Validation Report for PEV4, PEV6, and PEV7

Presented to the Defense Manpower Data Center (DMDC)

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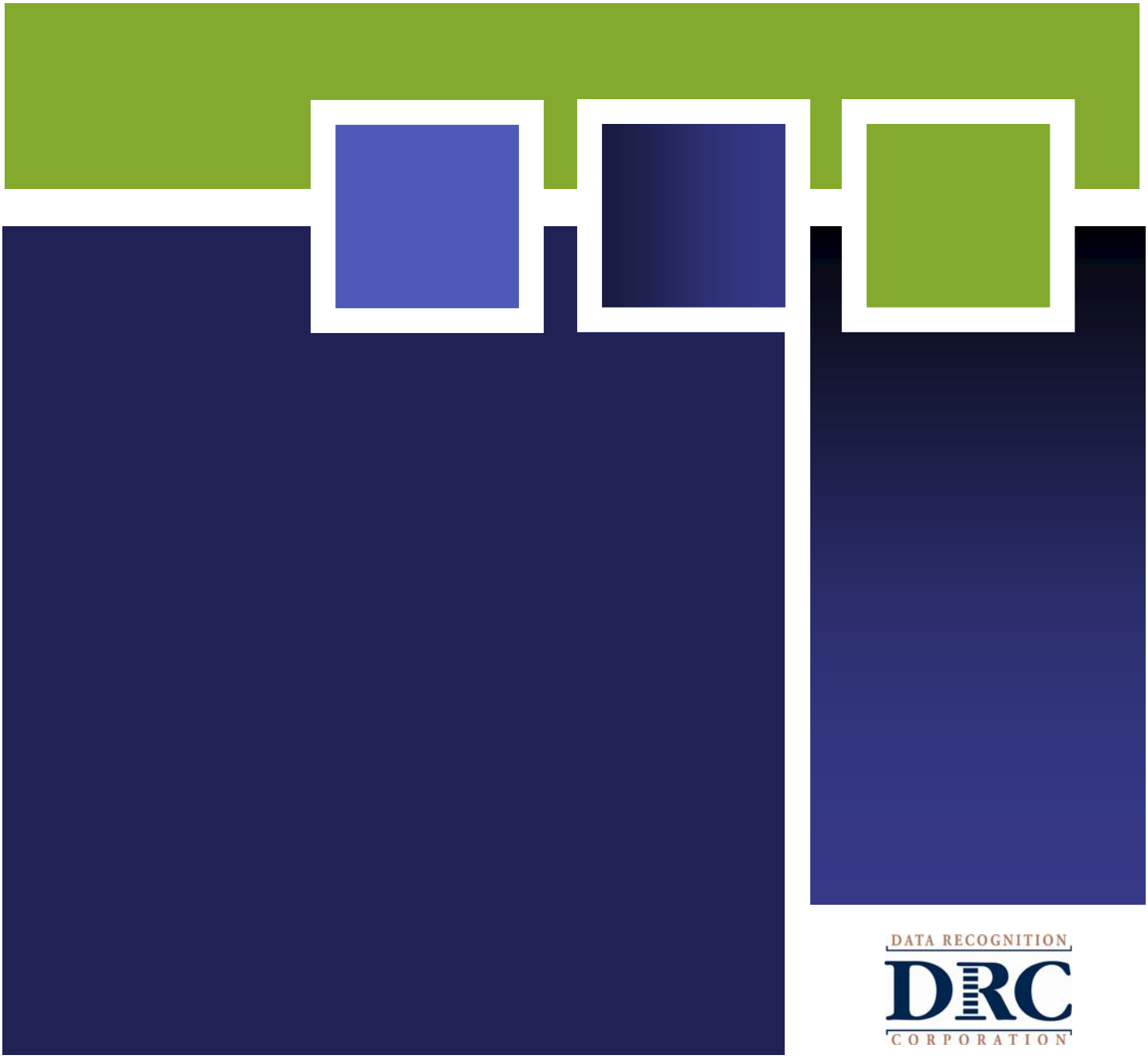

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Executive Summary of Validation Plan

This is a summary of the plan to validate results from three post-election voting surveys conducted by DRC for the Defense Manpower Data Center (DMDC). The plan was submitted to DMDC on January 28, 2013. Errors in delivering some survey material to chosen sample members has motivated this investigation.

