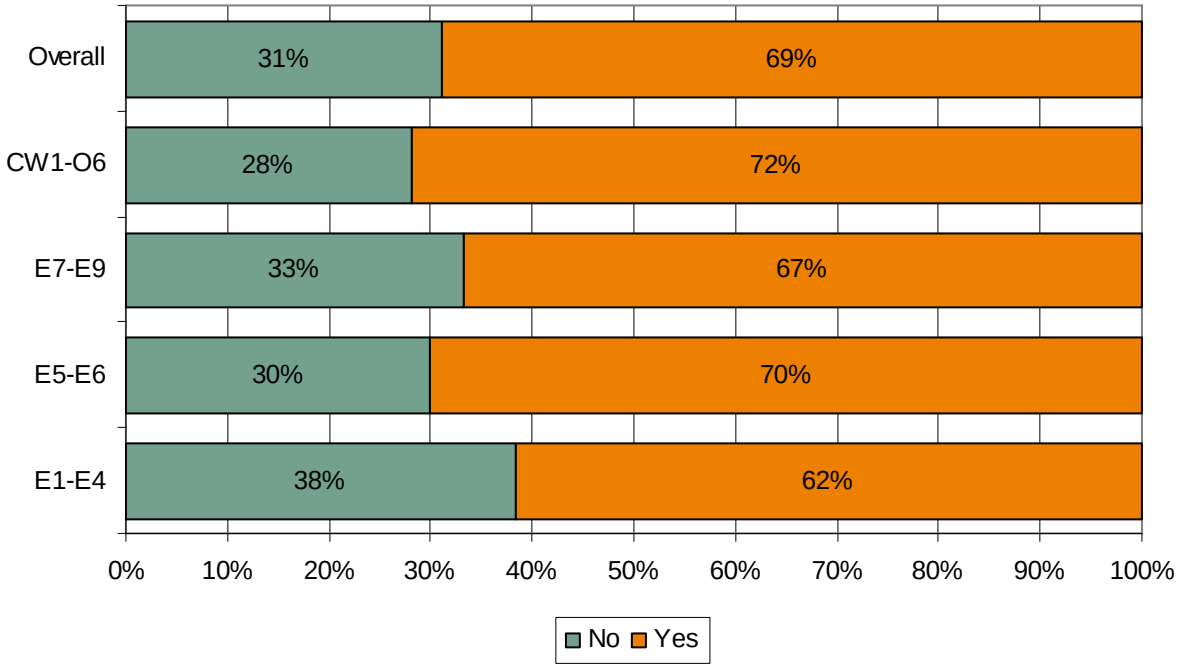


Figure 6-5 - Out-Processing Survey Question / Comment 7: *"Approximately how many days after your return did you complete your out-processing, clear post and depart?" (Average 71.8 days)*

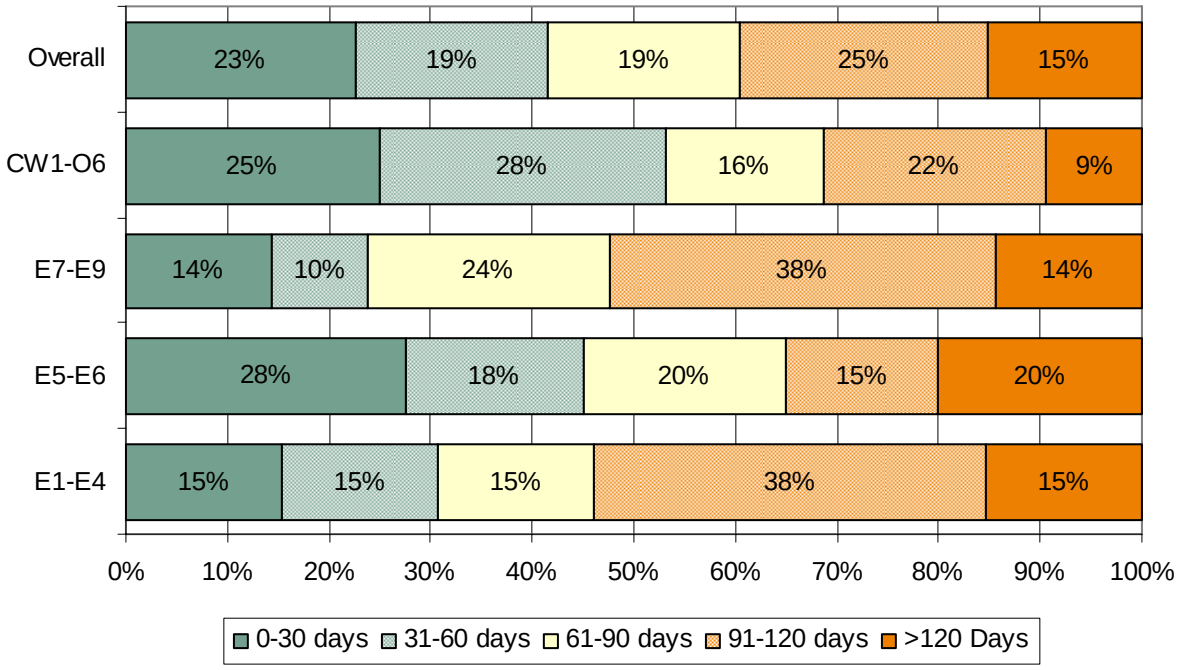


Figure 6-6 - Out-Processing Survey Question / Comment 8: *"Once you received your orders, how long did it take you to complete out-processing, clear post and depart?" (Average 31.3 days)*

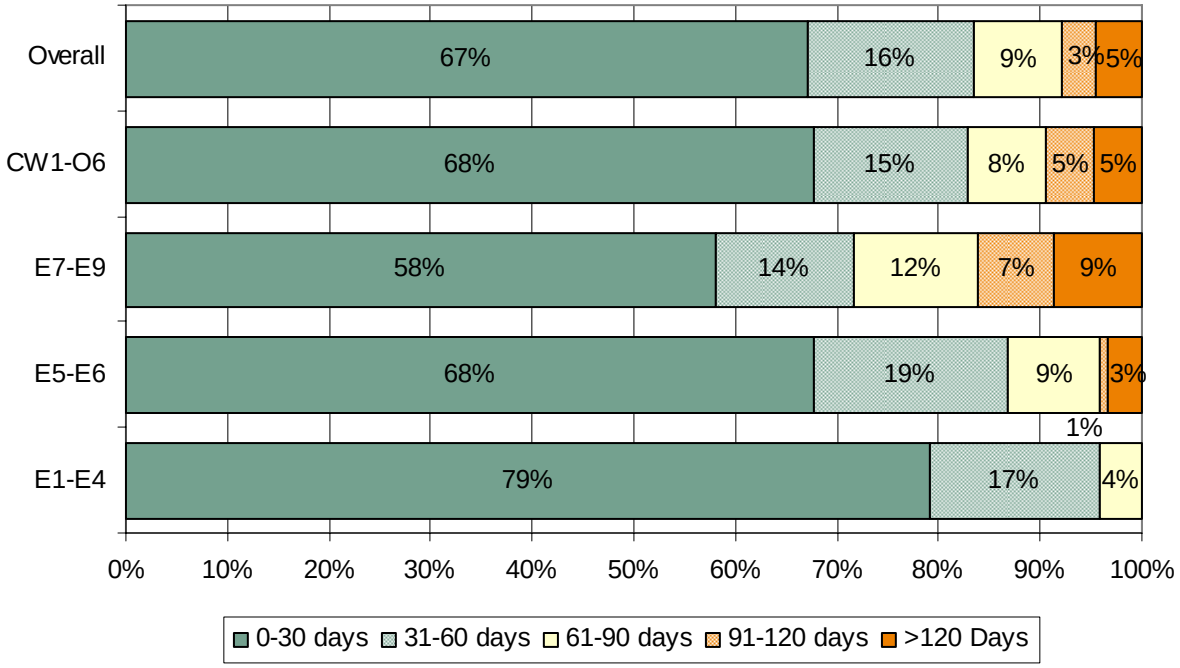


Figure 6-7 - Out-Processing Survey Question / Comment 9: *"In what order did you prioritize the following out-processing activities for clearing?*

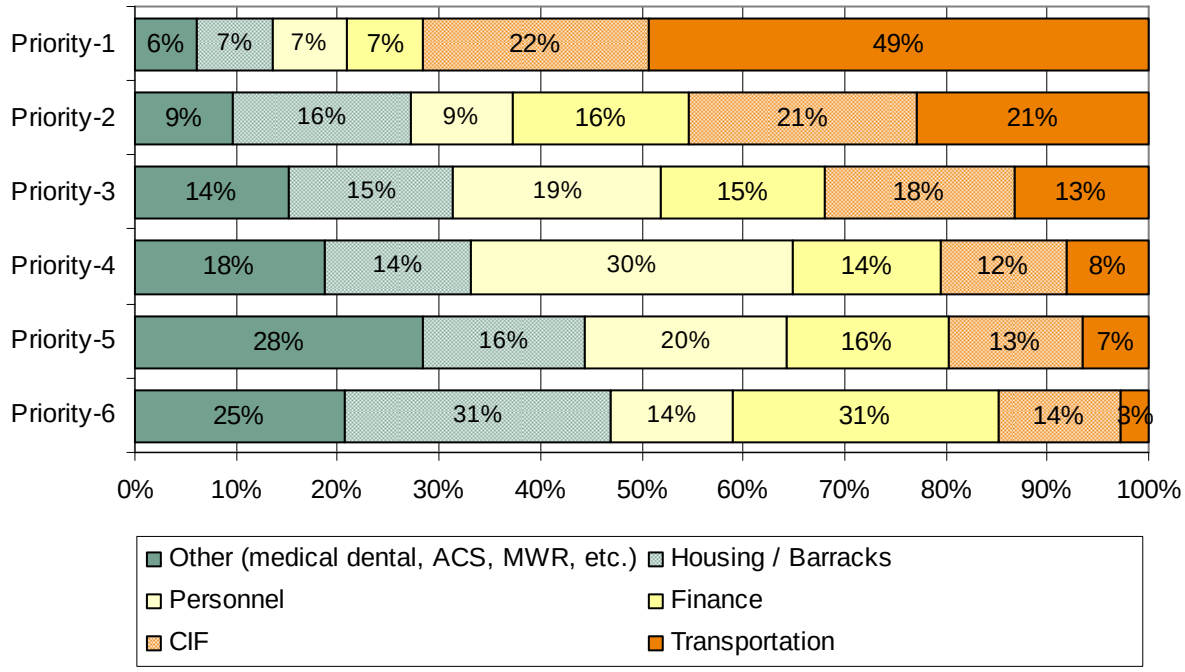


Figure 6-8 - Out-Processing Survey Questions / Comments 10 and 26: *"The following organizations were cleared [using which of the following three methods or processes.]"*

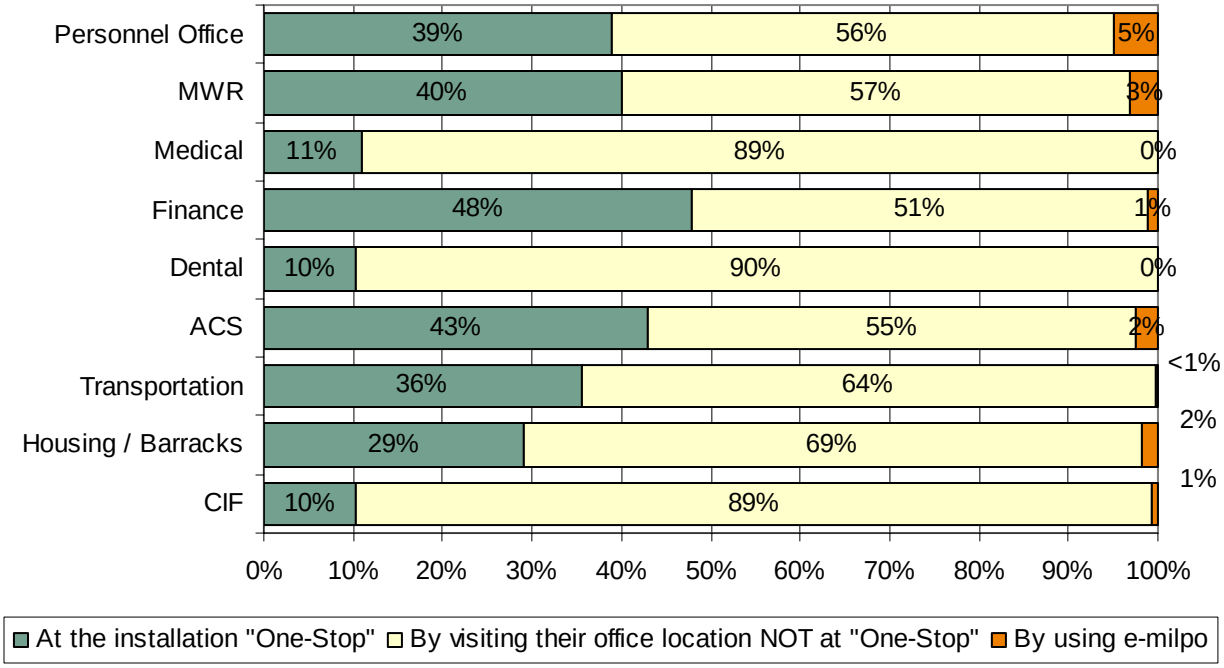


Figure 6-9 - Out-Processing Survey Question / Comment 11: *"Who was primarily responsible for the implementation of the activities necessary for your move out?"*

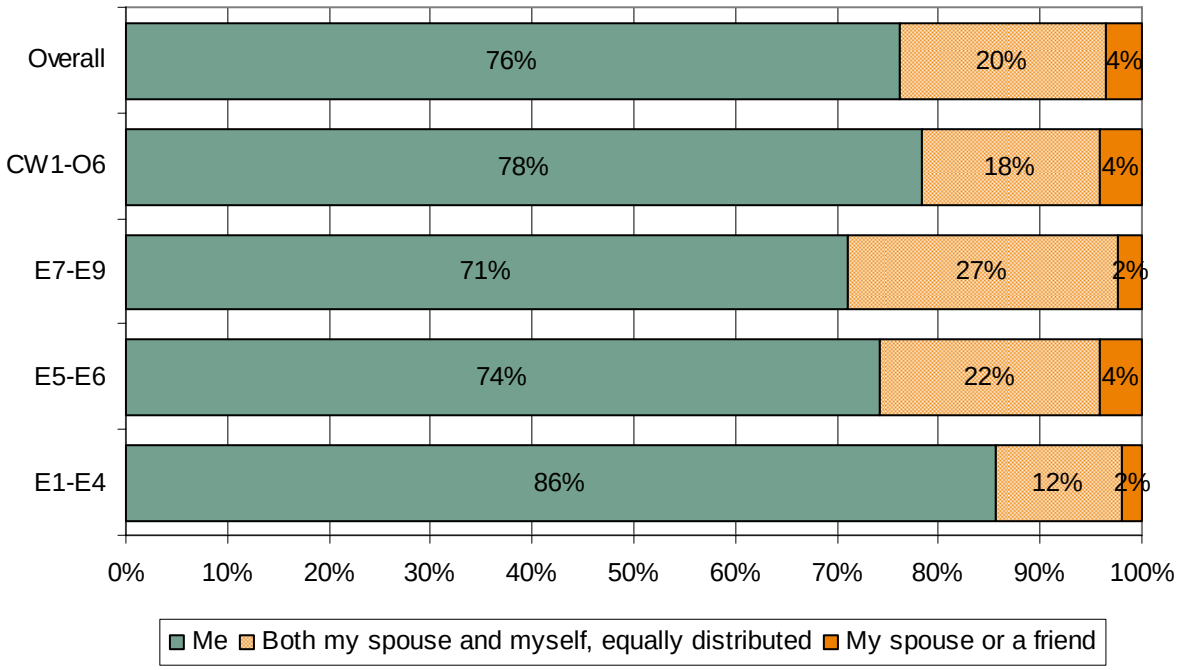


Figure 6-10 - Out-Processing Survey Question / Comment 12: *"Please indicate which of the following issues caused you to experience out-processing delays [comparison of Soldiers indicating at least one problem vs. Soldiers indicating "none of the above"]).*"

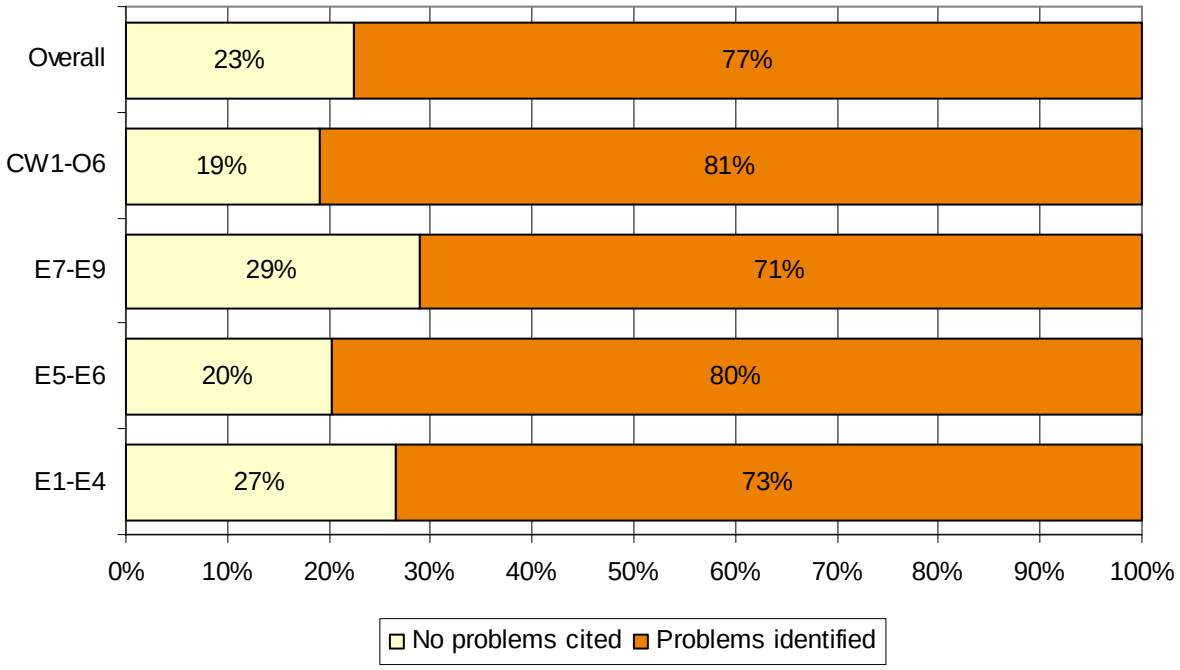


Figure 6-11 - Out-Processing Survey Question / Comment 12: *"Please indicate which of the following issues caused you to experience out-processing delays [based on Soldiers who indicated that they encountered at least one delay]."*

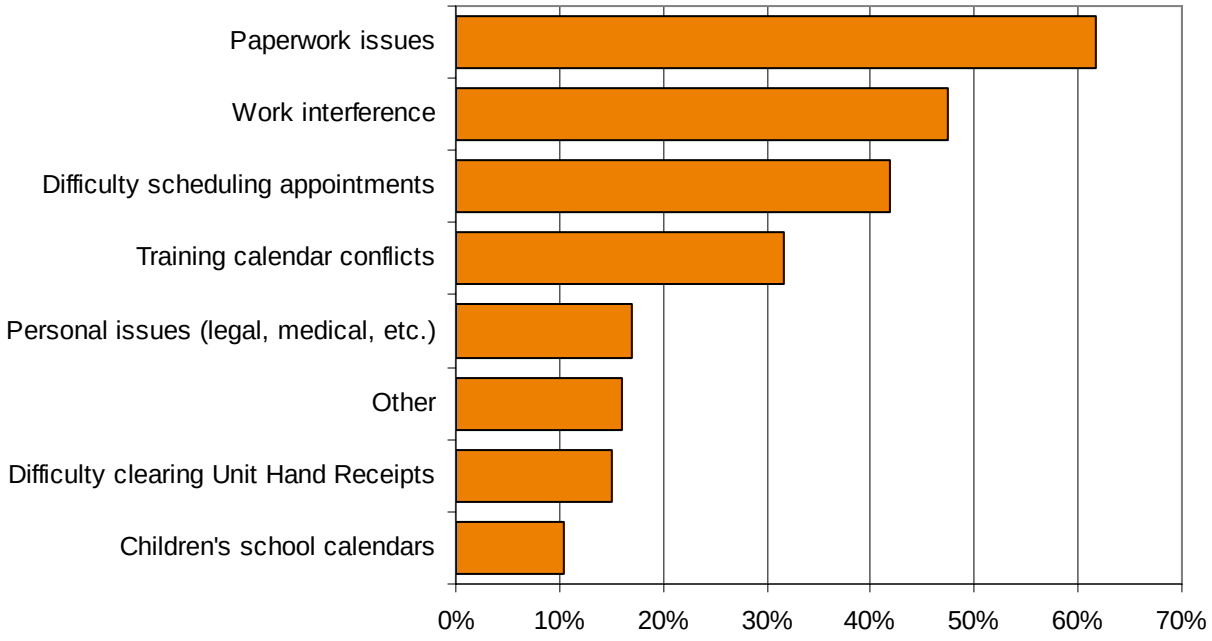


Figure 6-12 - Out-Processing Survey Question / Comment 13A: *"From the time you made initial contact with the transportation office to begin the PCS process, how long did it take to complete the entire transportation process and get household goods in transit? (Average 23.5 days)*