2012 Post-Election Voting Survey of Unit Voting Assistance Officers (PEV4)

Issue

Survey PEV4 sent mail to the commanding officer and the unit voting assistance officer. Correctly matched invitations yielded 739 responses. The postal reminder was sent with a mismatch between 6,033 out of 6,477 pairs of officers.

Work Done

DRC utilized ticket numbers, the pairing of ticket numbers, calls received by the Survey Call Center, and the survey results to match survey records to the sample. Out of 2,444 total survey returns, 51% are validated to the unit level, 95% are validated to the service level, and 5% are unknown. For analysis at the service level, statistical bias is expected to be of little concern.

Plan for Additional Work

- Compare response rates across services in 2012, 2010, and 2008.
- Compare correctly matched valid responses (n=739) to responses after incorrectly matched first reminder (n=1,705).
- Compare response distributions at the service level in 2012, 2010, and 2008.
- Split respondents into those matched at the service level only and those matched at both the service and unit level. Compare them on variables collected in the survey.
- If there is interest in increasing match rates at the unit level, then it will be necessary to utilize more information on the sample members and/or conduct a short follow-up survey.

2012 Post-Election Voting Survey of Department of State Voting Assistance Officers (PEV6)

Issue

Survey PEV6 sought to gather information from all 240 Department of State voting assistance officers. Ninety-six (96) responses came from the initial contact. Reminder 1 emails for PEV6 VAO were sent to an incorrect email address.

Work Done

All returns (n=96) collected prior to the reminder 1 email are valid. All but 9 records out of 217 can be matched to country. Of the 9 records, 8 provided no useful information and one was a duplicate. 179 out of 240 (75%) respondents match on both post and country. 208 out of 240 (87%) respondents match on country. Given the high level of matching, the potential for statistical bias due to the email problem is small.

Plan for Additional Work

- Compare response rates in previous surveys to current response rates.
- Compare response distributions in the 96 original correct respondents, in the 83 correct matched respondents, and in the 29 respondents with country only.
- Compare response distributions in this survey to those in the previous survey.

2012 Post-Election Voting Survey of Military Spouses (PEV7)

Issue

A total of 9,316 announcement emails were sent for PEV7. Most email invitations were incorrectly sent to the military member's email. Salutations and directions were correct.

Work Done

Only 2% of respondents (18 of the 859) cannot be confirmed as qualified member spouses. These 18 respondents could be spouses, not married to an active duty member, or were members trying to complete the survey. Both were accurately eliminated by the screening question. If they were members, who did not pass the survey to their spouse, 18 spouse interviews could have been potentially missed. Had 18 additional spouses responded, estimates of proportions would have been unlikely to change by more than 1% and margins of error would have changed by less than a tenth of a percent.

Plan for Additional Work

- Confirm that only member spouses completed the survey. The number and percent of such cases and the potential impact will be reported.
- Compute response rates for the group sent email correctly and for the group with email sent to the service member.

- Compare characteristics and responses of spouses who were and who were not sent email correctly.
- Compare response rates and distributions to those in 2010.

Management of Validation Activities

DRC understands how important it is to give DMDC confidence in the validity of the data we have provided and to arm them with that information before they prepare their report to Congress. With that in mind, we assembled a team of internal experts to work on the validation, augmented by two external consultants. The organization of our team and their qualifications are summarized below.

Staffing

Two independent experts agreed to work with DRC on the validation of the studies. They are both highly qualified. Each brings a slightly different perspective to ensure that we have covered every possibility.

Michael Larsen, Ph.D., who received his doctorate in statistics at Harvard University, will perform statistical analyses on potential sources of bias. Dr. Larsen is a tenured associate professor of statistics at The George Washington University. He teaches graduate-level survey sampling theory and methods and serves as the department liaison to GW's Graduate Certificate Program in Survey Design and Data Analysis. Previously he was on faculty at Iowa State University and the Center for Survey Statistics and Methodology. Dr. Larsen has been elected three times to positions in the American Statistical Association's Survey Research Methods Section, including the program chair for the section in 2012. Dr. Larsen has worked on surveys for the U.S. Department of Agriculture, the U.S. National Center for Health Statistics, Iowa's Department of Education, as well as at the U.S. Census Bureau. Through these experiences, Dr. Larsen has become an expert in complex sample design, weighting, estimation, and inference in sample surveys. He has published on record linkage, missing data, and statistical modeling of survey data. Dr. Larsen joined The Biostatistics Center at GWU in 2009. He has consulted for and collaborated with researchers at a number of government agencies, research organizations, and academic departments. At the Biostatistics Center, he researches hierarchical record linkage (NSA), workforce dynamics of the scientific and engineering workforce (NIH), and missing data problems. His interests include survey sampling, missing data, record linkage and administrative records, disclosure limitation and confidentiality, Bayesian statistics, hierarchical and mixture models, and statistical modeling of complex data.

Diana Davis, Ph.D., is a sociologist with more than 30 years of experience directing large federal surveys for clients such as the U.S. Census Bureau and TRICARE. She has previously conducted studies of voting behavior. She will provide the perspective of a senior survey director/analyst in helping identify potential sources of error and understanding what types of evidence will provide the confidence needed. She obtained her doctorate from the University of Pennsylvania.

DRC's internal validation team is composed of the management team, the quality assurance team, and our senior research directors.

Management Team

***Elaine Cardenas**, Vice President, Survey Services*, has directed large federal contracts for more than 30 years and has worked in senior roles for Abt Associates, TNS, and Gallup. She heads the Survey Services Division at DRC and is based in the company's federal office in Washington, D.C. Elaine holds an M.B.A. and will defend her doctoral dissertation in April 2013.

***Valerie Waller**, Senior Managing Director, Survey Services*, brings 22 years of program management and research consulting experience to her position. Ms. Waller oversees all aspects of the survey research process, including questionnaire design, operational services, data analysis, and final reporting. In addition, she administers all project timelines, budgets, resource allocation/management, and performance systems and takes a proactive role in process-improvement efforts and quality control initiatives. Ms. Waller holds a B.S. degree and completed graduate coursework in Industrial/Organizational Psychology.

Quality Assurance Team

***Lisa Peterson-Nelson**, Chief Quality Officer*, has an engineering and operations management background spanning over 25 years across several Fortune 100 corporations. At DRC, she directs the enhancement of key work processes for delivery of products and services to clients. She serves as the internal auditor of all quality processes and risk management plans for the company's current educational assessment clients. Since 2007, Ms. Nelson has been leading DRC's efforts to achieve ISO Certification, which has been accomplished in several operational areas of the company. She holds an M.S. degree in Operations Management.

***Niall Finn**, Senior Director of Quality, Operations*, is a quality leader responsible for leading the implementation of ISO 9001 Quality Management System certification across all DRC operational areas. He brings extensive hands-on quality management experience to DRC from several manufacturing environments, including a long tenure with Steelcase Inc. Mr. Finn holds a Master of Management degree.

Senior Research Directors

***Jack Fentress**, Senior Director of Research*, directs DRC's Design and Analysis Group, providing expert design, analysis, consulting, and practice area expertise for DRC's survey clients. He has three decades of analytical experience and has held leadership positions in government entities (Community Mental Health), corporations (General Mills) and research suppliers (Research International/TNS). He has provided research expertise to an impressive list of Fortune 100 companies, government organizations, and healthcare entities. Mr. Fentress has extensive modeling, analytic, and linkage experience across a range of applications. He holds an M.B.A. degree and an M.S. degree in Psychology.

***Marc Julian, Ph.D.,** Managing Senior, Research*, has over 17 years of research experience including serving as director of research, research manager, senior research scientist/team leader, and research scientist at multiple educational assessment companies. In his current role, Dr. Julian is responsible for designing, computing, and evaluating all traditional and Item Response Theory (IRT) statistical analyses, including defining, managing, and monitoring all analyses. His responsibilities also include producing project documentation and statistical reports; enhancing test development processes and systems; and working with research associates, statistical

analysts, and state departments of education throughout the item and test development processes. He holds a Ph.D. in Educational Measurement.

Résumés for these individuals have been included as Appendix A to this report.

Cost

All additional expenses associated with increased quality control processes and data validation due to the errors on PEV4, PEV6, and PEV7 have been borne directly by DRC. No expenses have been or will be passed onto the government. Other additional services included ticket number resets, updates to approved email texts, non-responder reports, ticket number matching reports, and field period extensions.

DRC has also provided increased services for the 2012 Post-Election Voting Survey of the Active Duty Military (PEV5) without additional cost to the government. These services were provided based on DMDC's and FVAP's need to increase response rate on this key survey. No DRC errors occurred on the PEV5 survey. Services included extension of the field period, four additional email reminders, and an additional postal reminder which included reprinting of letterhead and envelopes.