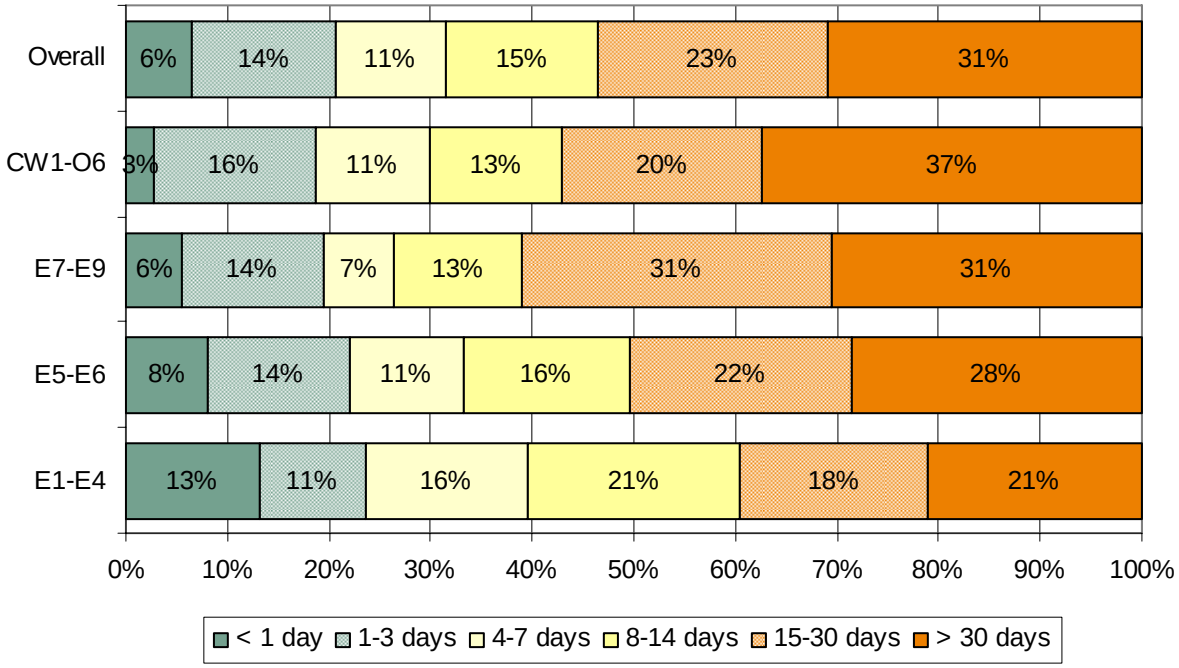


Figure 6-13 - Out-Processing Survey Question / Comment 13B: *"From the time you made initial contact with the transportation office to begin the PCS process, how long did it take to meet with the transportation counselor to complete preliminary inventory?" (Average 8.1 days)*

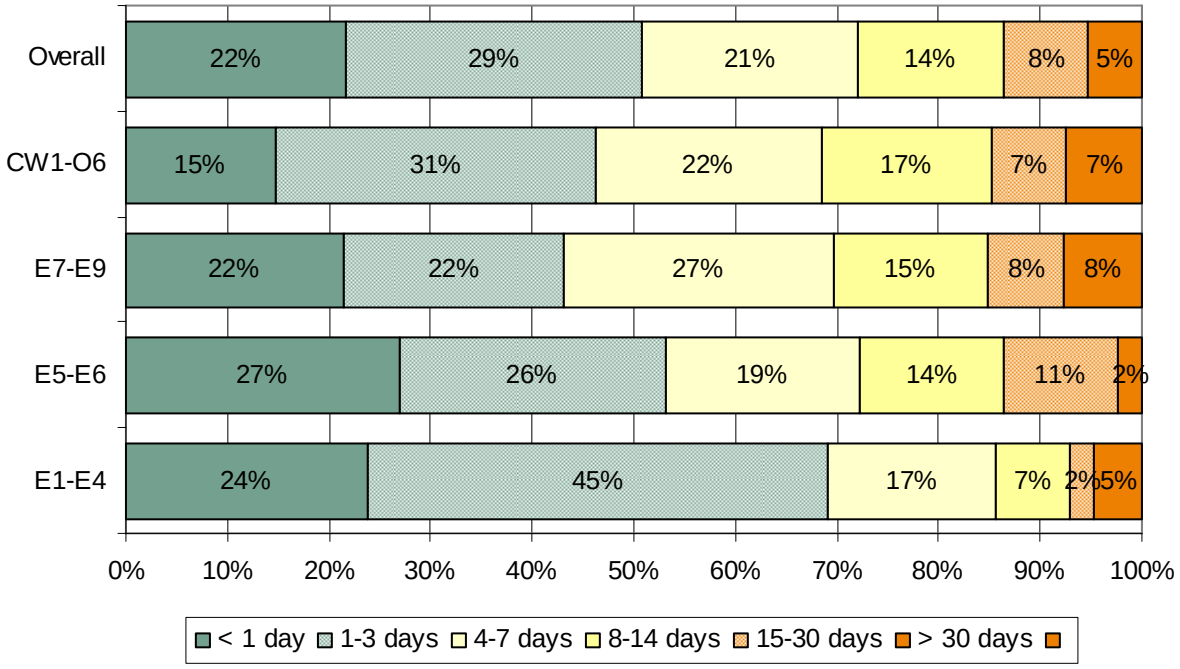


Figure 6-14 - Out-Processing Survey Question / Comment 14: *"At the losing installation, I lived:"*

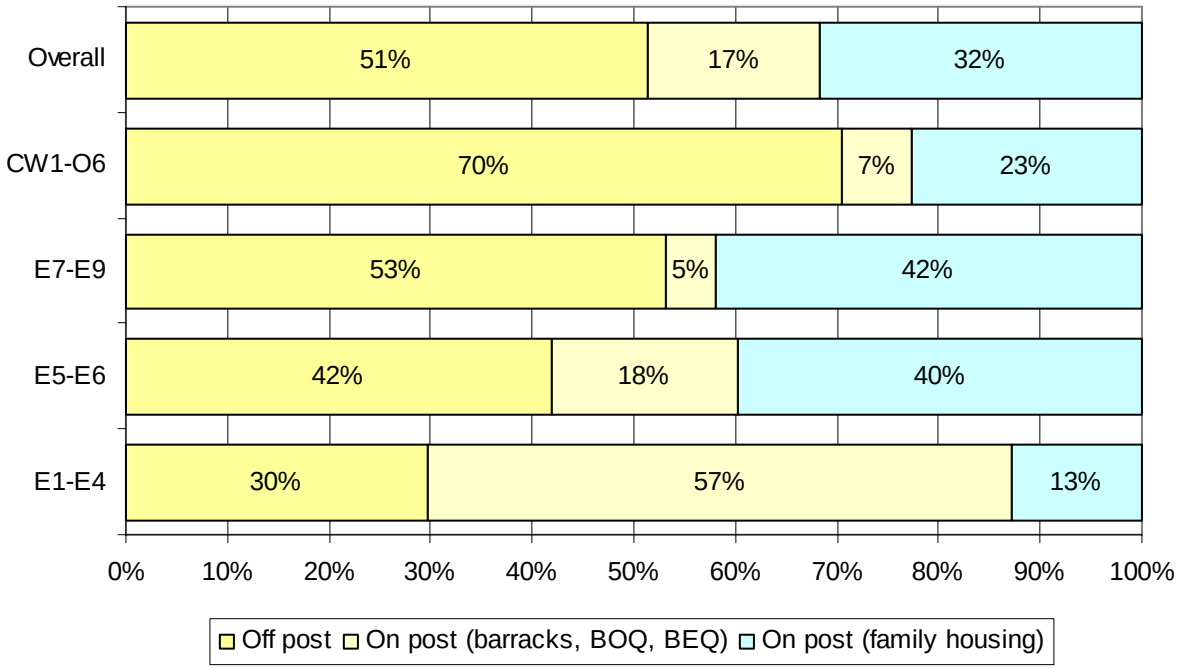


Figure 6-15 - Out-Processing Survey Question / Comment 15A: *"Please indicate the number of days between contacting housing to set the first out-processing appointment and the date cleared housing / passed final inspection?" (Average 15.1 days)*

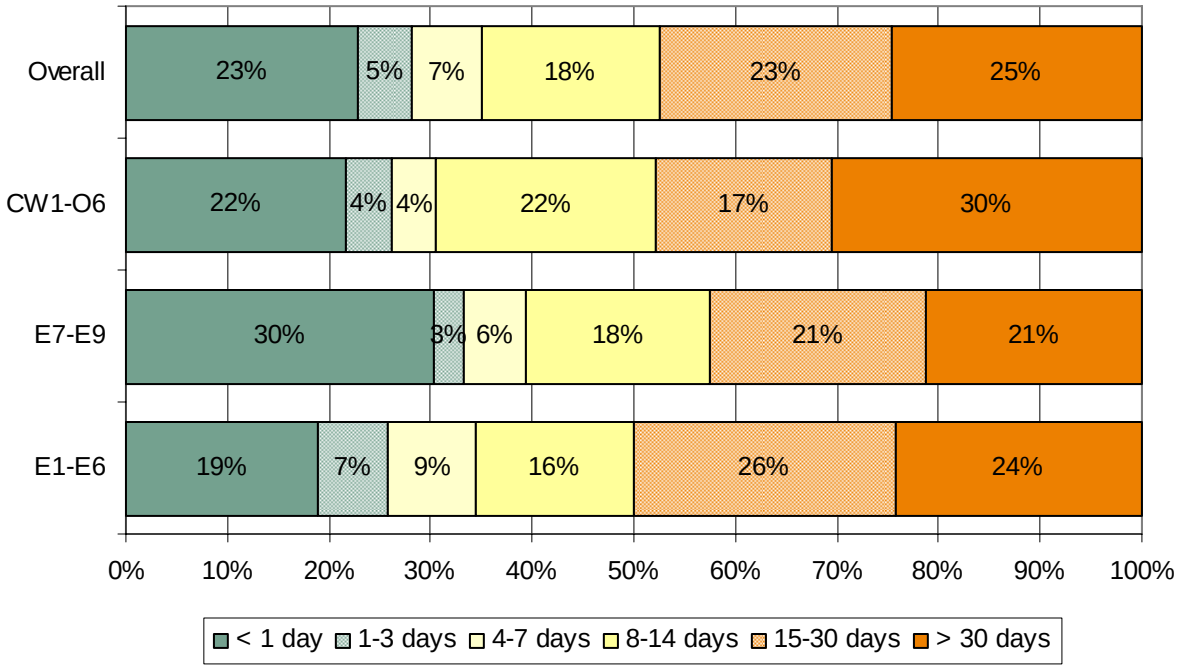


Figure 6-16 - Out-Processing Survey Question / Comment 15B: "*Please indicate the number of days between contacting housing to set the first out-processing appointment and the preliminary inspection at your quarters." (Average 10.8 days)*

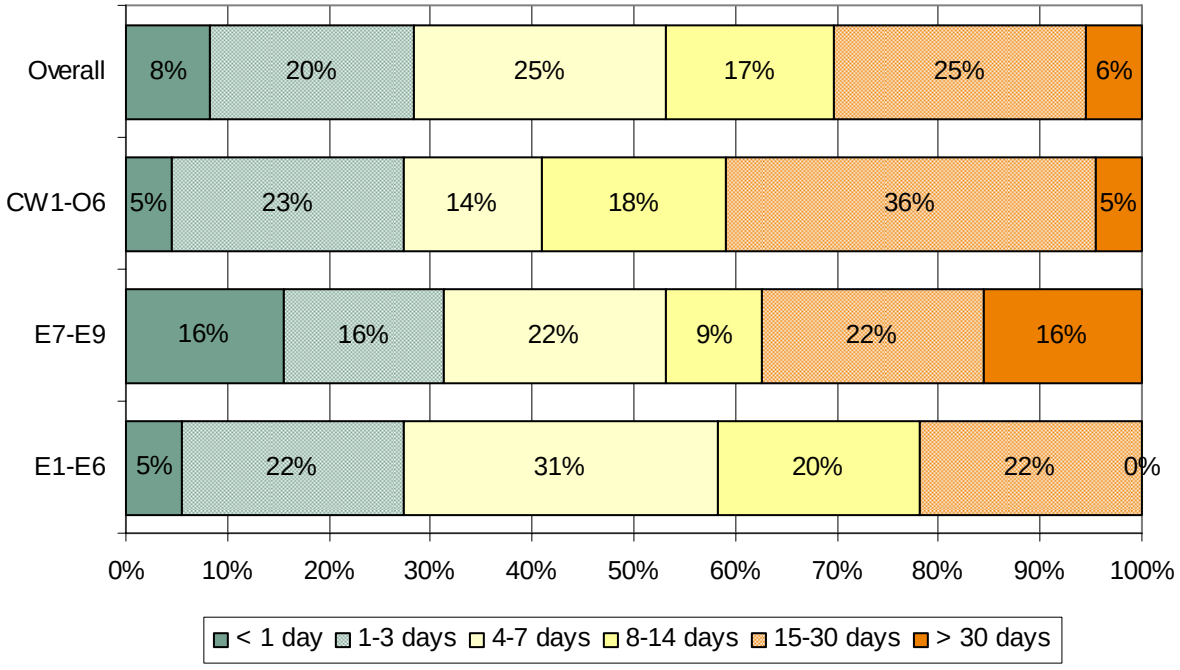


Figure 6-17 - Out-Processing Survey Question / Comment 16: "*How many times did you go through housing final inspection before you passed?*"

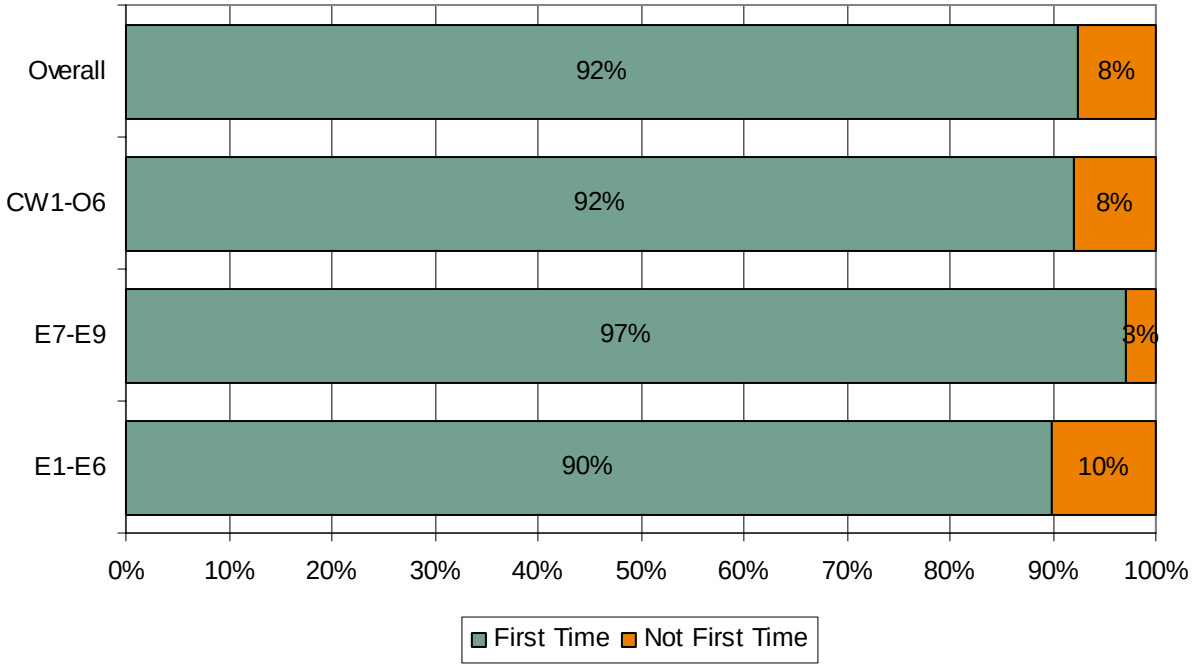


Figure 6-18 - Out-Processing Survey Question / Comment 17: "*Did you clean your on-post house or contract it out?*"

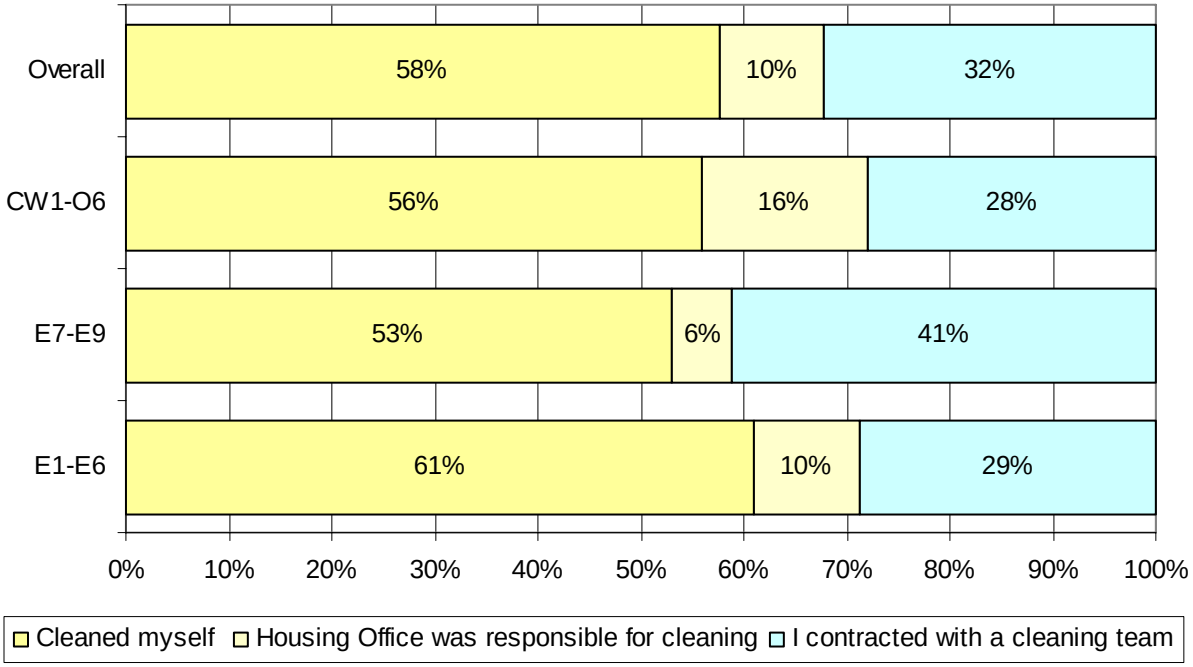


Figure 6-19 - Out-Processing Survey Question / Comment 18: "*After your household goods were picked up how many days did it take for you to clean your quarters?" (Average 3.3 days)*

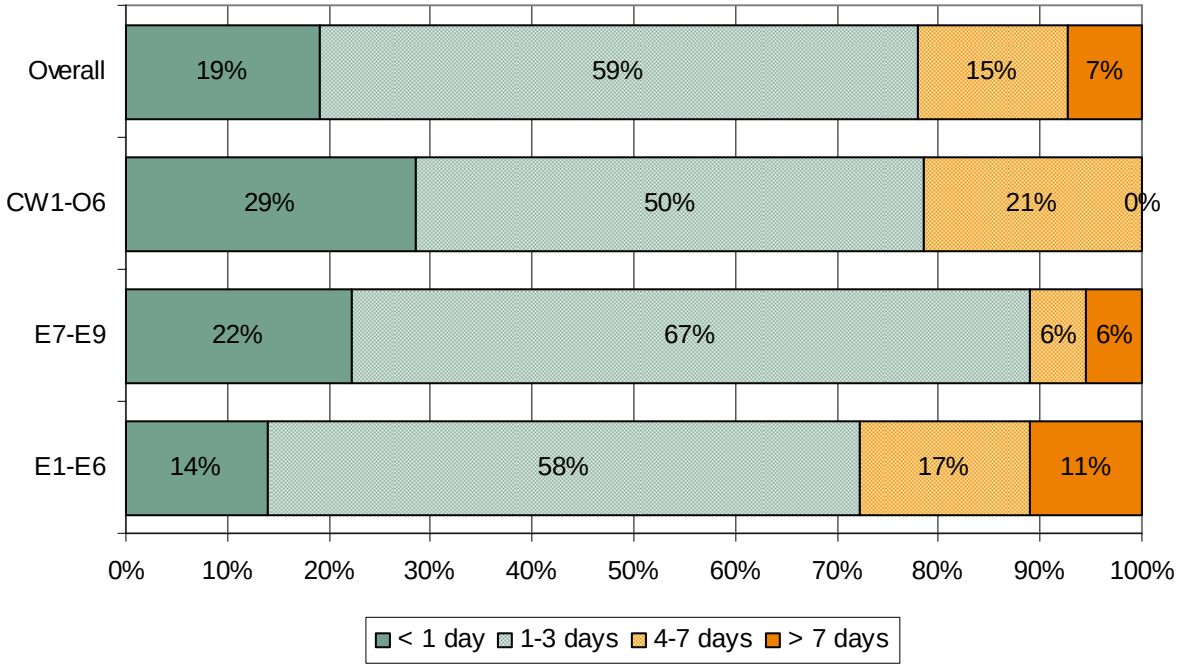


Figure 6-20 - Out-Processing Survey Question / Comment 19A: "*How long did it take to complete all necessary self help?" (Average 2.8 days)*