Task Order #0008 2012 Post-Election Voting Survey of Unit Voting Assistance Officers (PEV4)

Michael D. Larsen, PH.D., George Washington University, Jack Fentress, and others from DRC

Summary of Issue

On November 21, 2012, the postal reminder 1 letter for PEV4 was mailed with a mismatch between the Commanding Officer letter and the Unit Voting Assistance Officer (UVAO) letter. DRC mailed 6,477 letters; 6,033 letters were incorrectly matched. All letters to the Commanding Officer were correct; however, the envelopes addressed to the Commanding Officer contained the wrong Unit Voting Assistance Officer (UVAO) letter.

Summary of Main Results

Utilizing matching processes described in detail later in this report, 51% of returns were matched to the individual unit (record) level. Meanwhile, 95% of survey returns are now validated to the service level. Only 5% of total returns could not be matched to at least service.

No concerns were raised by comparing 2012 results to 2008 and 2010. This is true for response rates, response rates by service, and response distributions.

Some statistical differences were found in comparing subgroups of the 2012 data, where subgroups are defined by error or matching status. Despite the statistical significance of the differences, differences are small in magnitude and partially accounted for by non error factors. Some differences are associated with service. These differences can be minimized in analysis by weighting by service and conducting analyses within service. Other factors, such as the inherent tendency of some respondents to respond earlier versus later, likely are related to additional differences. These factors influence response distributions in any survey.

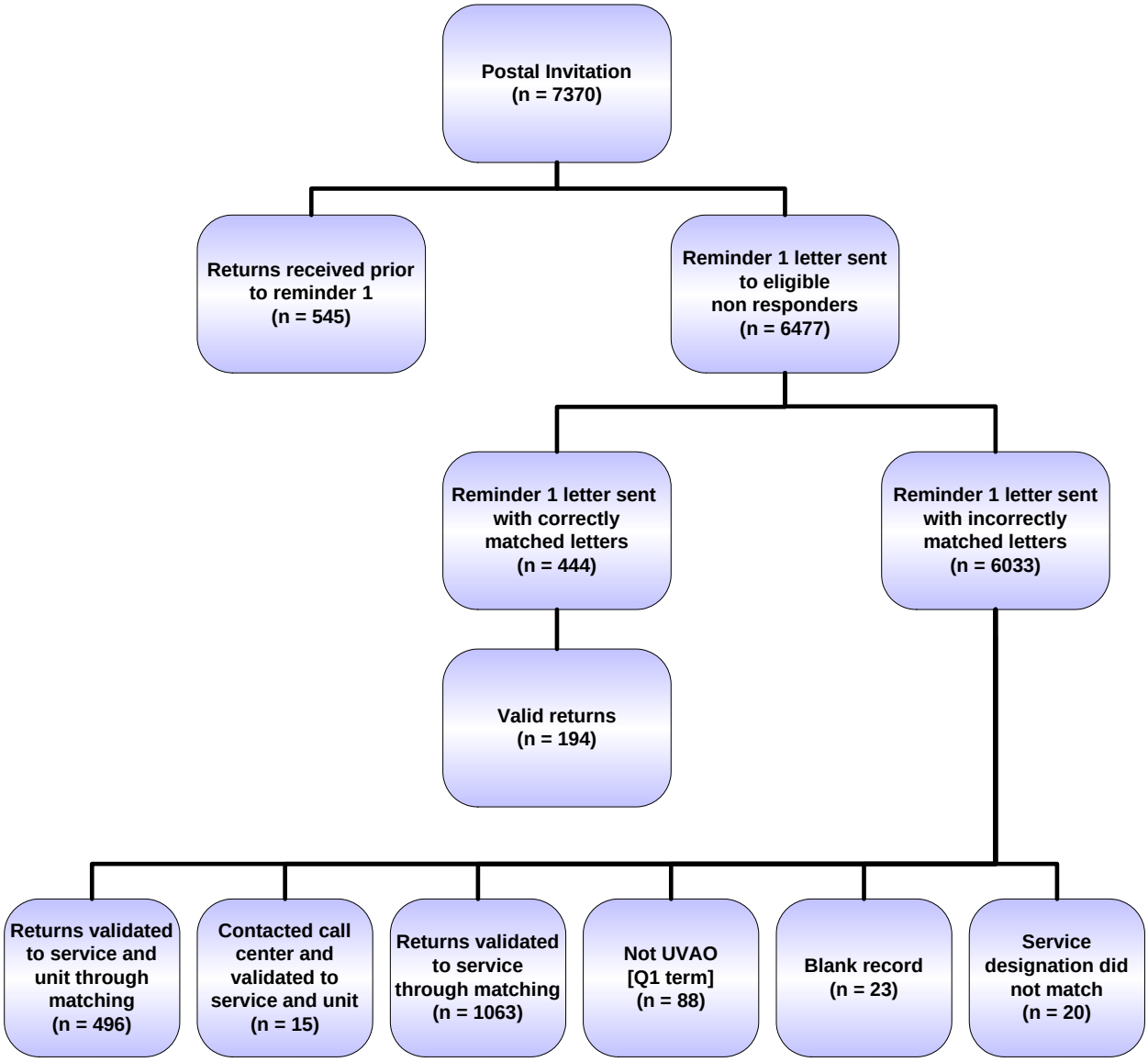
In summary, the data collected in PEV4 should be representative of the target population. Valid conclusions should be reached by conducting analyses with survey weights and within service.

SECTION 1. RESPONDENT DISPOSITION METHODOLOGY AND RESULTS

Analysis for this section was conducted by DRC and reviewed by Michael Larsen, Ph.D., Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Respondent Disposition Overview

The following is an overview of respondent disposition. Details specific to process and procedures follow.



Respondent Disposition Specifics

DRC utilized ticket numbers, the pairing of ticket numbers from the November 21 reminder 1 mailing, calls received by the Survey Call Center, and the survey results to match survey records to the sample. This analysis was conducted on the immediate dataset created February 12, 2013.

Matching Overview (Matching details follow)

- Every UVAO return can be matched to the Commanding Officer(s) to which a ticket number was sent. "Litho #" (unique codes) tie all pieces of the mailing to their destination.
- When a Commanding Officer received a ticket # (part of the Unit solicitation packet), they were correctly instructed to which specific unit they were to distribute the packet. Therefore, it is known where each ticket # went and which specific units could have responded to a specific ticket #. There is a maximum of two units that could have received any one ticket number (the unit that received it as a result of a correct mailing and the unit that received it as a result of the error mailing) for all except 12 UVAO letters. The 12 exceptions have a maximum of three units that could have received the ticket number.
- Matching returns to one of the two alternative units was attempted with a two-step process. Q2 on the survey asks "service." "Service" is also in the sample file. If the two alternative units had different "service" in the sample file, the return can be directly matched with the like-service record. If the sample file had the same "service" for the two possible records, a specific record could not be matched. Step 2 considered Q8 on the survey [Were you stationed in the U.S. (including U.S. territories) or overseas?]. Location is available in the impacted records file and if different for the two possible records (U.S. or Overseas), the return can be correctly matched.
- 51% of returns were effectively matched to a specific record (unit) as a result of returns where there was no (mismatch) error (31%) or using this matching approach (20%). Since the creation of the analytical file for Dr. Larsen, an additional 20 records have been matched (14 to service; 6 to service and unit). In order to maintain consistency between the various analyses, these 20 records are being kept separate in this discussion.

Summary of Findings

Survey Return Status	Count	Percent
Total survey returns	2,444	100%
Validated to unit level on basis of error flag = 0 (no errors on these mailings or returns received prior to the error mailing)	739	30%
Validated to unit level on basis of service or geography	496	20%
Validated to unit level—Contacted Survey Call Center (respondent requested new ticket # and returns could be correctly matched)	15	1%
Validated to service level on basis of service (a final match could not be determined)	1,063	43%
Screened out on basis of not assigned as a Unit Voting Assistance Officer (terminated at Q1)	88	4%
Did not answer Q1 and Q2 (opened survey, but completed nothing)	23	1%
Service designation initially did not match: *Since, validated to unit* *Since, validated to service*	20 *6* *14*	1%

***Validated to unit level on basis of error flag = 0*:** The initial mailing was fielded correctly and returns received prior to the error mailing are valid. In addition, 444 of the 6,477 reminder 1 mailings were correctly fielded. Returns from these mailings are also valid.

***Validated to unit level on basis of service/geography*:** Using the self report service designation (Q2) and geographic location (Q8) on the results data file and the service designation and geographic location of the ticket pairs on the sample file, 496 survey returns were validated to the unit level on the basis of service and/or geography.