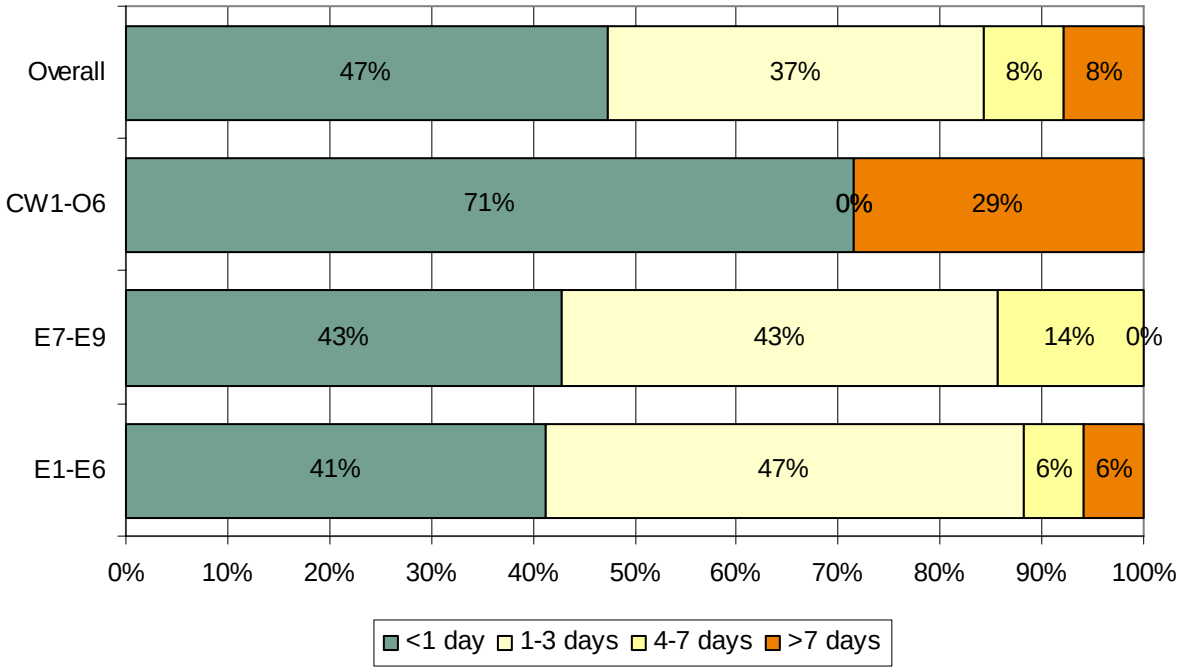


Figure 6-21 - Out-Processing Survey Question / Comment 19B: "*How long did it take to complete sweep out cleaning prior to final inspection?" (Average 2.9 days)*

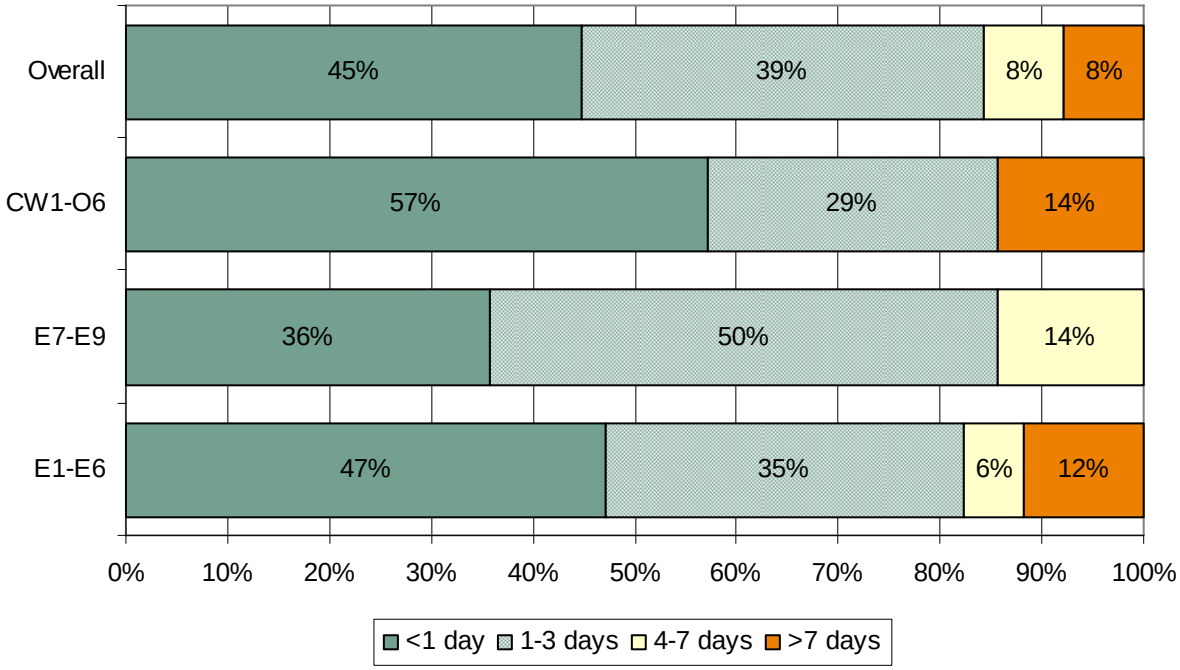


Figure 6-22 - Out-Processing Survey Question / Comment 19C: "*How long did it take to Interview, select and contract cleaning team?" (Average 3.2 days)*

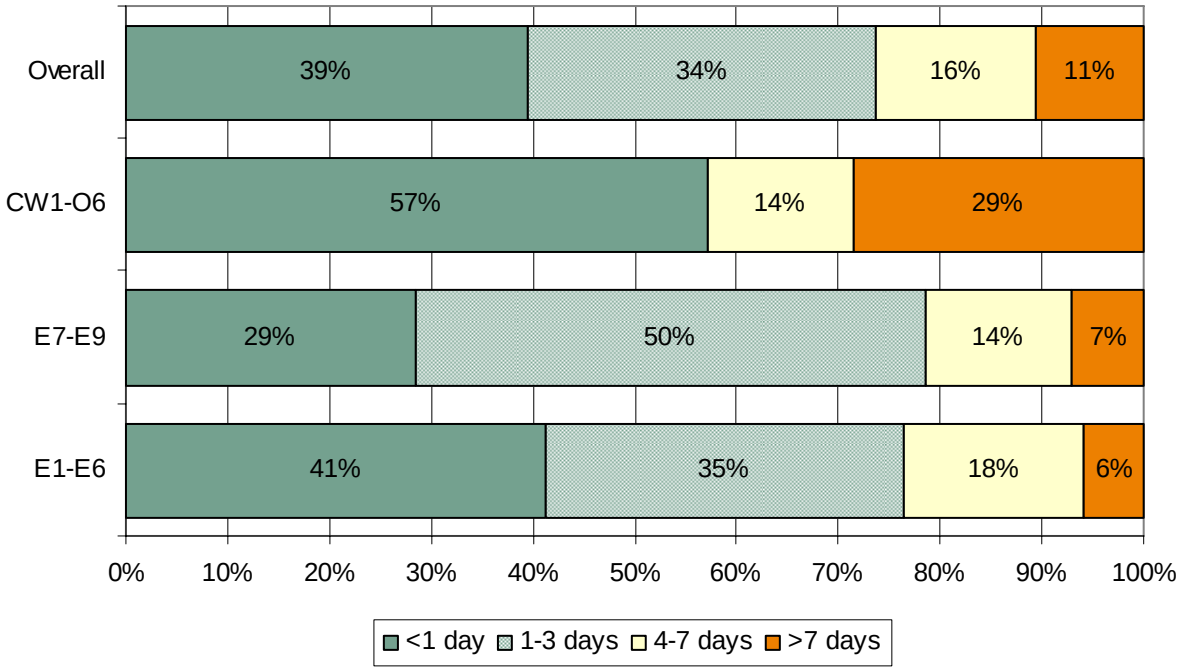


Figure 6-23 - Out-Processing Survey Question / Comment 20: *"How many days did you stay in temporary lodging while clearing and preparing to depart?" (Average 5.7 days)*

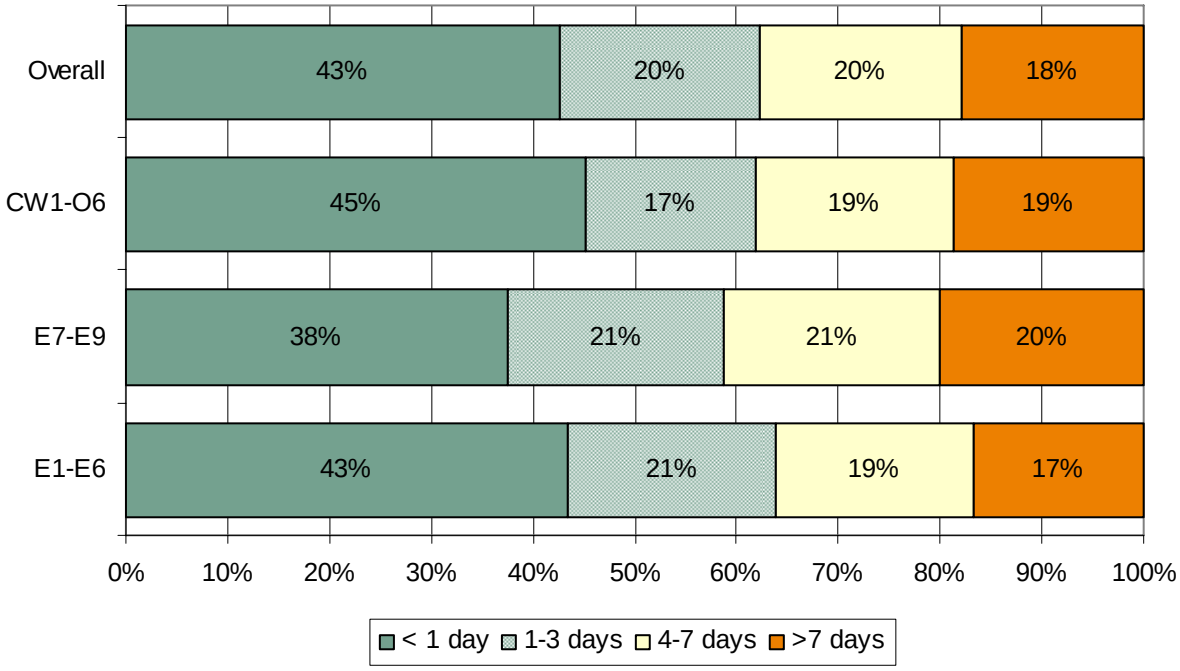


Figure 6-24 - Out-Processing Survey Question / Comment 21: *"Prior to your first attempt to clear CIF, how many days did you spend cleaning your equipment?" (Average 2.1 days)*

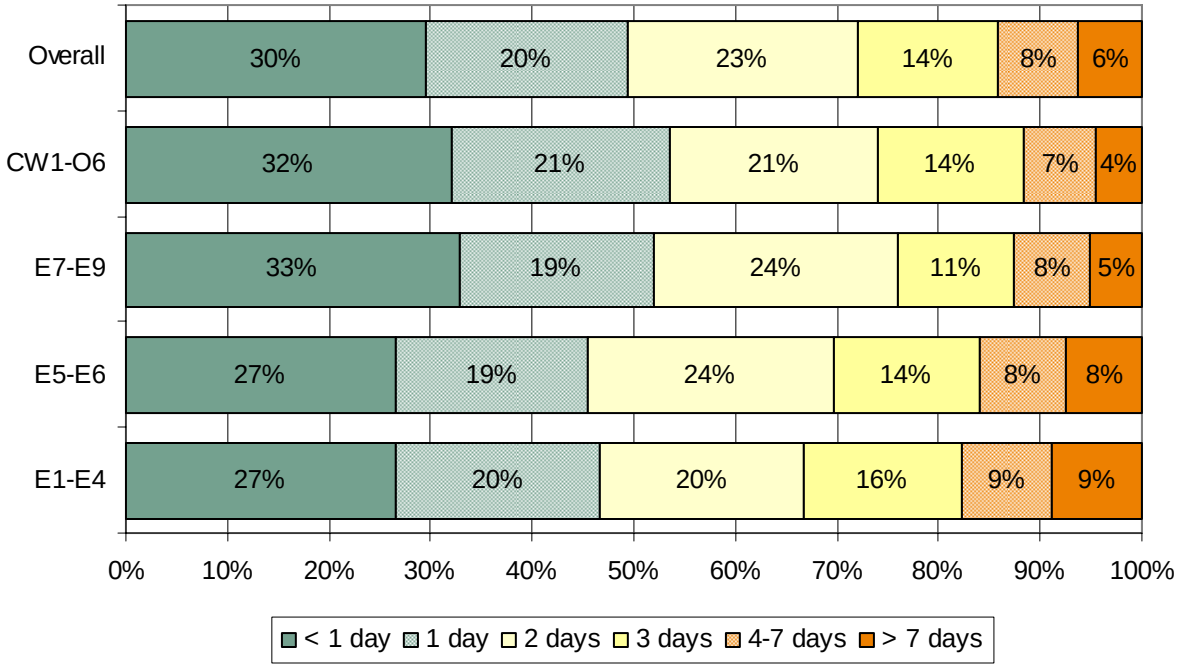


Figure 6-25 - Out-Processing Survey Question / Comment 22: "*What was your approximate wait time at CIF on your first attempt at clearing?" (Average 1.2 hours)*

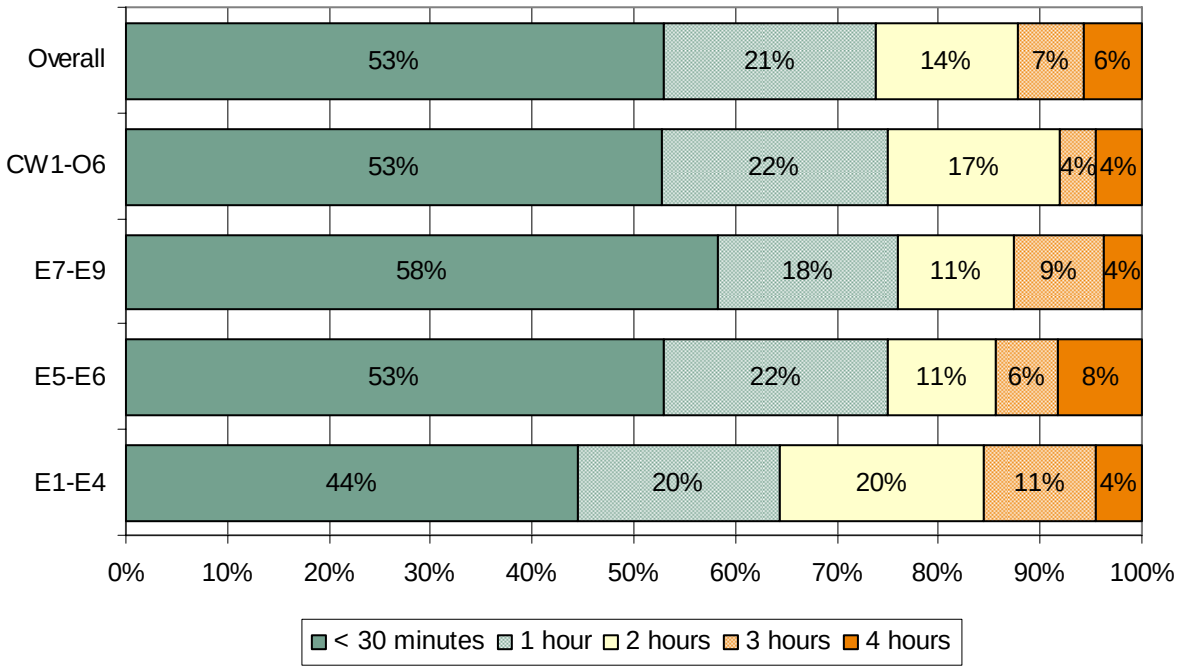


Figure 6-26 - Out-Processing Survey Question / Comment 23: "*How many attempts did it take you to clear CIF?" (Average 1.4 attempts)*

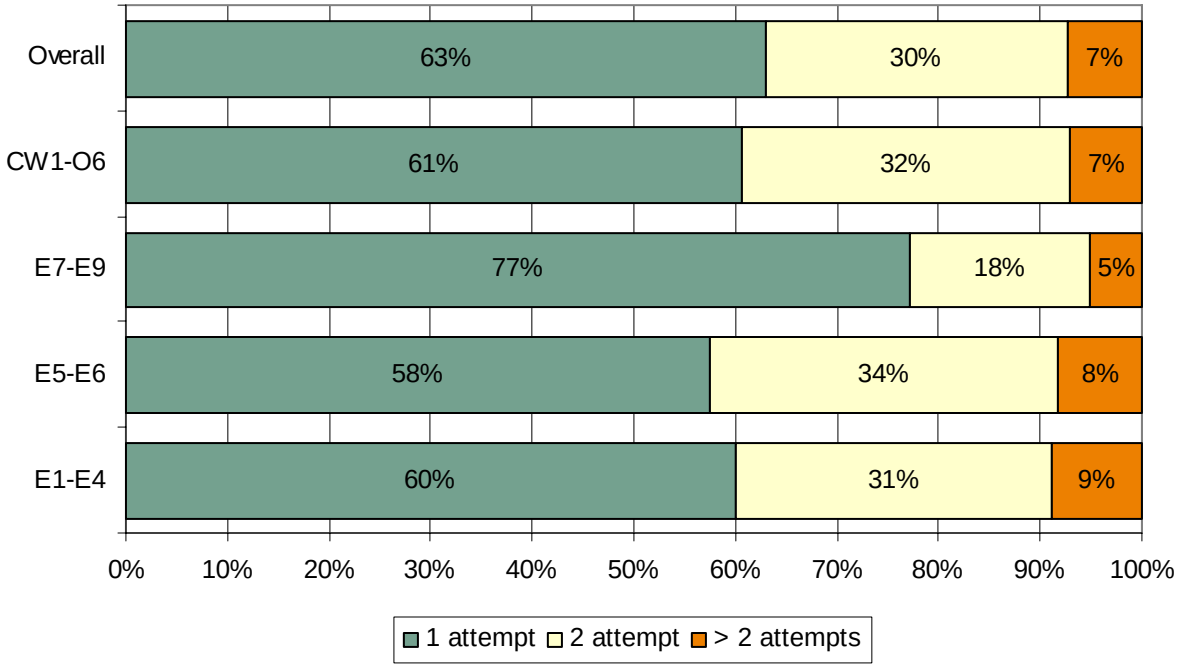


Figure 6-27 - Out-Processing Survey Question / Comment 24: "*Approximately how long did it take you to re-clean, replace and/or complete a Report of Survey in order to correct deficiencies and pass CIF?" (Average 1.5 days)*

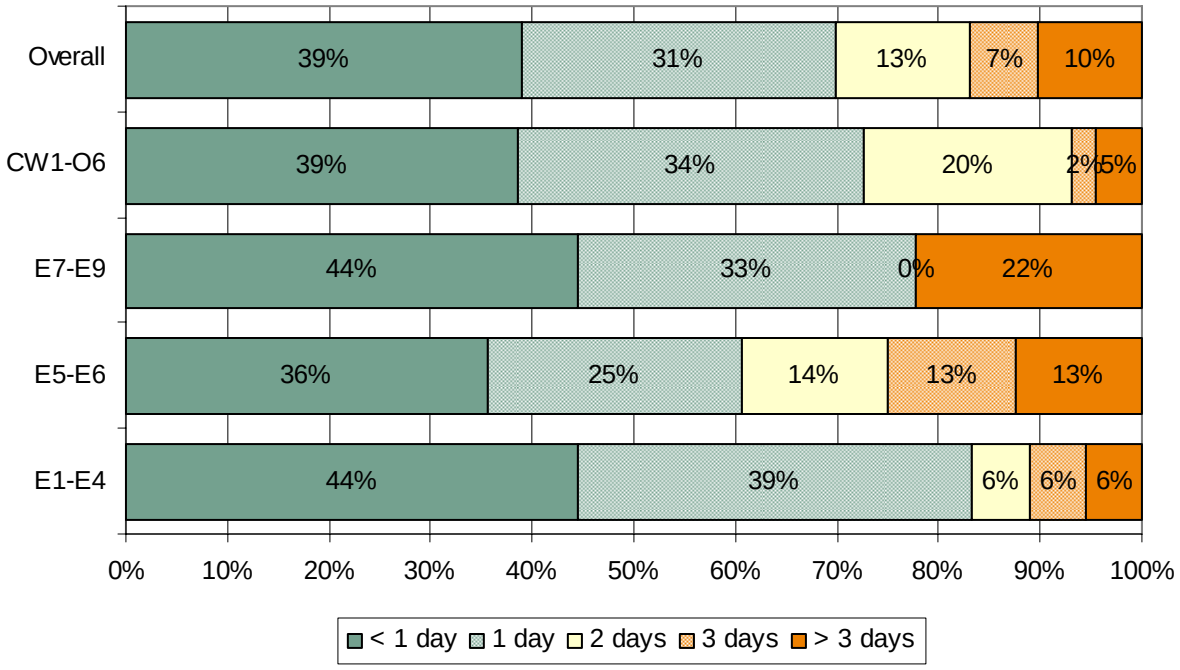


Figure 6-28 - Out-Processing Survey Question / Comment 25: "*How many total days did it take to clear CIF (from the time you began cleaning your equipment to the day you passed inspection)?" (Average 3.0 days)*

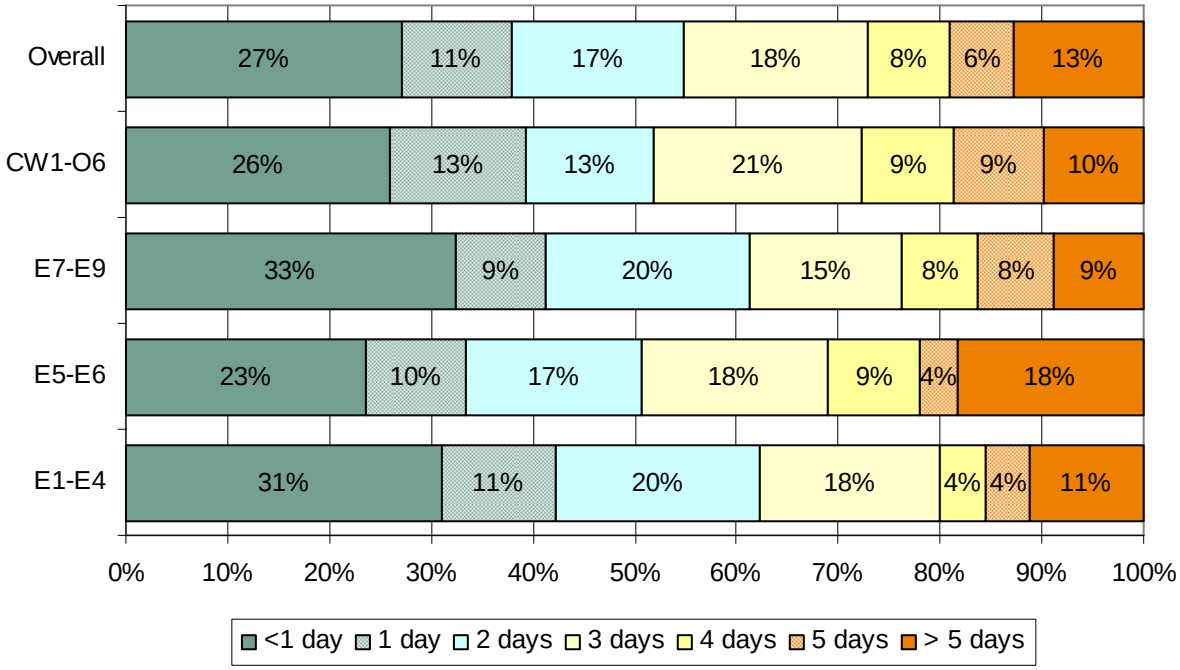
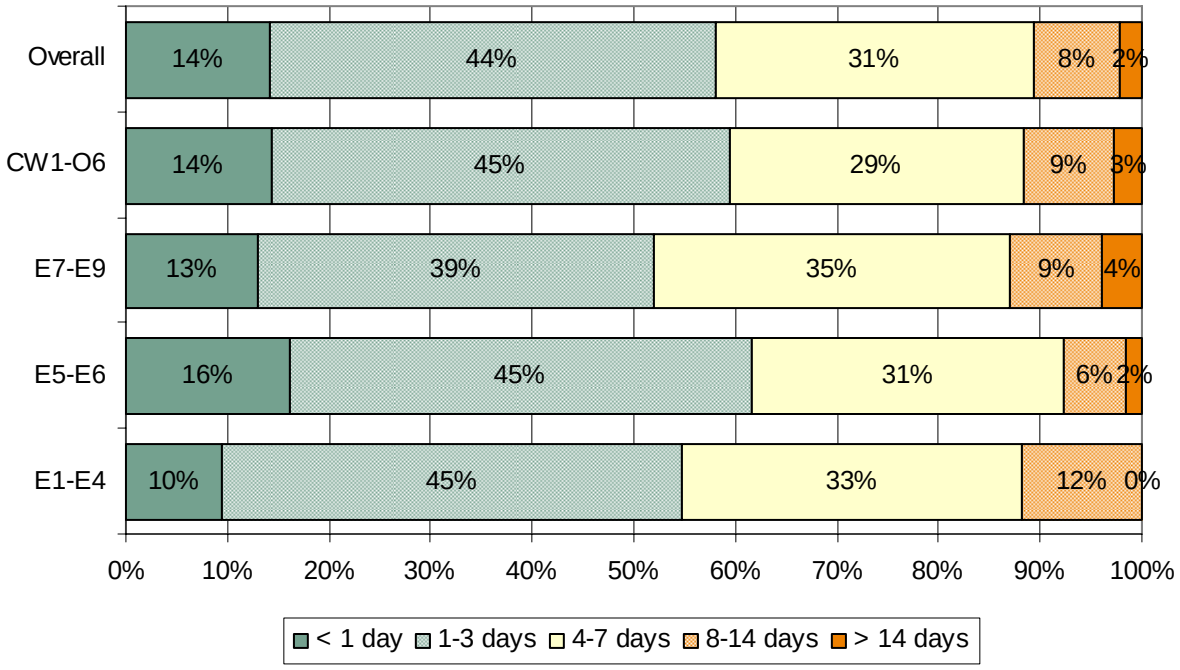


Figure 6-29 - Out-Processing Survey Question / Comment 26: "*How much total time did it take to clear the "other" activities (i.e., ACS, MWR, Medical, Dental, Finance, etc.)?" (Average 4.1 days)*



7. Appendix B – Soldier In-Processing Survey Data

Figure 7-1 - In-Processing Survey Question / Comment 3: "*I relocated with one or more dependent Family Members.*"

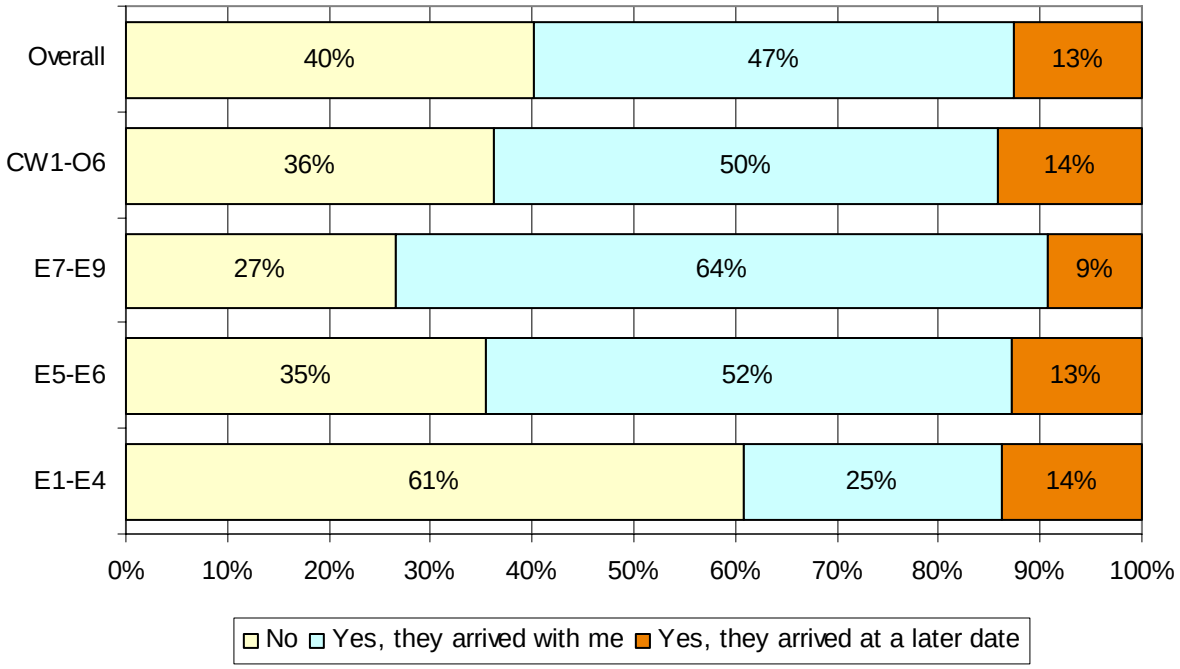


Figure 7-2 - In-Processing Survey Question / Comment 4: "*My most recent PCS occurred immediately following a return from deployment.*"

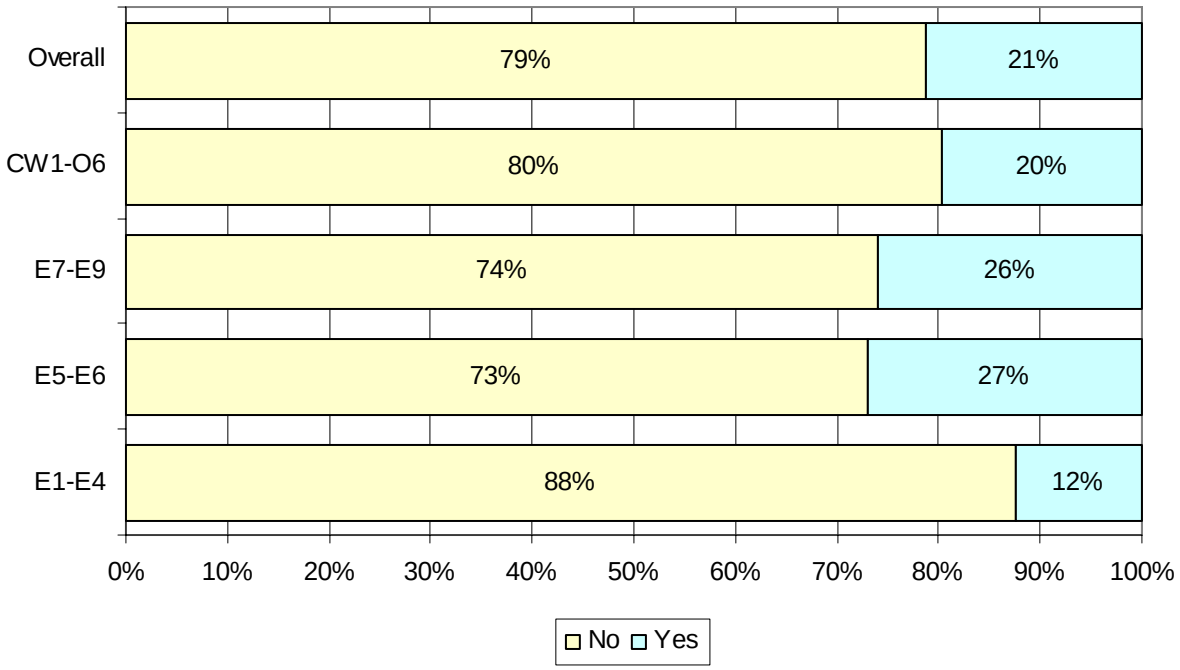


Figure 7-3 - In-Processing Survey Question / Comment 5: *"Approximately how much leave did you take in transit to your new duty station?" (Average 2.0 weeks)*

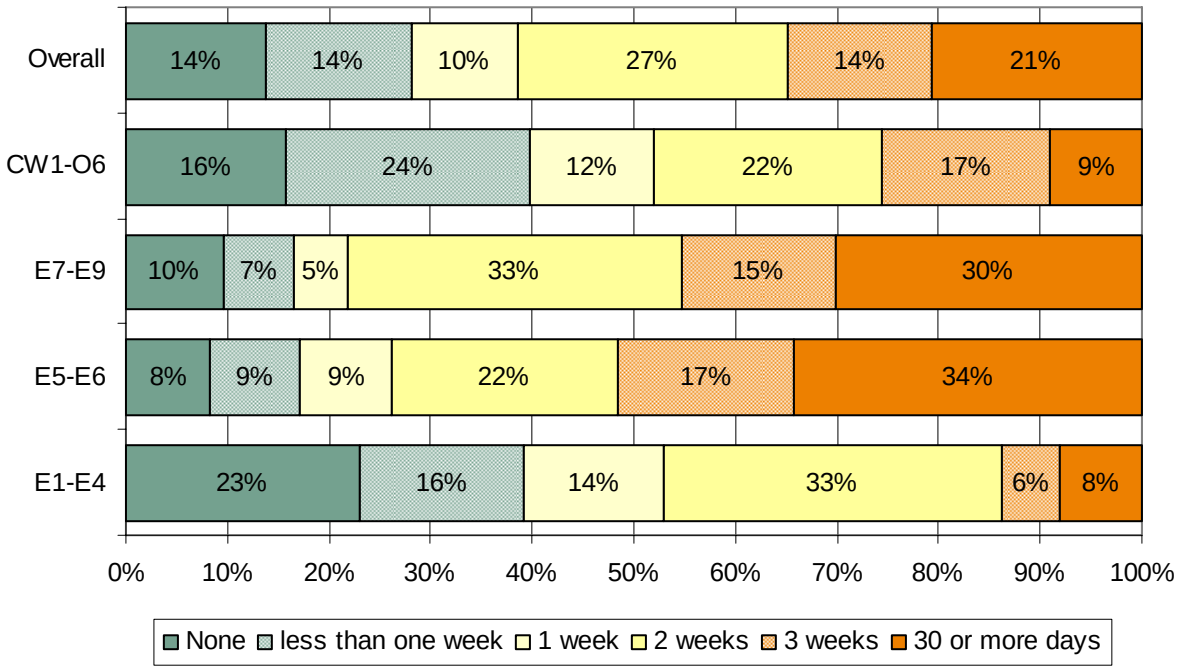


Figure 7-4 - In-Processing Survey Question / Comment 6: *"Did any of the following apply to your last PCS?"*

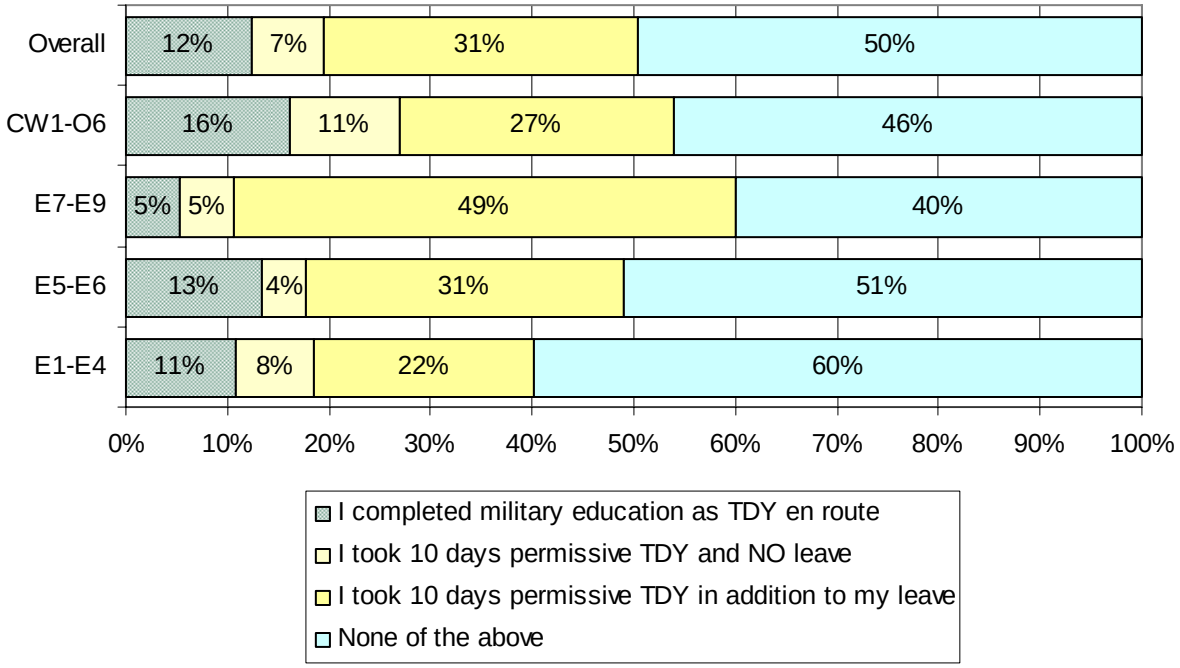


Figure 7-5 - In-Processing Survey Question / Comment 7: *"Who was primarily responsible for the implementation of the activities necessary for your move in?"*

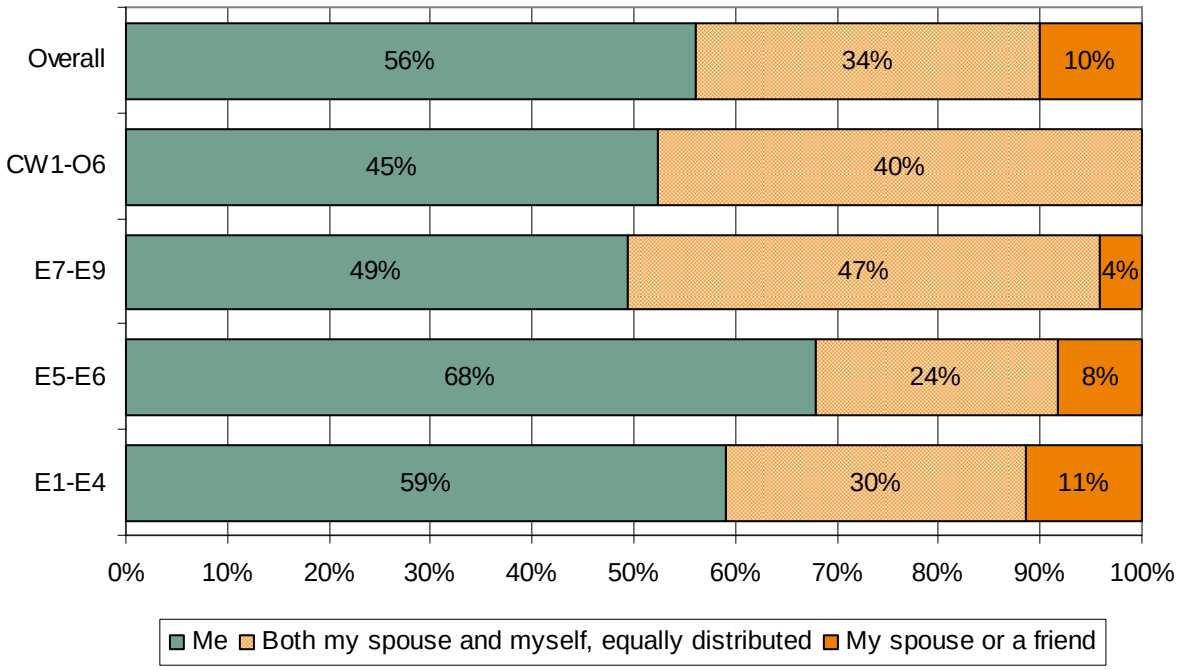


Figure 7-6 - In-Processing Survey Question / Comment 8: *"Please indicate which of the following issues caused you to experience out-processing delays [comparison of Soldiers indicating at least one problem vs. Soldiers indicating "none of the above"]).*"

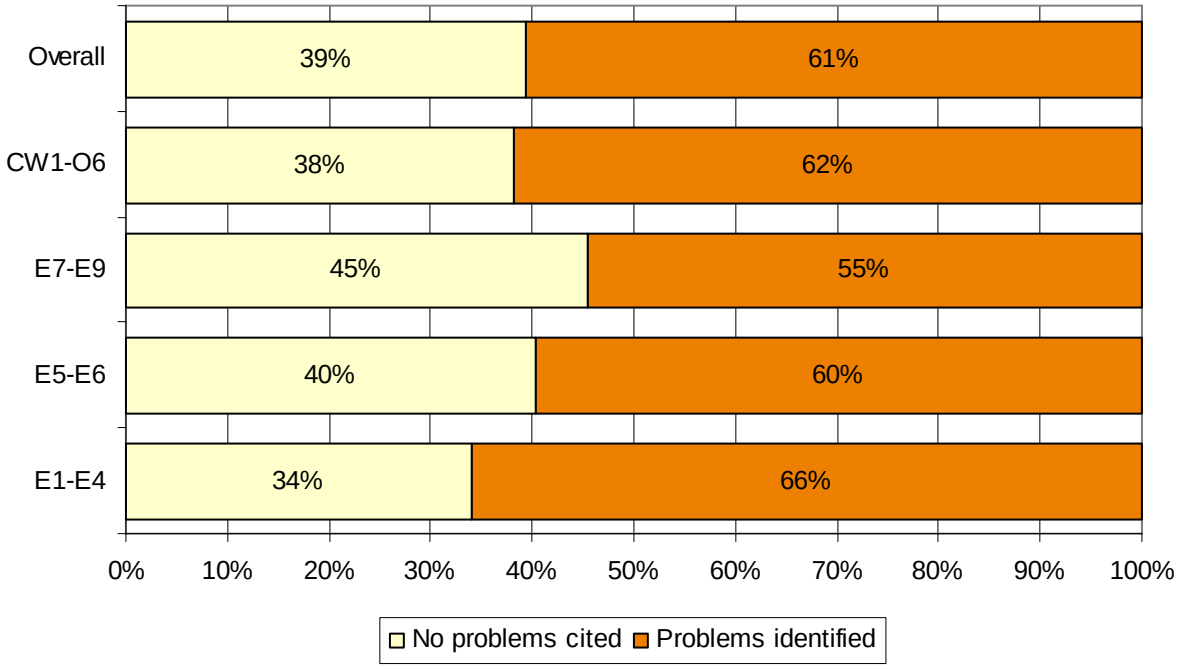


Figure 7-7 - In-Processing Survey Question / Comment 8: *"Please indicate which of the following issues caused you to experience out-processing delays [based on Soldiers who indicated that they encountered at least one delay]."*