Validated to service on basis of service/geography: Using the self report service designation on the results data file and the service designation of the ticket pair on the sample file, 1,063 survey returns were validated to the service level. That is, the self report service designation on the results data file matches the service designation for each ticket of the ticket pair on the sample file. In addition, the ticket pair had the same geographic status. In order to validate these survey returns to the unit level, it would be necessary to collect additional information using a follow-up survey to differentiate between the two potential units associated with a survey return.

Contacted Survey Call Center: There were 15 respondents who contacted the Survey Call Center because the ticket number they were attempting to use to take survey had already been used. DRC issued a new ticket number to the respondent and recorded to which unit the new ticket number was assigned.

Using the ticket number which was replaced, the researcher reviewed the impacted records and sample file to validate the unit and service. The ticket number the UVAO was attempting to use may have been the original ticket number for their unit, or it could have been the different ticket number they received in the reminder 1 mailing.

Screened out on basis of not assigned as a Unit Voting Assistance Officer: There were 88 respondents screened out of the survey for answering no to Q1. DRC is not able to determine the service because Q2–Service was not asked of these respondents.

***Did not answer Q1 and Q2*:** There were 23 respondents who did not provide an answer to both Q1 and Q2–Service.

- 21 respondents answered some Likert survey items before submitting the survey.
- 1 respondent answered some Likert survey items and pressed the "Save and Come Back" button.
- The remaining 1 respondent answered about 24% of the survey and closed the browser window without saving the survey.

***Self reported service designation did not match*:** The response to Q2 provided by the remaining 20 respondents did not match the service designation in the sample file. At the time the analysis file was sent to Dr. Larsen, these 20 records required further evaluation. These records have since been validated to the service level on the basis of their response to Q2. In addition, results of a manual evaluation indicate 6 of the 20 records can also be validated to the unit level. These records will need to be appropriately coded in the final dataset, but their re-association is being deferred at this time to retain analytic consistency.

In sum, 51% of the survey returns are validated to the unit level. Meanwhile, 95% of the survey returns are now validated to the service level; 5% are unknown.

With regard to location (U.S. vs. Overseas), the survey returns validated to the unit level (51%) have a known, specific state location. The survey returns only validated to the service level (44%) have also had their location status confirmed to distinguish between U.S. and Overseas.

Matching Details

- A unique ticket number was assigned for each unit in the sample.
- The initial mailing to Commanding Officers was correct. Unit Voting Assistance Officer (UVAO) received the original ticket number at this time.
- The Commanding Officer's letter in the reminder 1 November 21, 2012 postal mailing was correct. They were correctly instructed to which unit each of their UVAO packets was to be distributed. However, the UVAO letter inserted in the envelope was for a different unit. The targeted UVAO received a different ticket number at this time.
- DRC knows the units to which ticket numbers were mailed in each of the 6,033 error envelopes. A unique number (Litho) was defined for each envelope and used to match the Commanding Officer letter and UVAO letter for insertion. The litho number was printed

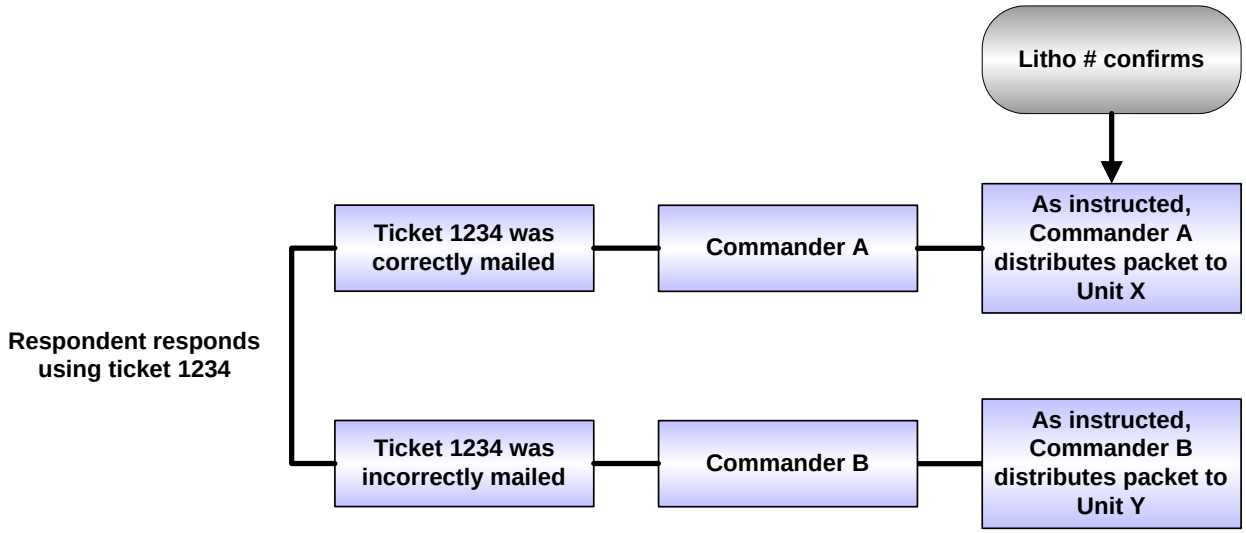
at the bottom of each letter. This litho number can be used to link (i.e., pair) the ticket numbers, associating the ticket number on the UVAO letter inserted in the envelope with the ticket number of the unit to where it was mailed (reminder 1 mailing recipient).