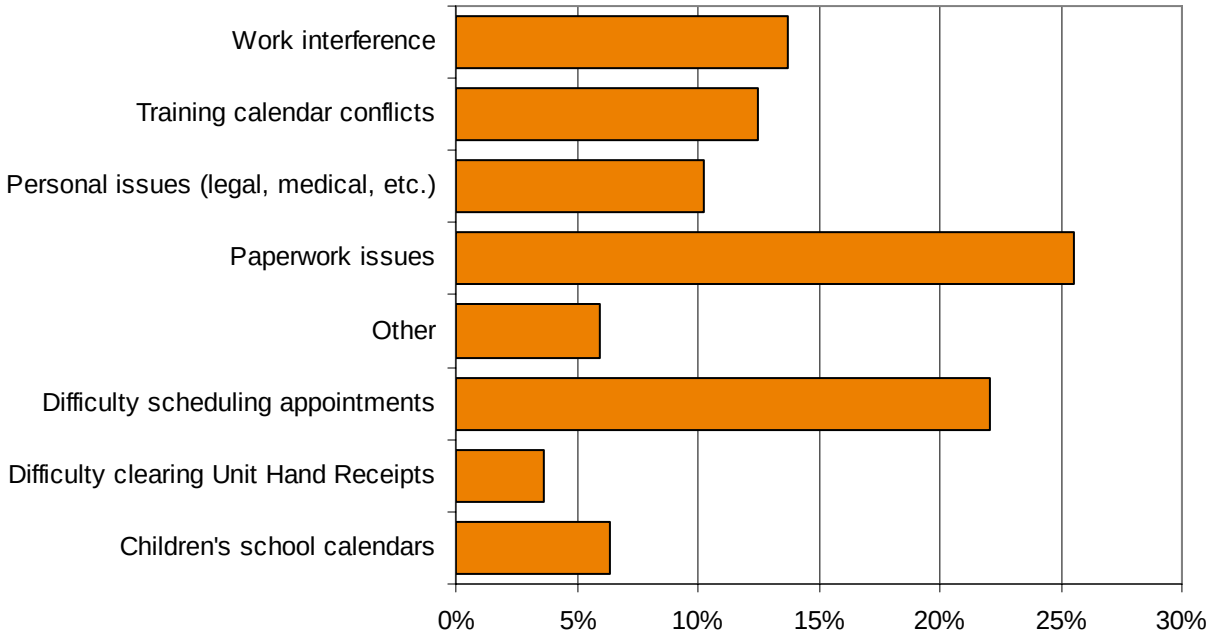


Figure 7-8 - In-Processing Survey Question / Comment 9: *"Once you reported in to your new duty station, how many days did it take you to complete in-processing and be ready for training?" (Average 12.6 days)*

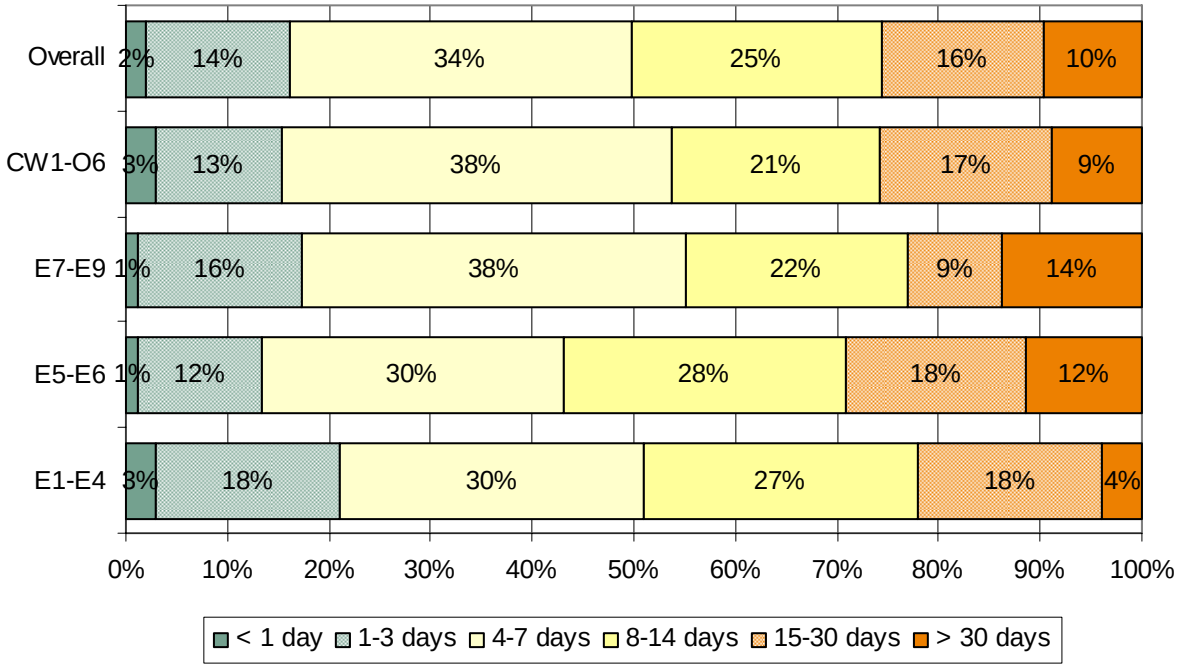


Figure 7-9 - In-Processing Survey Question / Comment 10: *"Did you arrive after your unit had already started training together?"*

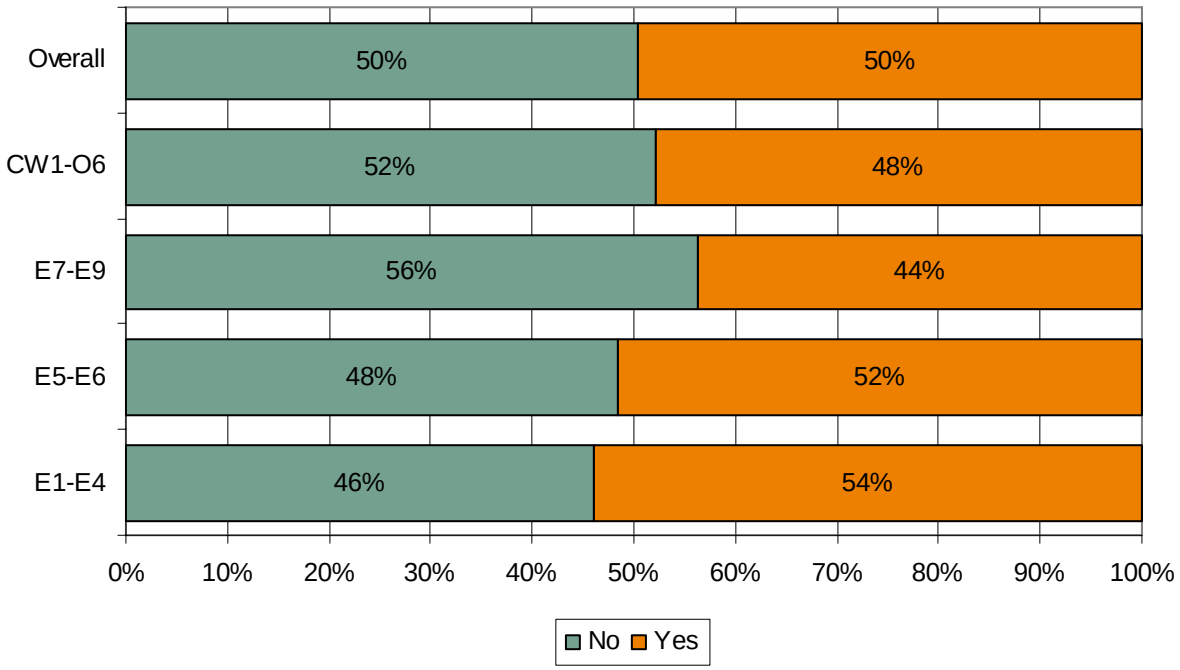


Figure 7-10 - In-Processing Survey Question / Comment 12: *"From the time you reported in to your new unit, how long was it until your unit deployed [comparison of Soldiers indicating a specific time frame to deploy with the new unit vs. "not applicable / new unit not redeployed])?"*

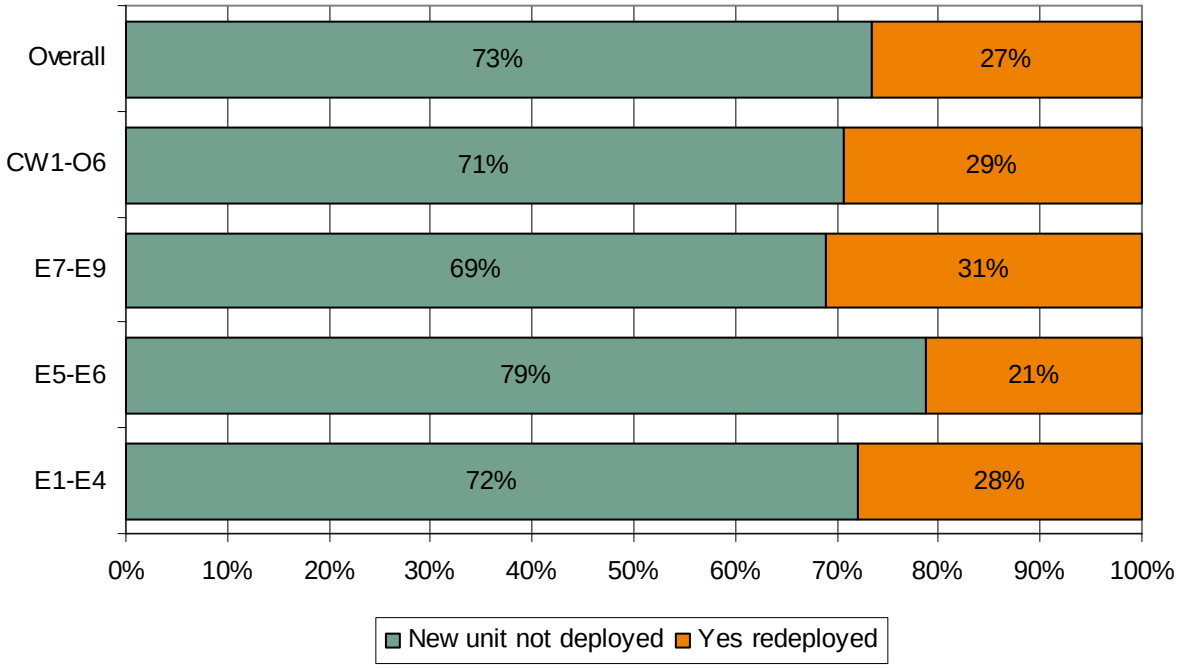


Figure 7-11 - In-Processing Survey Question / Comment 12: *"From the time you reported in to your new unit, how long was it until your unit deployed [time in the unit before unit deployed if Soldier selected that he had deployed with the new unit]?" (Average 5.7 months)*

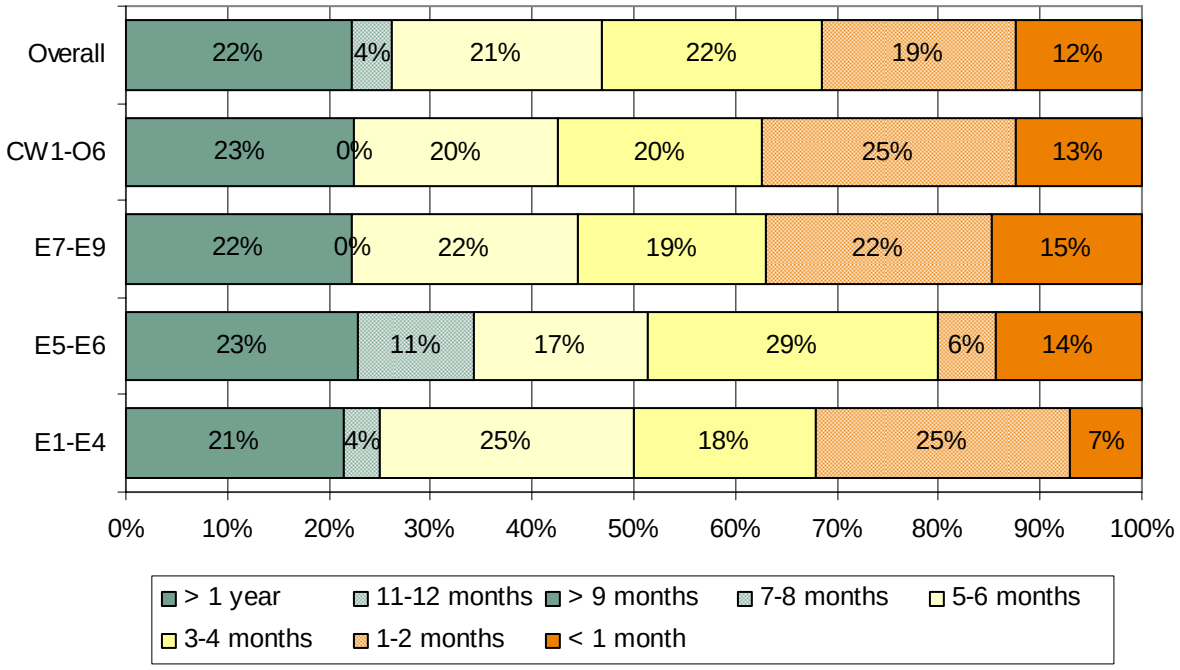


Figure 7-12 - In-Processing Survey Question / Comment 13: *"In what order did you prioritize the following in-processing activities?"*

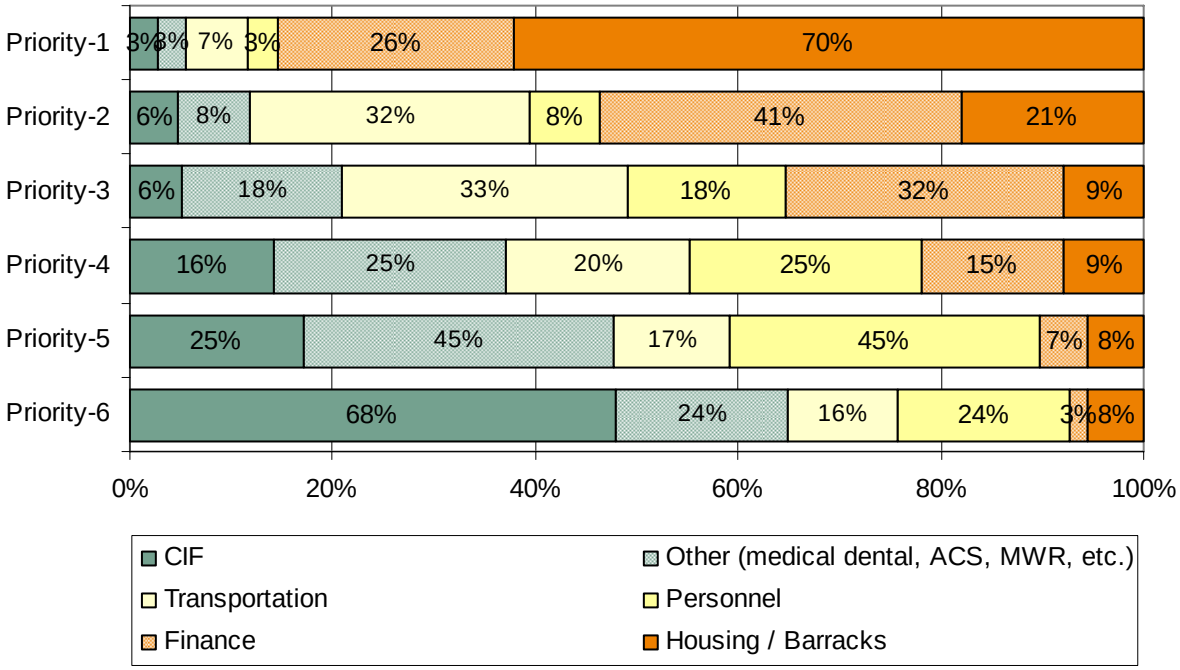


Figure 7-13 - In-Processing Survey Question / Comment 14 and 26: *"The following organizations were cleared [using which of the following three methods or processes]?"*

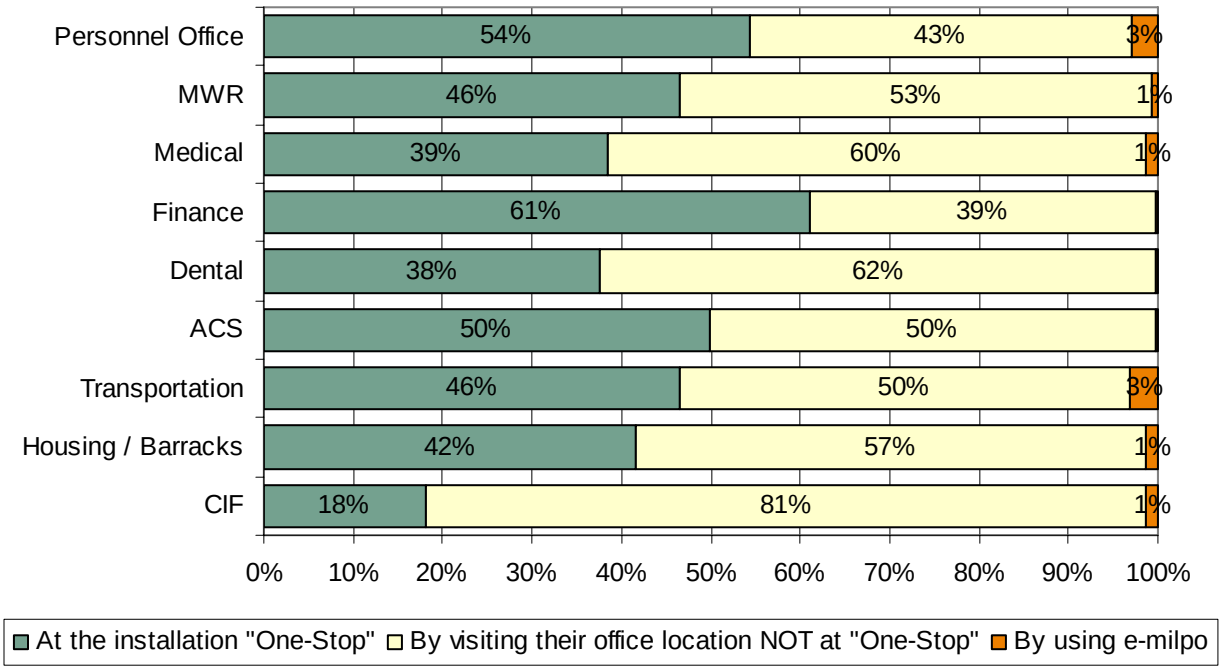


Figure 7-14 - In-Processing Survey Question / Comment 15: *"After clearing through one-stop and/or e-milpo was complete, how many days did it take for you to finish in-processing onto post?" (Average 7.1 days)*

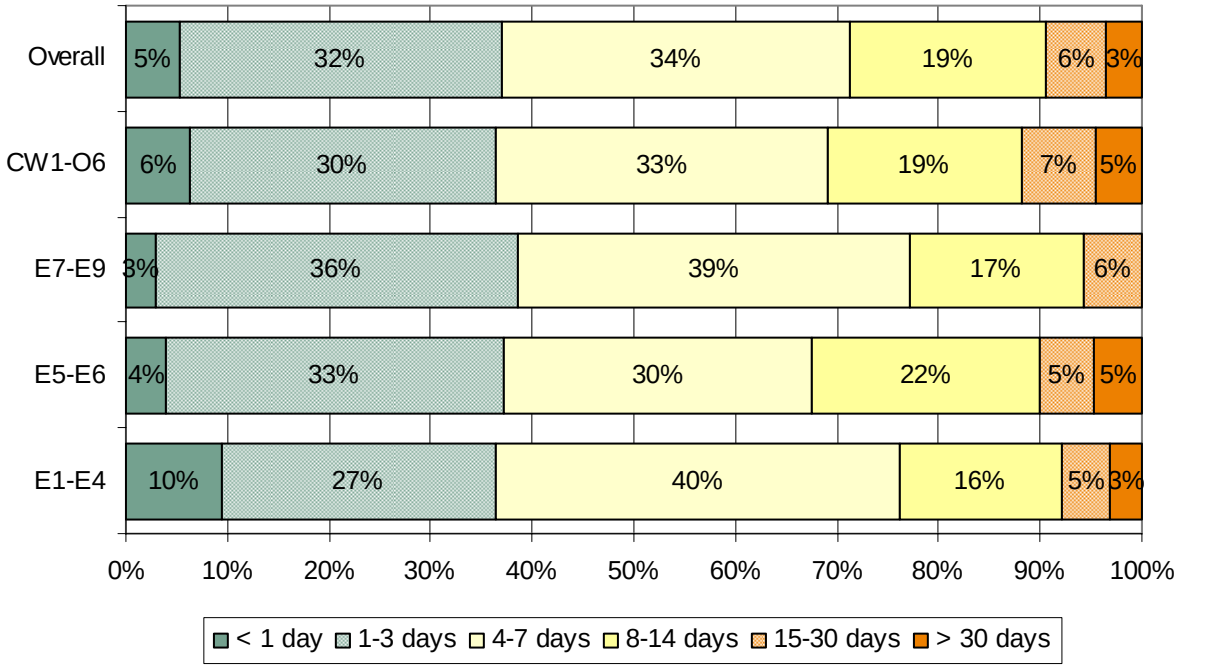


Figure 7-15 - In-Processing Survey Question / Comment 16: *"After being informed of the on-post housing situation at my new duty station I…"*

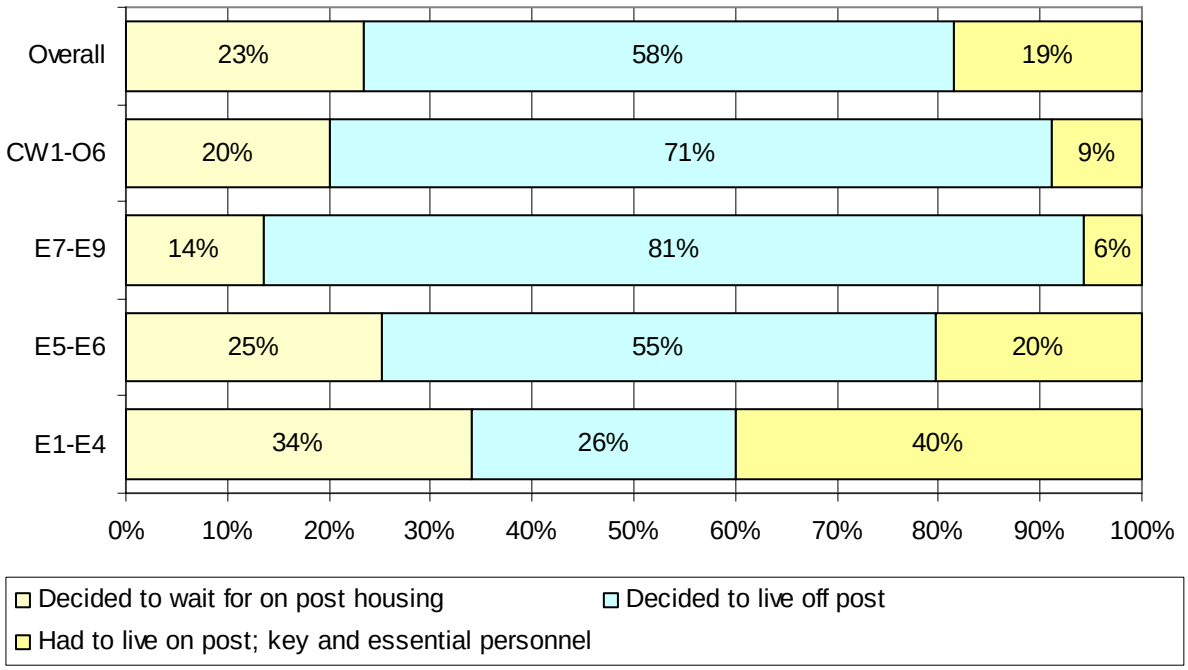


Figure 7-16 - In-Processing Survey Question / Comment 17: *"How long was your wait for on post housing?" (Average 19.2 days)*

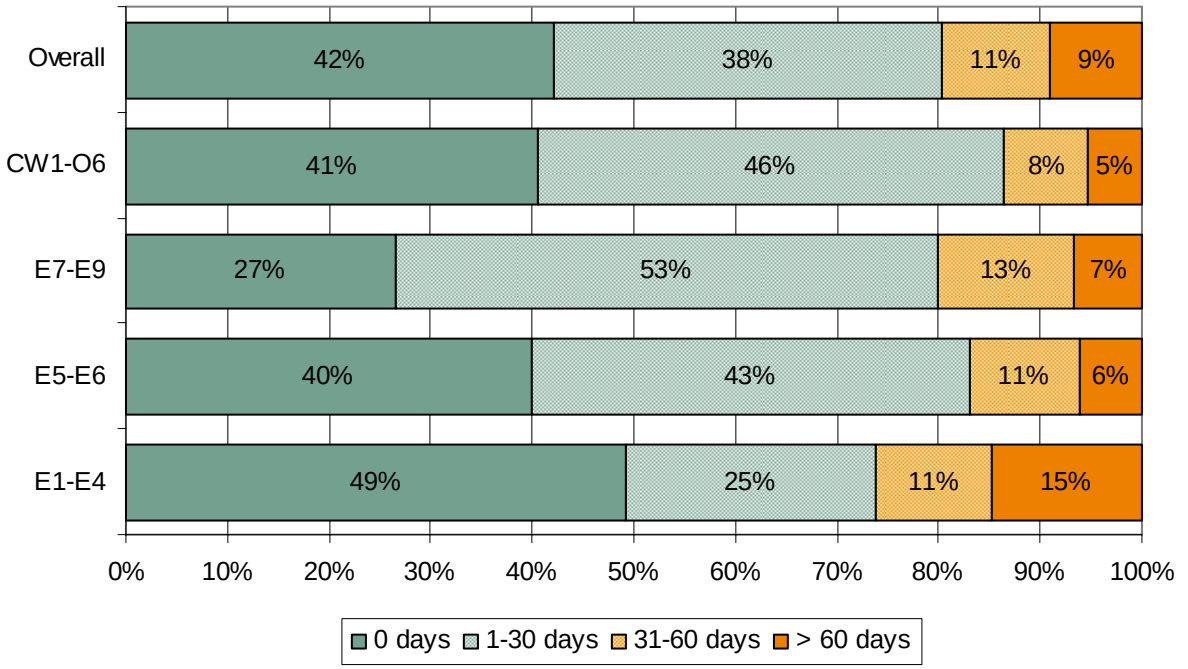


Figure 7-17 - In-Processing Survey Question / Comment 18: *"While waiting for on post housing:"*

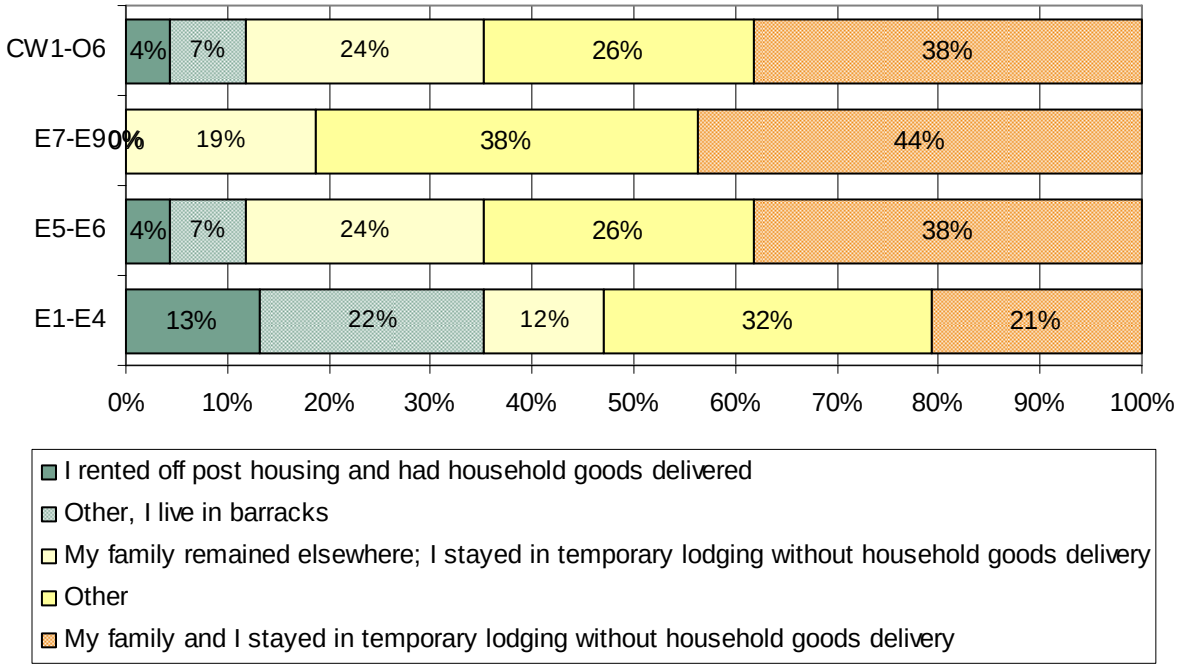


Figure 7-18 - In-Processing Survey Question / Comment 19: *"When on post housing became available and was offered to me, I…"*

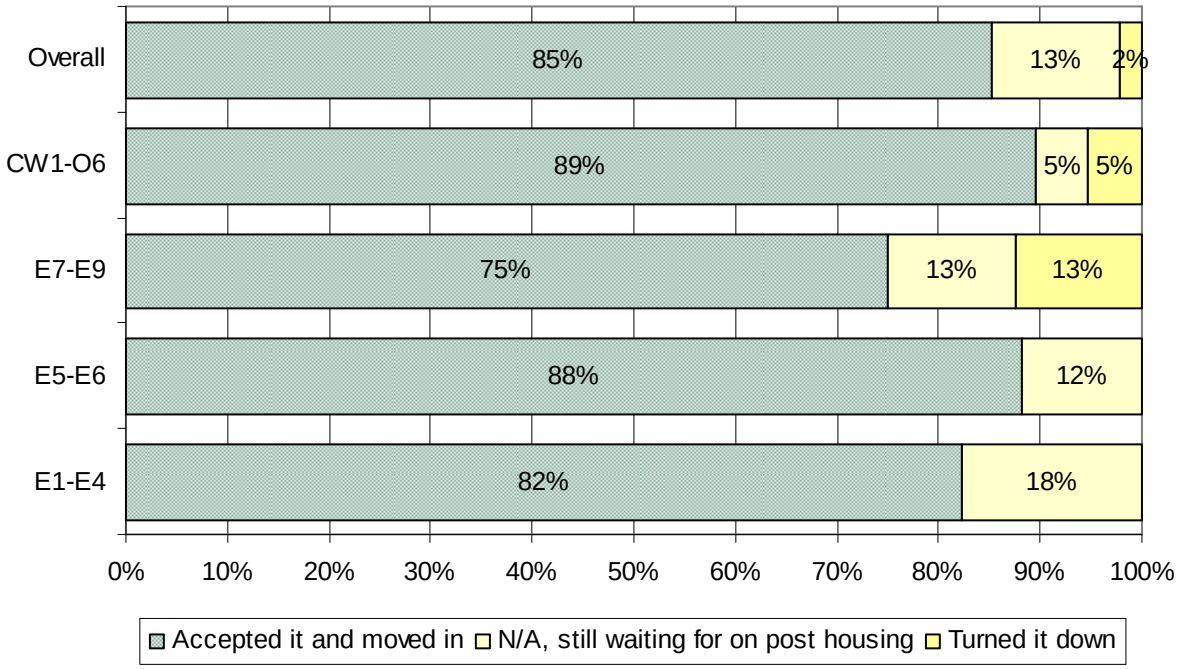


Figure 7-19 - In-Processing Survey Question / Comment 20: *"After arriving at your gaining installation, how long did it take for you to find off post housing?" (Average 9.7 days)*

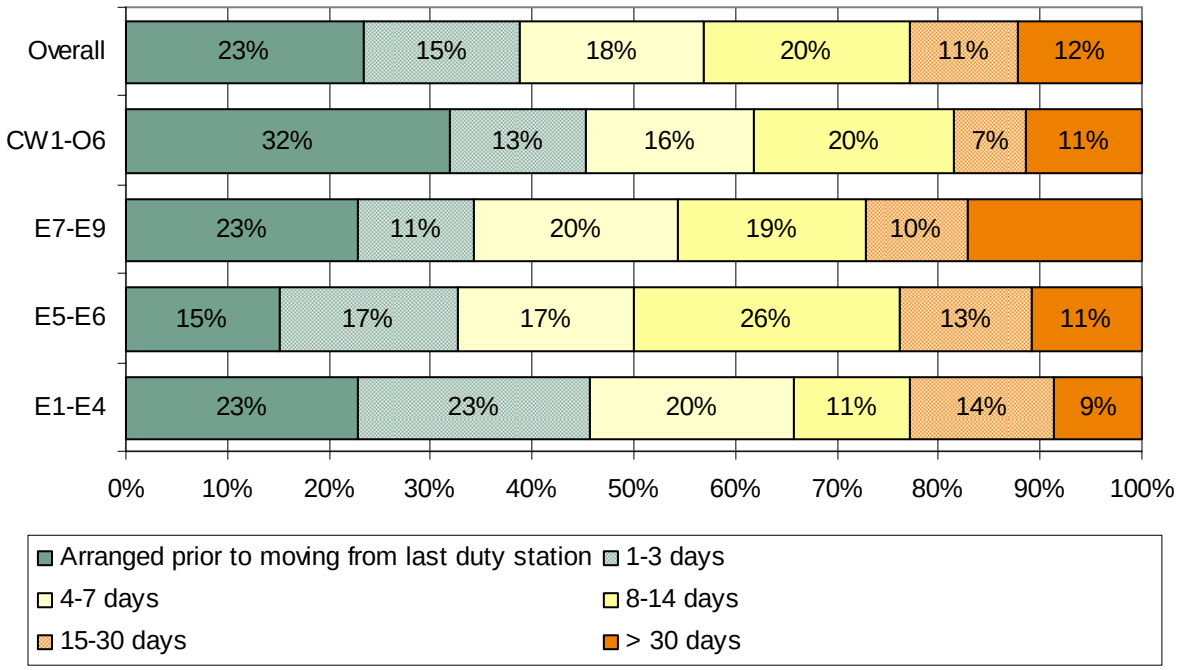


Figure 7-20 - In-Processing Survey Question / Comment 21: *"From the time you arrived at your new duty station, how many days did you stay in temporary lodging (hotel or guest house)?" (Average 11.3)*

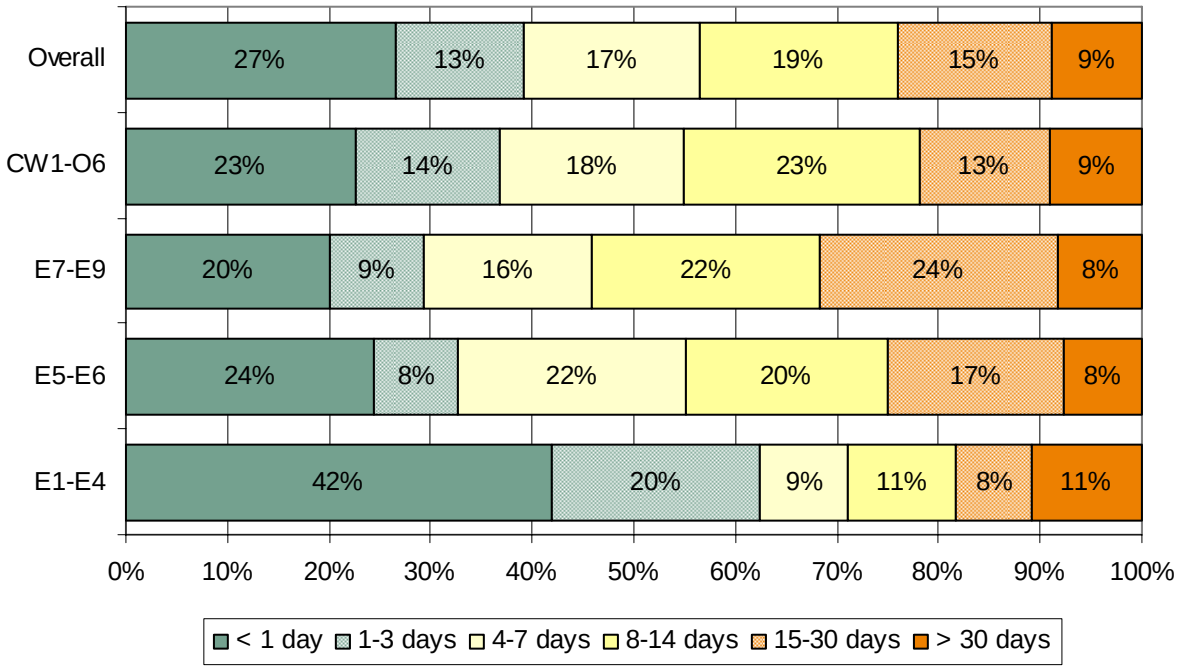


Figure 7-21 - In-Processing Survey Question / Comment 22: *"Did you arrive at your new duty station before your household goods arrived?"*

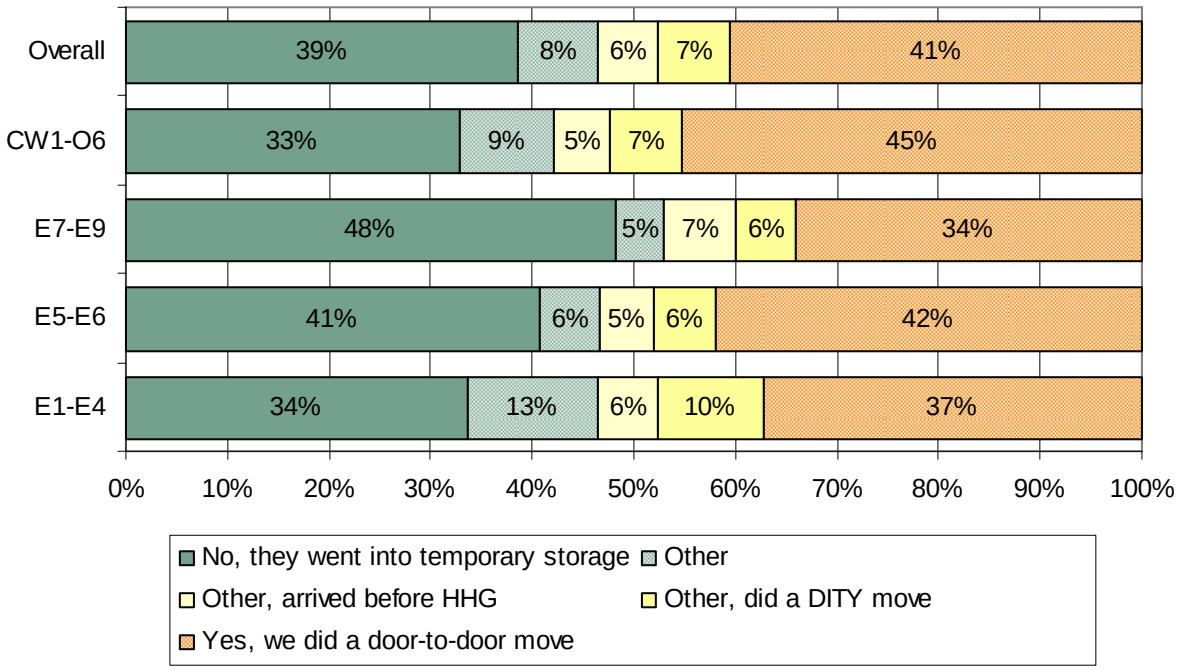


Figure 7-22 - In-Processing Survey Question / Comment 23A: *"From the time you arrived at your gaining installation, how many days did it take to get a scheduled delivery date?" (Average 10.7 days)*

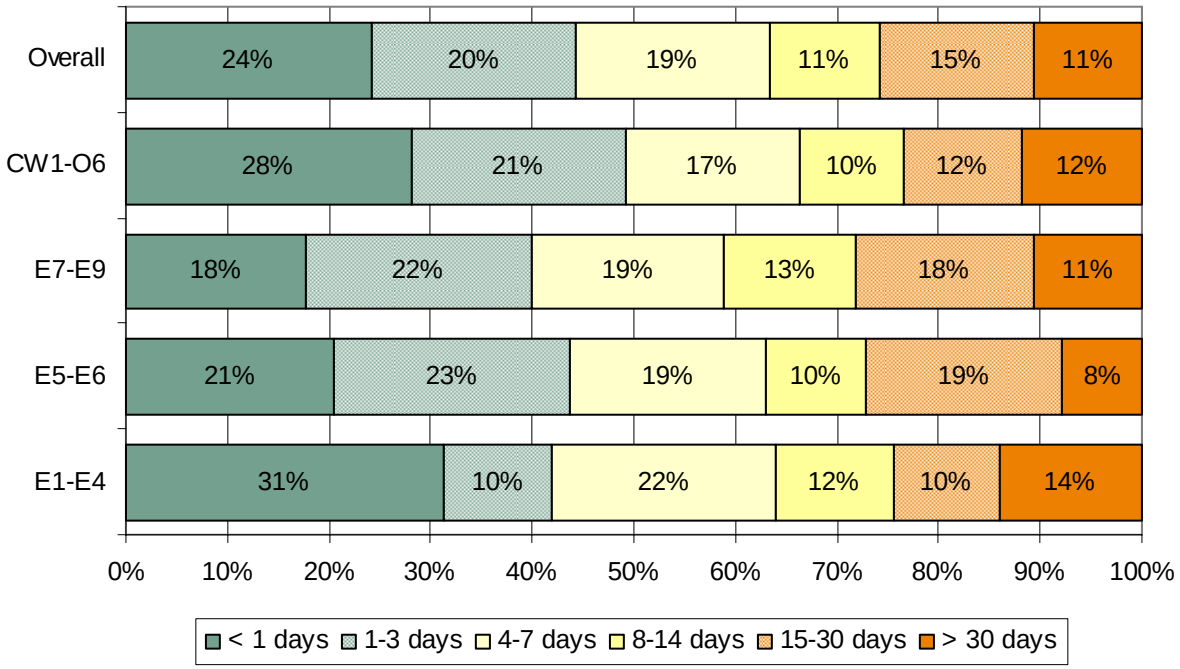


Figure 7-23 - In-Processing Survey Question / Comment 23B: *"From the time you arrived at your gaining installation, how many days did it take to complete delivery and unload household goods?" (Average 15.0 days)*