- There were 12 occurrences of a UVAO letter being mailed to two recipients as a part of the reminder 1 mailing. Survey returns from this subset were evaluated manually against both ticket pairs.
- Subsequent reminder mailings to non-respondents were correctly matched. The UVAO received the original ticket number in these mailings.
- Acknowledgement: The matching process assumes that if a UVAO was replaced, they were replaced with a UVAO of like service.

The researcher received:

- The sample file
- A file with the impacted records for the November 21, 2012 postal mailing
- A file with the service designation for each ticket number in the sample
- Call Center's log of ticket numbers assigned
- The final tracking report for the project
- The immediate dataset
- The survey content

Matching Logic



Issue

- The survey return for ticket 1234 could have been completed by the UVAO for either Unit X or Y. The goal is to match this return with one or the other.

Process

- **Step 1:** Survey item Q2 asks "service." If the sample records for the UVAO in Unit X and Unit Y are different, a direct match can be made. If they are both the same as Q2, no direct match can be made.
- **Step 2:** Survey item Q8 asks, "Were you stationed in the U.S. (including territories) or overseas?" Q8 and the sample record for Unit X and Unit Y were compared on this variable. If the sample record for Unit X and Unit Y are different, a match was made. A location field for the two units (U.S. or Overseas) was defined based on their State information. Overseas was defined as a State abbreviation of AA, AE, or AP. All other State abbreviations were classified as U.S. location.

Matching Process Details

Constructing the Database

***Examine Immediate Dataset, Determine Need for R1R Service Designation*:** To accomplish this, the researcher began by examining the immediate dataset. It contained the WBTICKNO used to access the survey and the SERVICE designation from the sample file. This file was constructed from the perspective that WBTICKNO represents the original ticket number for the unit. The researcher determined that the service designation of the reminder 1 recipient (R1R) unit would need to be merged in for each record. This was a two step process.

***Step One, Impacted Records*:** The first step was to create a new dataset using the impacted records for the November 21, 2012 postal mailing. An example of an impacted record is presented on the following page. This dataset contained a record for each ticket number and corresponding recipient of the reminder 1 mailing. The Litho # was used to match the original unit information with the unit information for the recipient of the reminder 1 mailing.

In our example, Litho # 04007815 links ticket number UB46BYD3 with reminder 1 recipient (R1R) ticket number UPWGH2NN.

Next, was to merge the mailing record information including R1R ticket number, unit State, and R1R State into the immediate dataset, matching on ticket number.

***Step Two, Merge in R1R Service Designation*:** The second step was to merge in the service designation associated with the R1R ticket number. The researcher used a similar process to create a second new dataset from the file of service designation for each ticket number and matching by R1R ticket number to complete this step.

The immediate dataset now contained the self report service designation (Question2 or Q2), the service designation of the original unit (referred to as UNITservice), and the service designation associated with the R1R ticket number (referred to as R1Rservice).

***Categorized Mismatch*:** The researcher categorized the type of mismatch by comparing the UNITservice with R1Rservice for the 1,705 survey returns (affected by the mismatch). The mismatch was within the same service for 1,156 survey returns; crossed services for 522 survey returns; and 27 survey returns would require more research to identify the service designations.