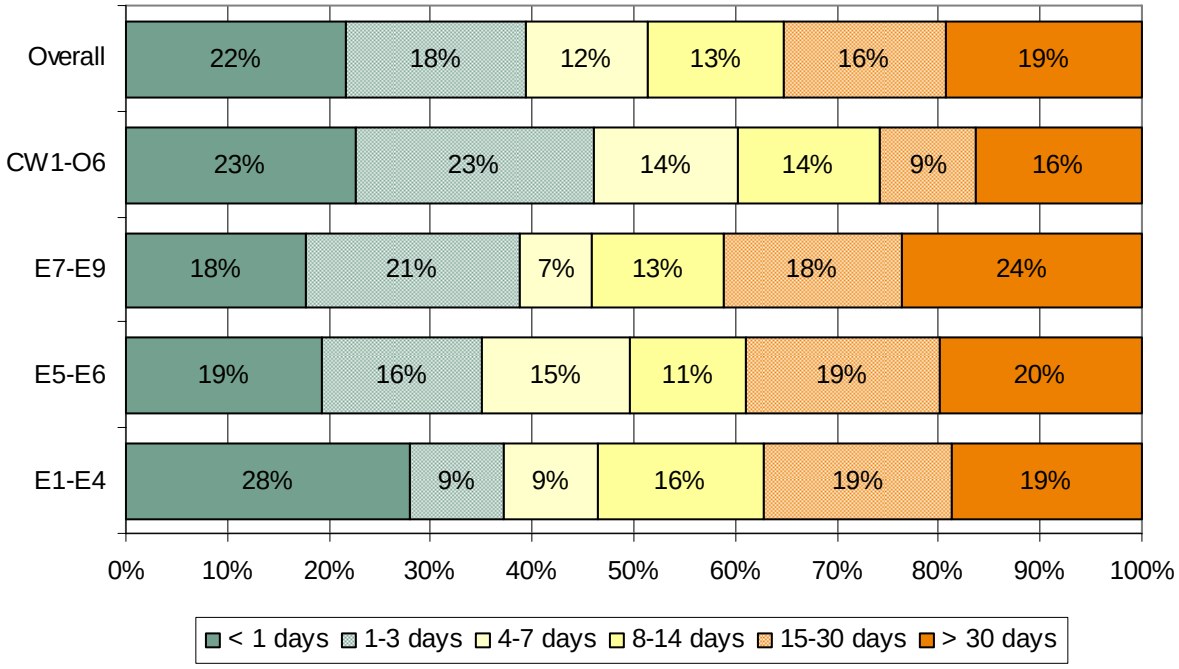


Figure 7-24 - In-Processing Survey Question / Comment 23C: *"From the time you arrived at your gaining installation, how many days did it take to complete unpacking of household goods and disposal of packing materials?" (Average 18.9 days)*

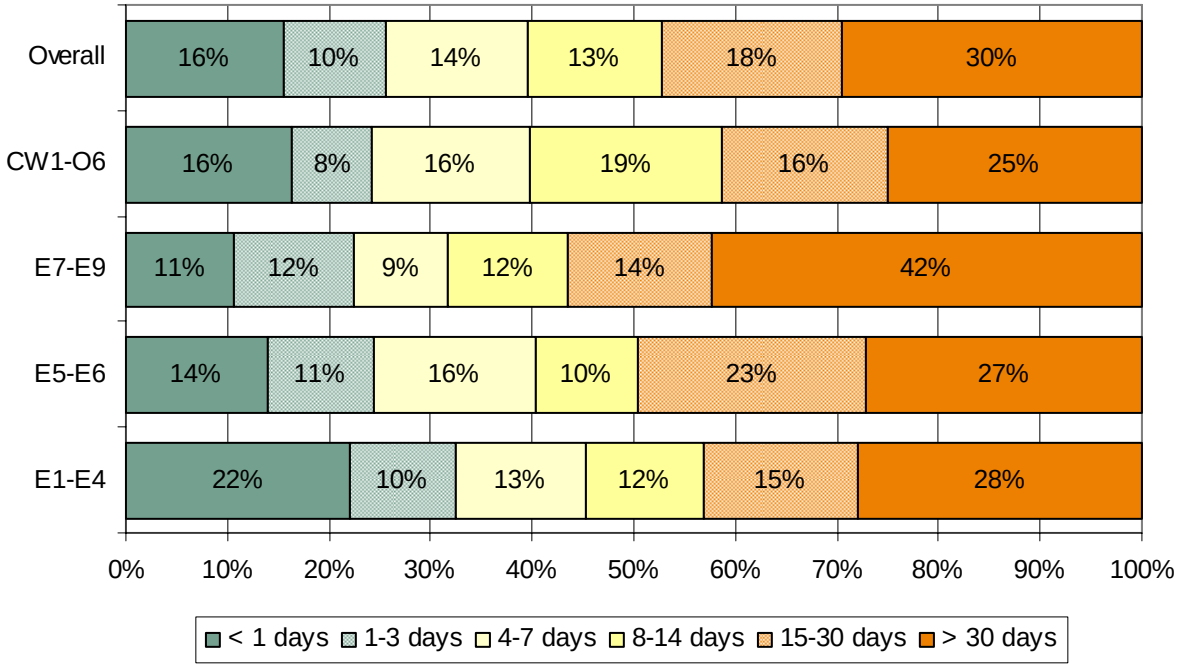


Figure 7-25 - In-Processing Survey Question / Comment 23D: *"From the time you arrived at your gaining installation, how many days did it take to complete final inspection of household goods for damages and file claim with transportation?" (Average 23.9 days)*

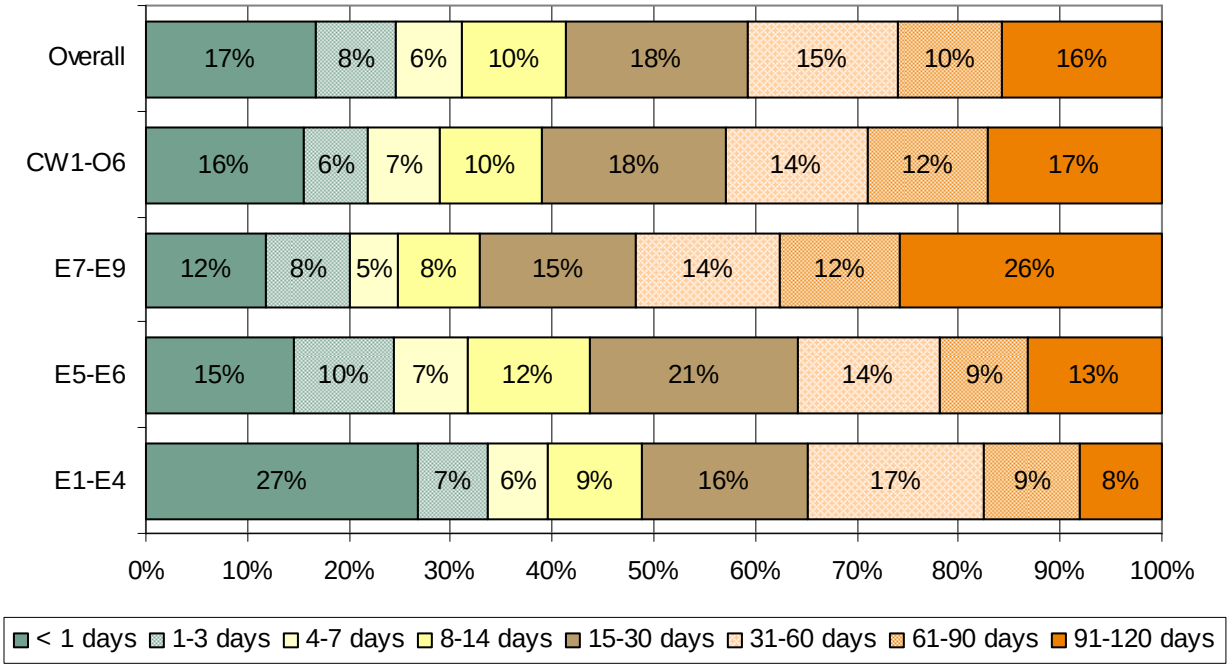


Figure 7-26 - In-Processing Survey Question / Comment 24: *"I in-processed CIF:"*

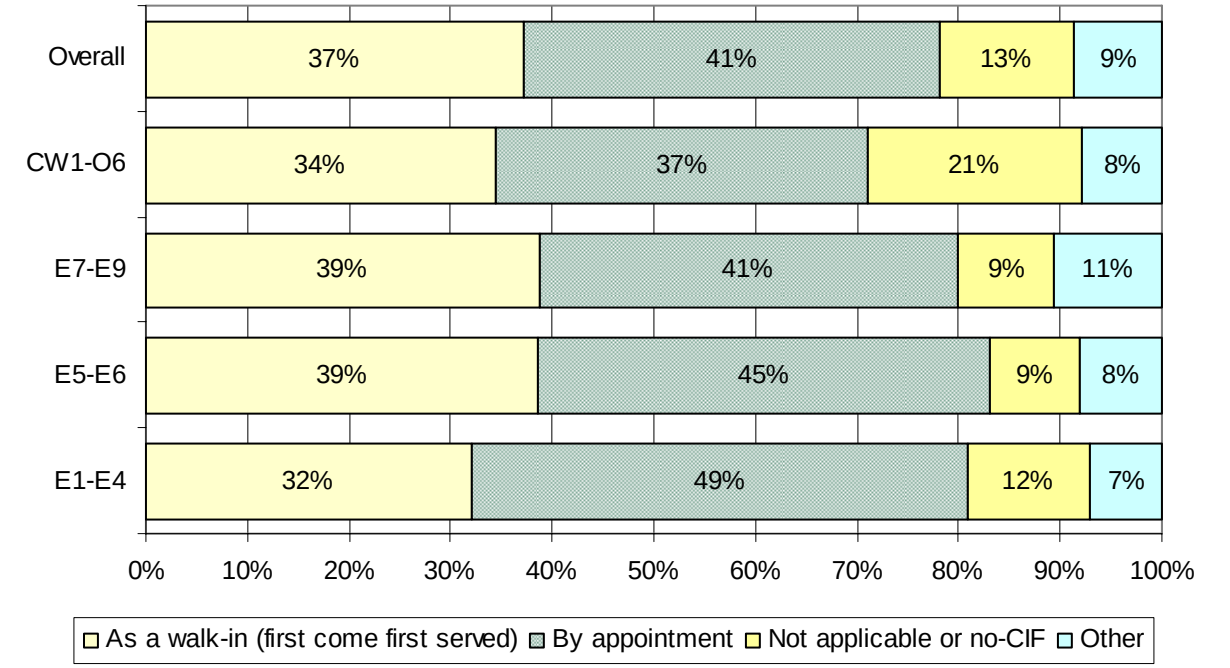


Figure 7-27 - In-Processing Survey Question / Comment 25: *"How much time did it take to in-process CIF and receive your equipment?" (Average 1.3 days)*

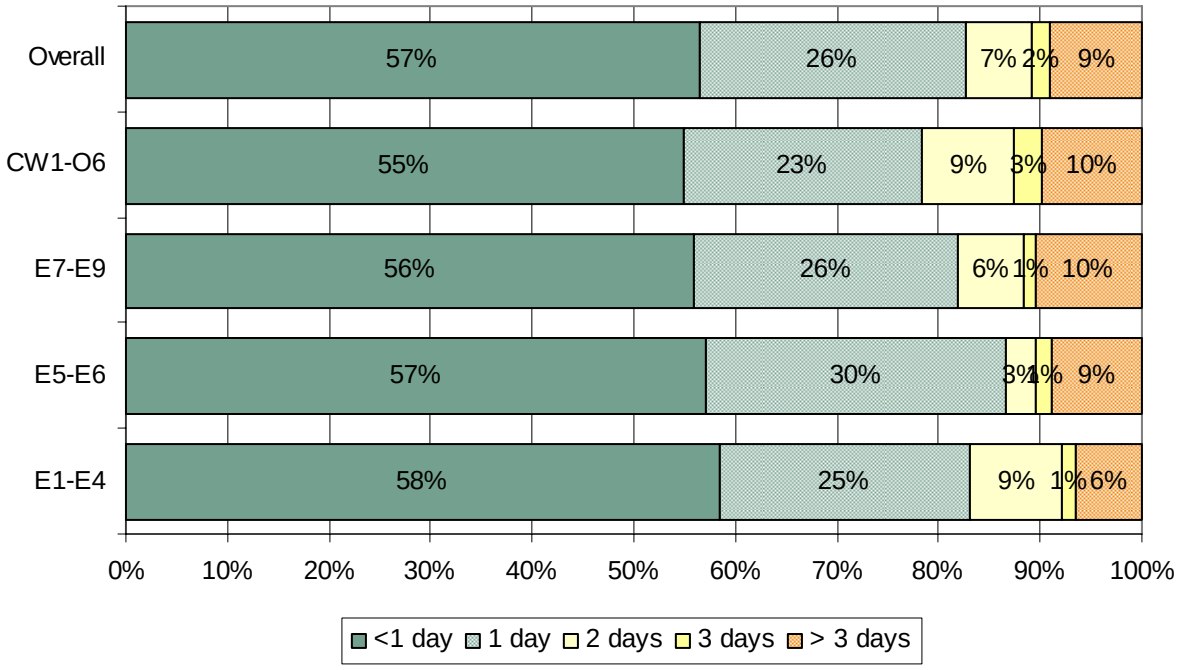
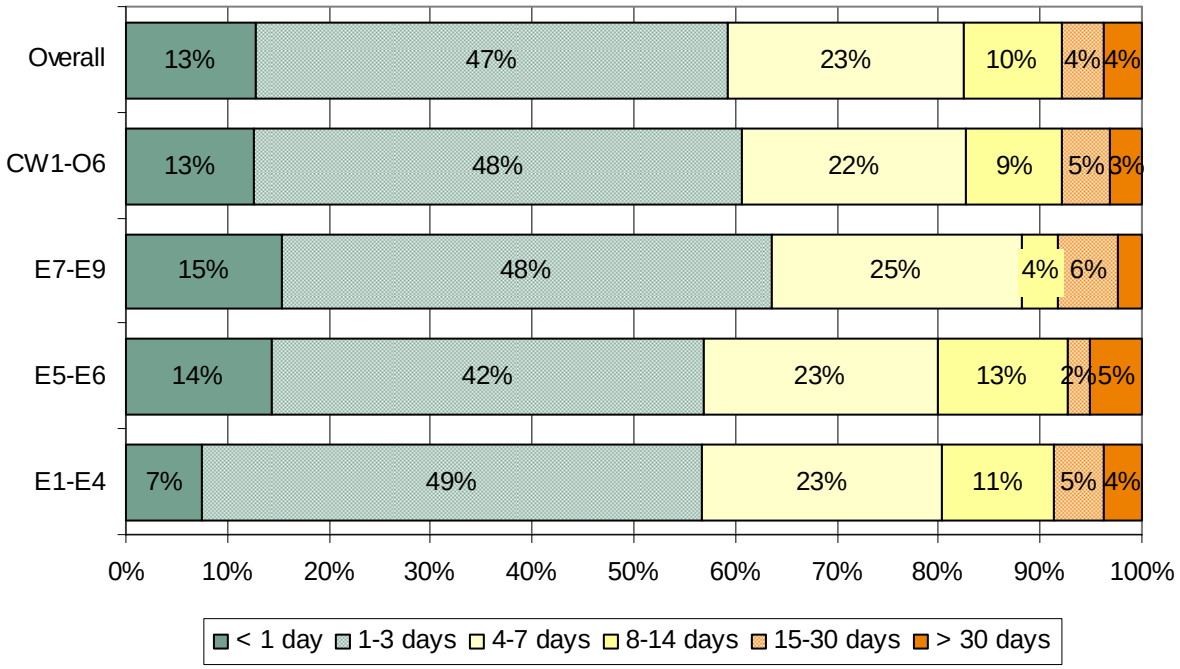


Figure 7-28 - In-Processing Survey Question / Comment 27: *"How much total time did it take to in-process the "other" organizations (i.e., ACS, MWR, Medical, Dental, Finance, etc.)?" (Average 5.4 days)*



8. Appendix C – Process Maps

Figure 8-1 – Housing Out-Process (1 of 1)

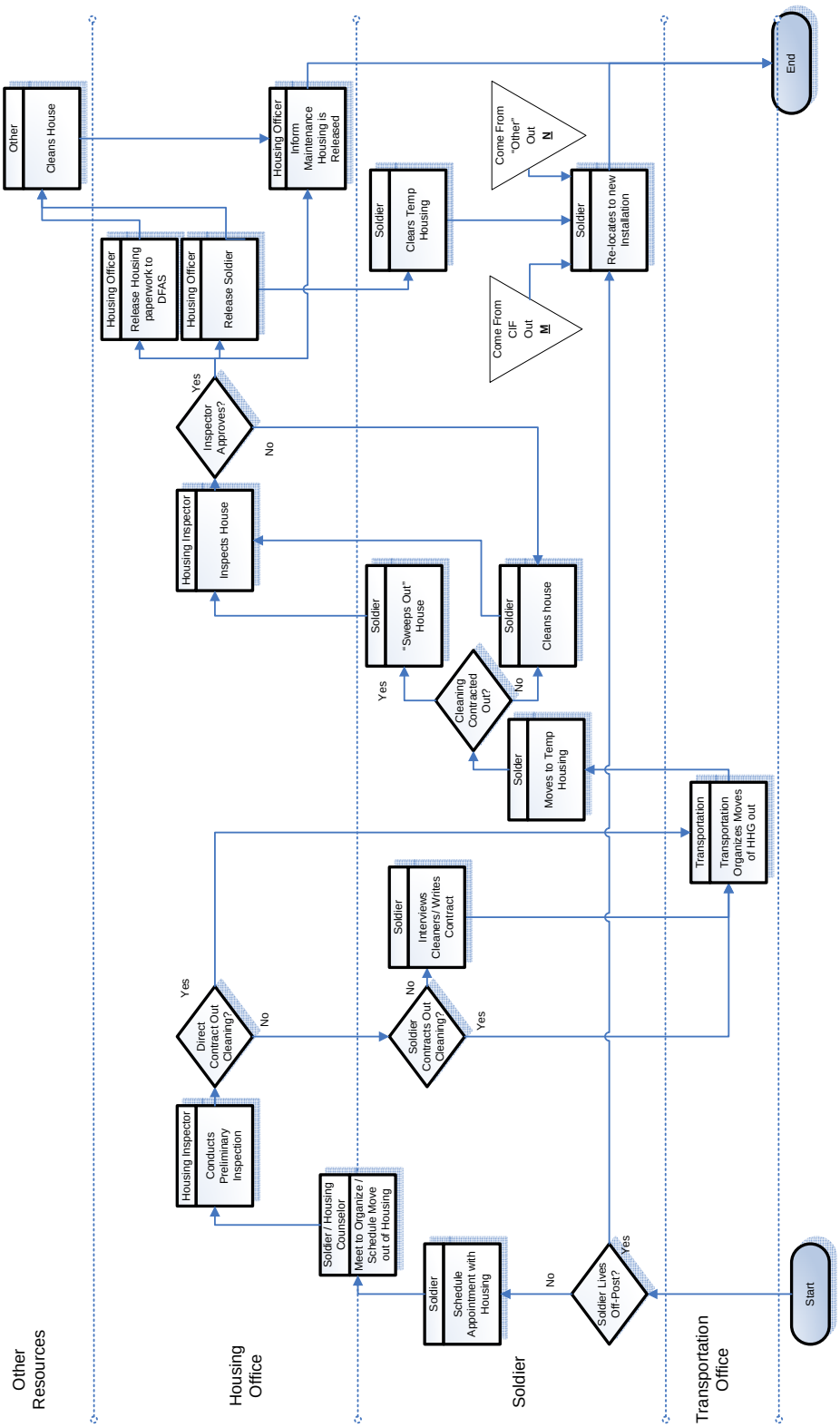


Figure 8-2 –Transportation Out-Process (1 of 1)

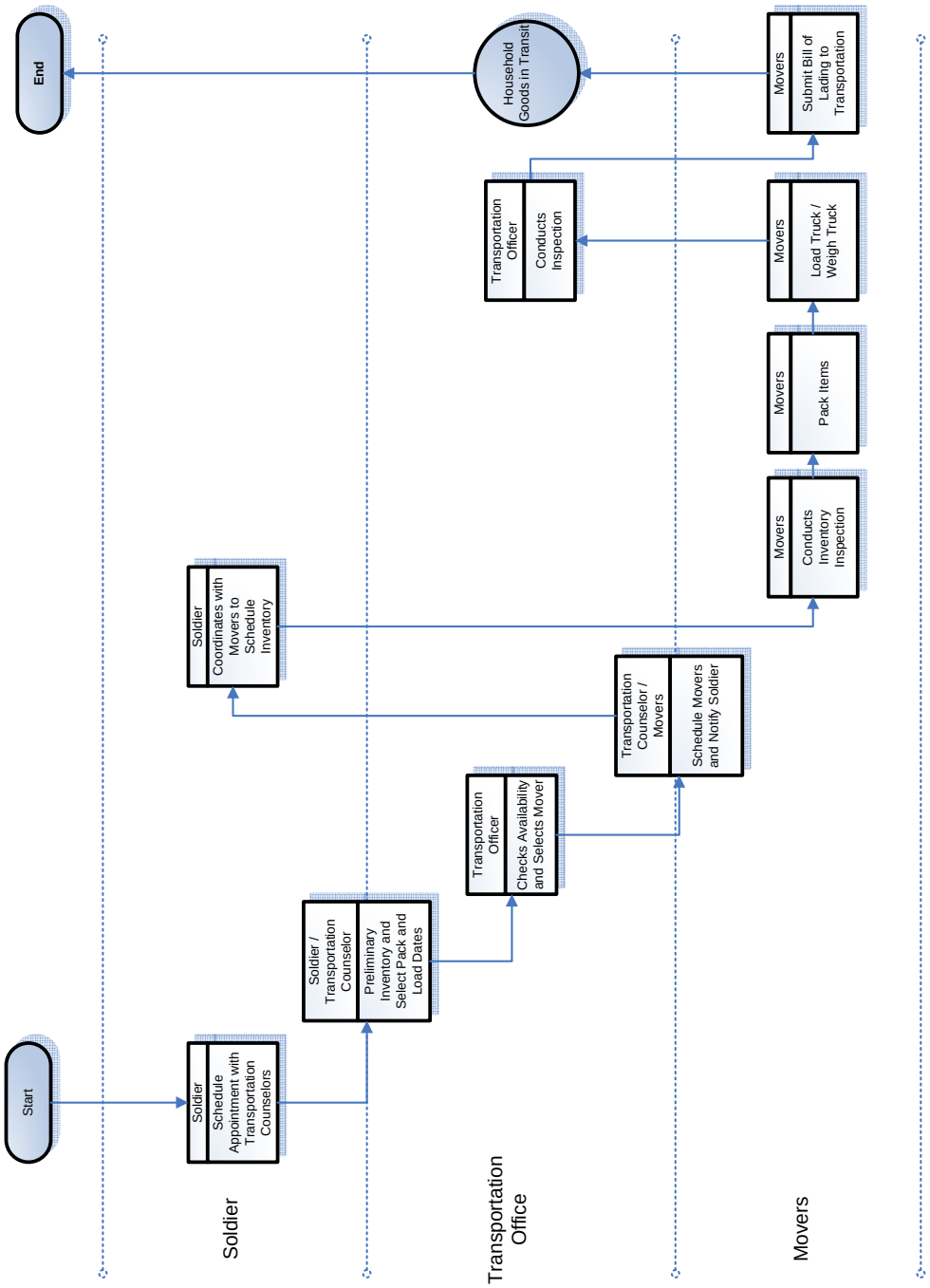


Figure 8-3 –Housing Maintenance Out-Process (1 of 1)

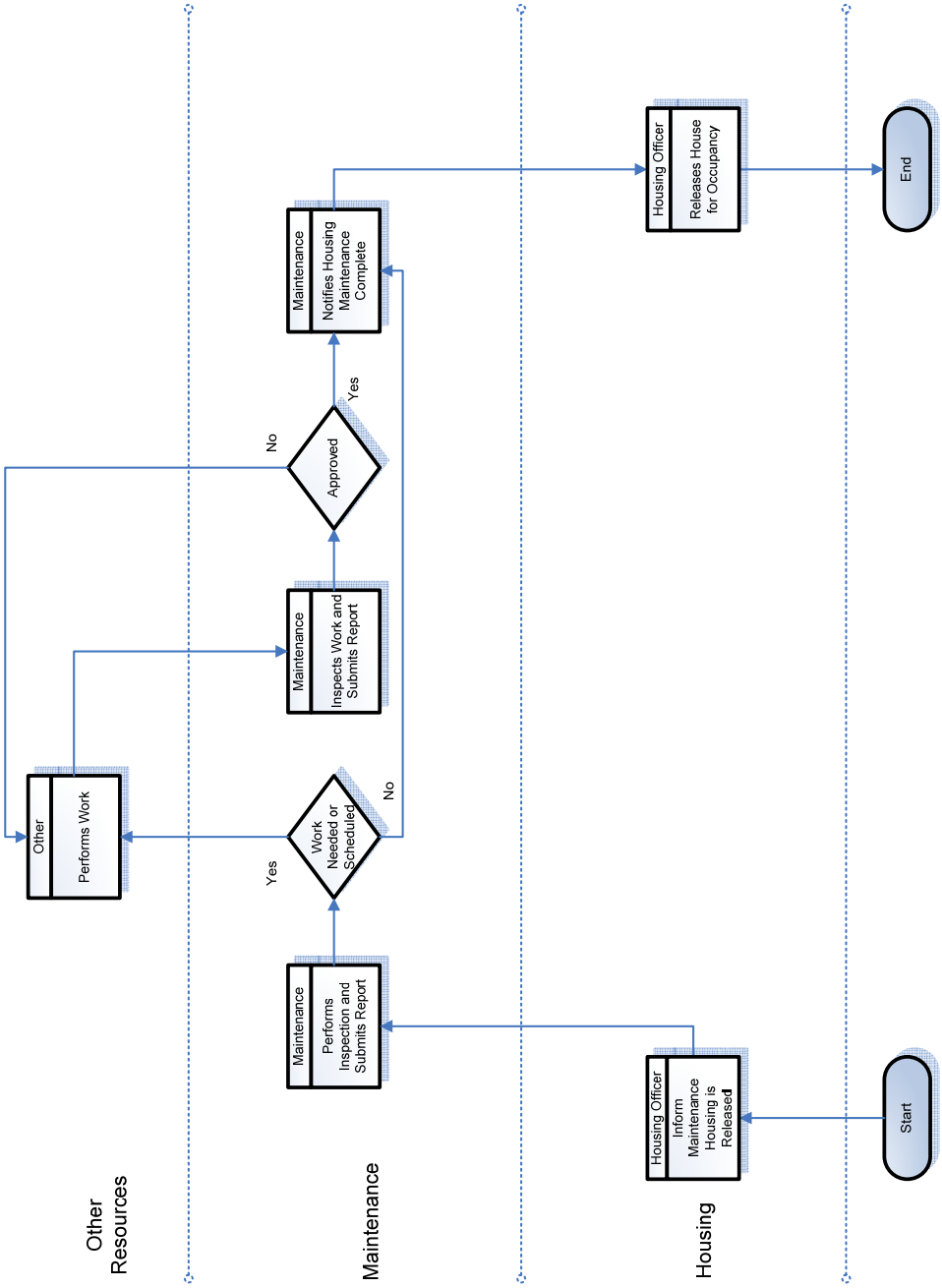


Figure 8-4 –CIF Out-Process (1 of 1)

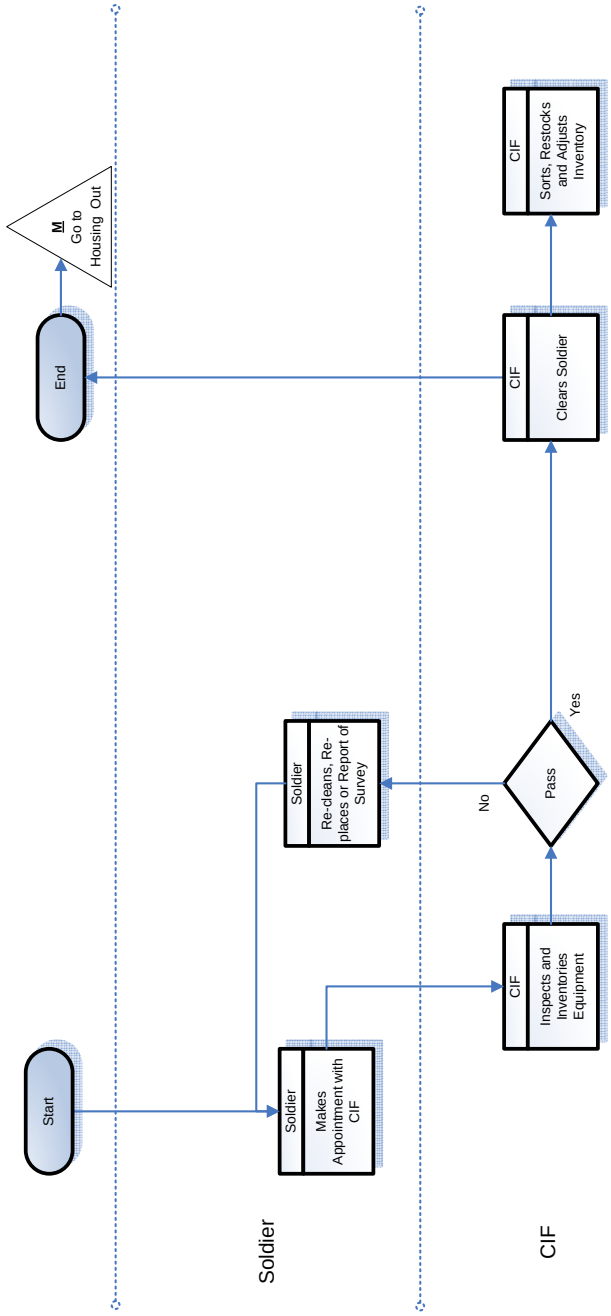


Figure 8-5 –Other Out-Process (1 of 1)

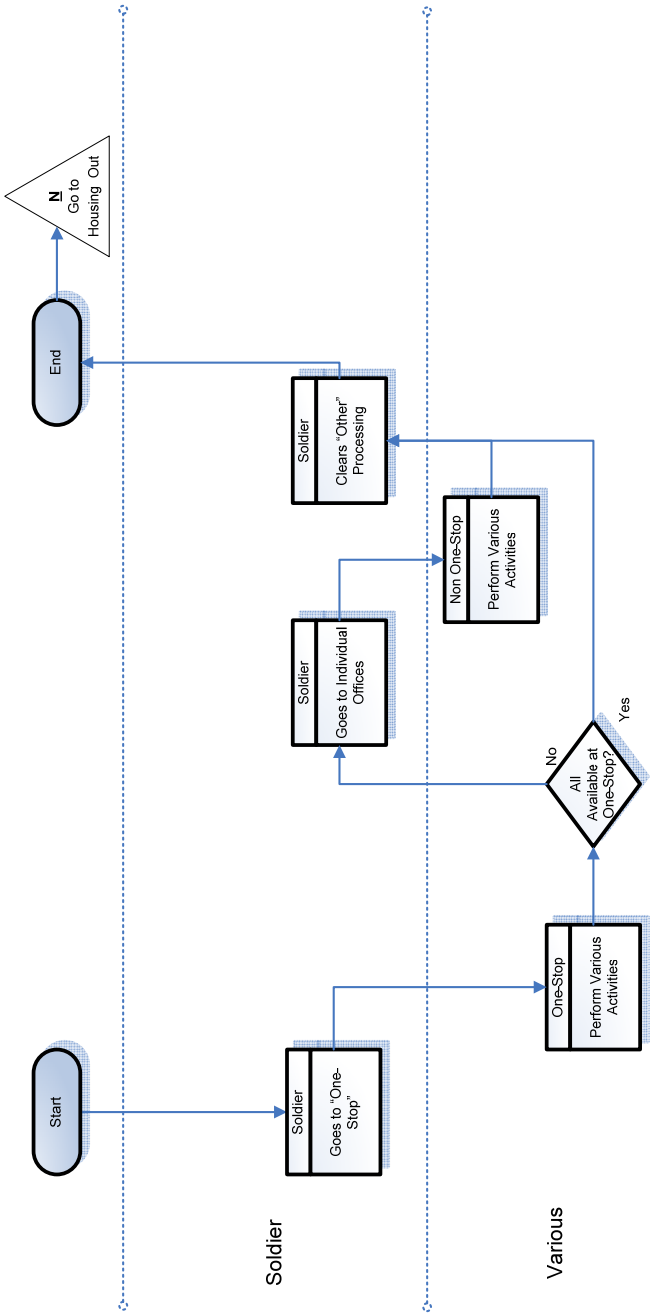


Figure 8-6 –Transportation In-Process (1 of 1)

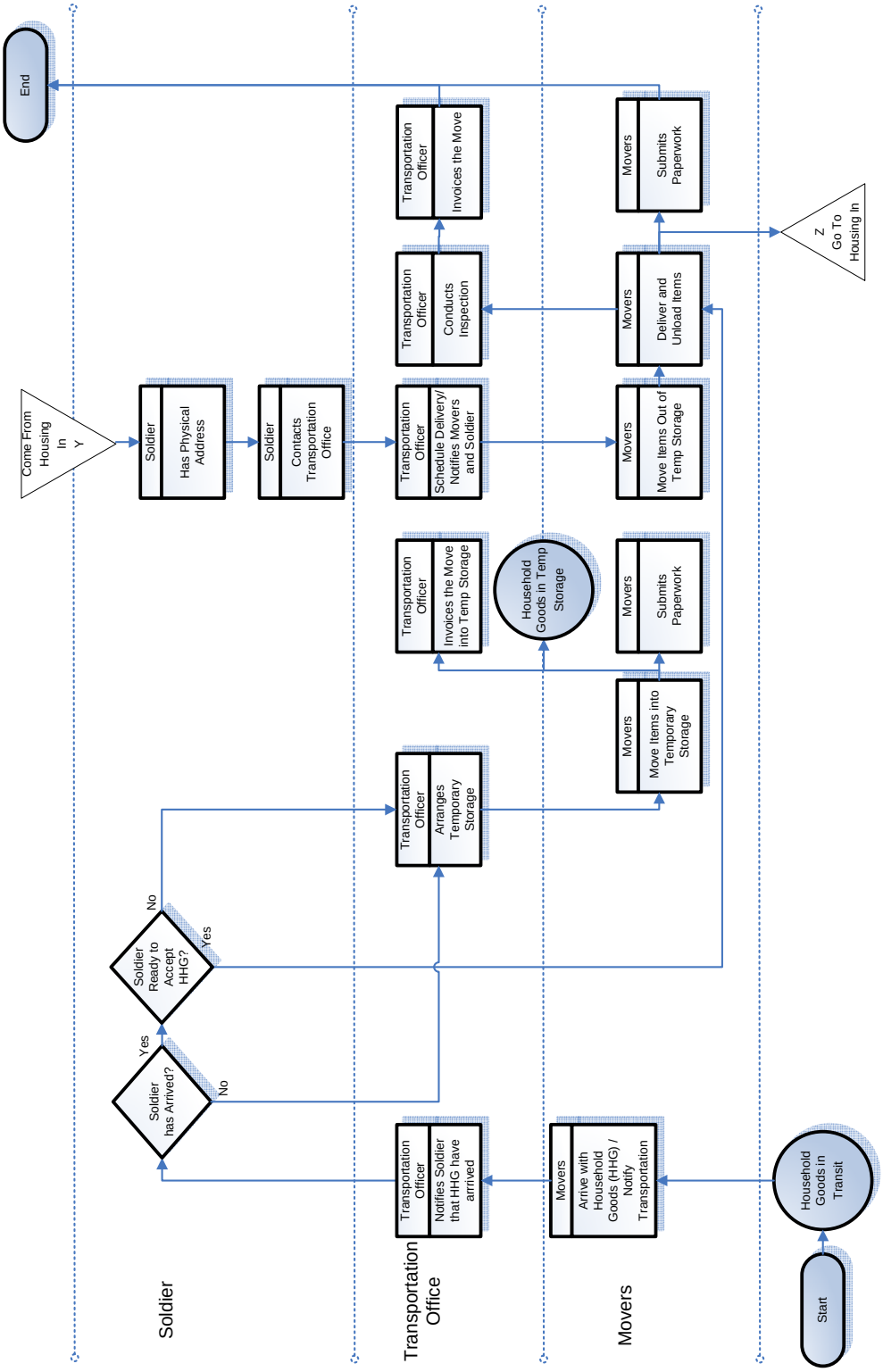


Figure 8-7 –Housing In-Process (1 of 1)

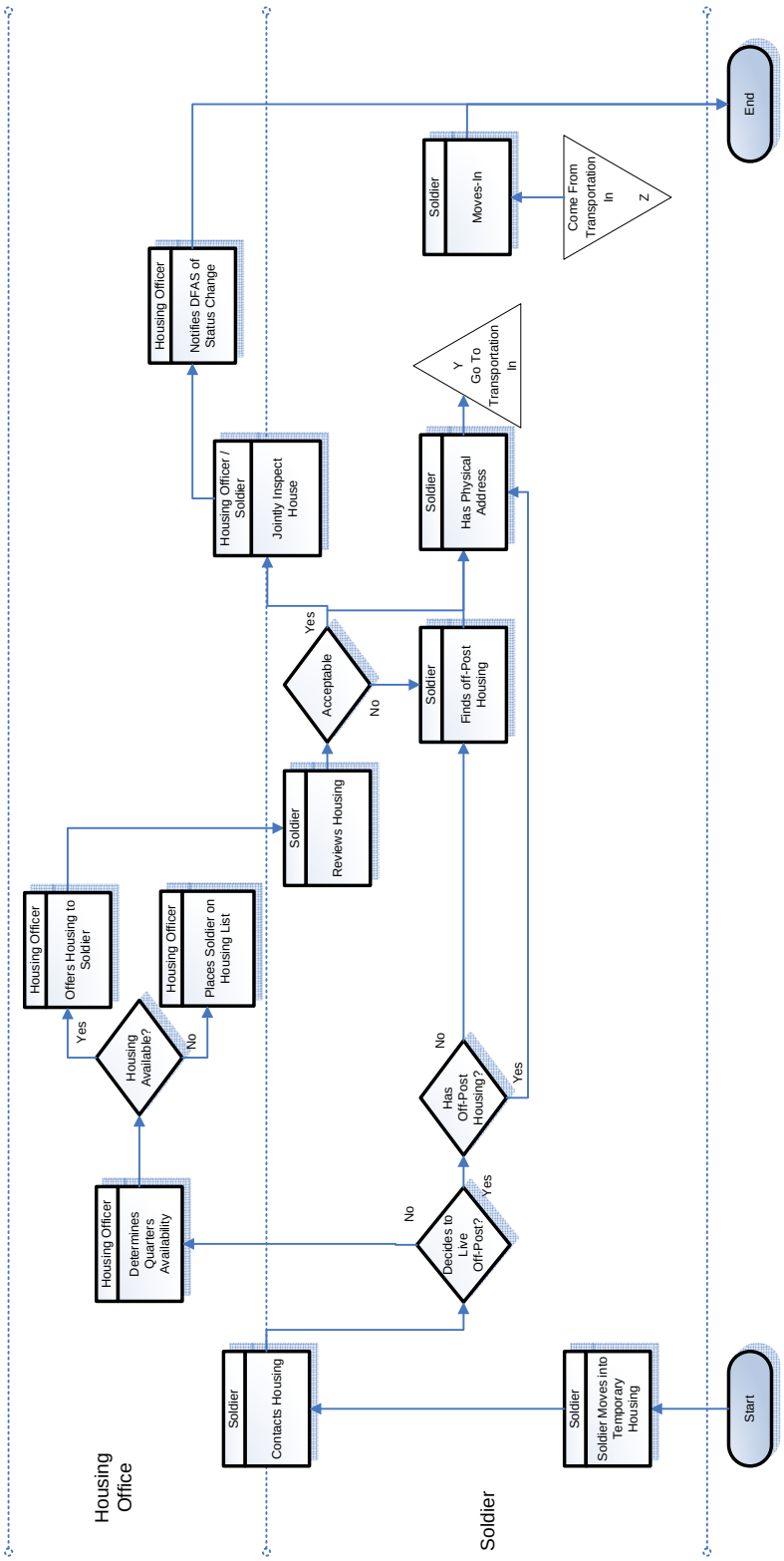


Figure 8-8 –CIF In-Process (1 of 1)

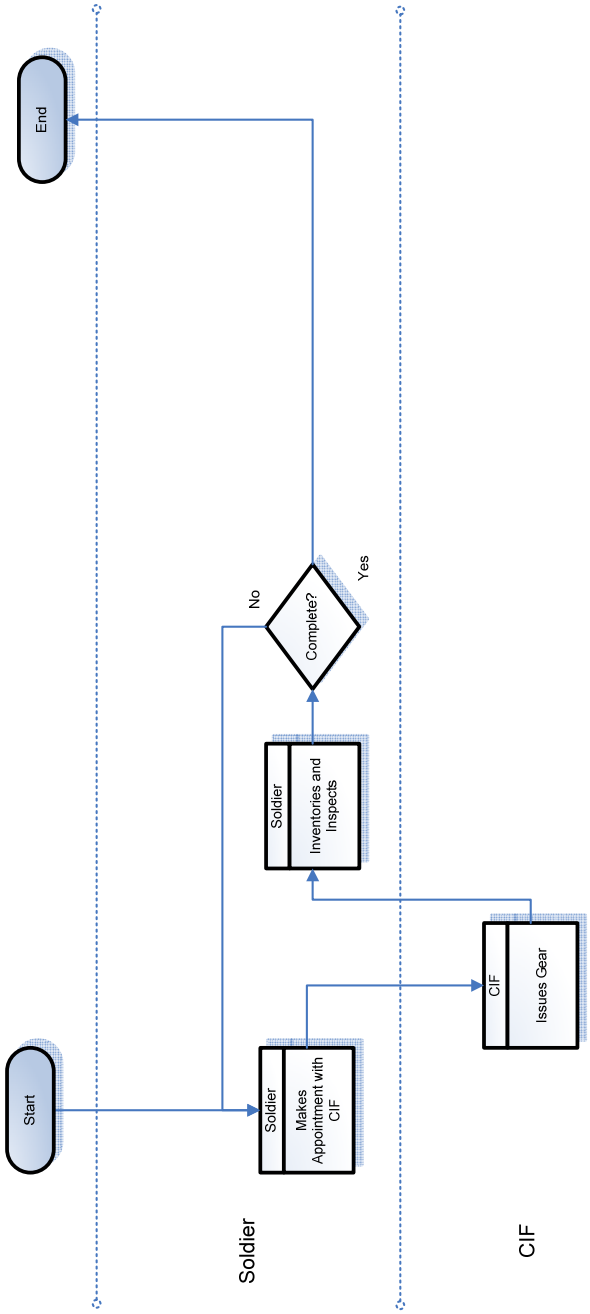


Figure 8-9 –Other In-Process (1 of 1)