***Service Comparison Fields*:** Two additional service comparisons fields were defined.

- The first compared the self report service designation (Q2) with the UNITservice (referred to as Unitservice_match).
- The second compared the self report service designation (Q2) with the R1Rservice (referred to as R1Rservice_match).

A cross-tabulation table was produced to compare UNITservice_match by R1Rservice_match within mismatch category. Interpretation of the results is presented in the Summary of Findings section.

Example of an impacted record:

LITHO	UNIT	CO	BASE_ID	ADDRESS 2	ADDRESS 3	UCITY	USTATE	UZIP	DATE	TICK NO	SALUTATION
04007815	CG STATION EASTPORT	ATTN: COMMANDING OFFICER	1 WASHINGTON STREET			EASTPORT	ME	04631	November 21, 2012	UPW GH2 NN	Dear Commanding Officer of CG STATION EASTPORT:
04007815	CGC MARCUS HANNA	ATTN: UNIT VOTING ASSISTANCE OFFICER	S. PORTLAND AGS	259 HIGH ST C/O BASE		SOUTH PORTLAND	ME	04106	November 21, 2012	UB4 6BY D3	Dear Unit Voting Assistance Officer of CGC MARCUS HANNA:

PEV4's Checks for Duplicate Records

There is concern that a UVAO could have completed the survey twice. DRC used a two step process to identify and evaluate possible duplicate occurrences. First, for each unit impacted by the error (and could have responded to multiple ticket #'s), those with returns for both ticket #'s for which they were exposed were identified. Based on responses to 12 items (listed below), there were 35 units identified as possible duplicates. Second, for these 35 units, survey responses to all questions were evaluated to determine if they were duplicates.

- Q2 – Service
- Q3 – Serving in the military
- Q4 – Military paygrade
- Q5 – GS or GS equivalent paygrade
- Q6 – Deployed
- Q8 – Stationed in the United States or overseas
- Q10 – Age category
- Q11 – How long had you been UVAO
- Q12 – Ever served as UVAO before most recent UVAO assignment
- Q13 – How long had you been UVAO including previous service (total time)
- Q14 – Receive training to perform UVAO duties
- Q16 – Number of permanent military members assigned to unit(s) you served as UVAO

Specifically, the researcher defined a new data field (similar to a vehicle identification number (VIN)) by concatenating the responses to the 12 questions listed above, referred to as the demographic profile number. The demographic profile number of the WBTICKNO was compared to the demographic profile number of the R1R ticket number to identify possible duplication of survey records. Thirty-five possible duplicate occurrences were identified, meaning there were 35 units where there were returns to both ticket #'s to which that unit was

exposed. Based on the manual comparison of these return pairs, 12 duplicates were identified and will be flagged in the dataset.

Also, because a unit received two ticket #'s, it was possible that two different individuals from a unit could complete the survey. The previous de-duplication process would not identify this occurrence. Note that the instructions were not overly specific ("give to the most senior UVAO") and this was a possibility. Results of the matching process yielded 32 duplicate occurrences (i.e., two survey returns were validated to the same unit).

"Locked-Out" or Missed Interviews

There is concern that the error in the reminder 1 letter would result in potential respondents being "locked out" because their ticket # had already been used. DRC does not track the number of interviews that were locked out because a ticket # had already been used. We did explore two logic scenarios that resulted in similar maximum potential "lock-outs." Although worst-case scenarios, neither outcomes would substantially impact the margin of error.

Logic Scenario 1

During the time period of November 21, 2012 to December 6, 2012 (from when the reminder 1 email error occurred to next reminder distribution), there were 835 survey session entries made by 756 unique ticket numbers. We assume that this is the critical period because it's typical for respondents to respond to the most recent invitation and invitations were correct after December 6, 2012.

Among the 756 unique ticket numbers activated during this period, 674 of them received incorrect info (error flag = "1"). Applying the results from the matching process, 126 of the 674 validate to the original ticket number assigned to unit. These 126 respondents completed the survey and were not "locked out."

Therefore, the maximum potential number of UVAOs being locked out of the survey is 548 (674 – 126), which represents 7% of the original sample of 7,766. Increasing responses by 548 would lower the Margin of Error from ±1.6% to ±1.4%.

Logic Scenario 2

Using the web survey's system data, there were 8,006 "hits" on the "Enter Ticket" page. A "hit" is tallied when a respondent clicks on the URL to view the page and when an action is taken on the page, such as entering a ticket number and pressing the button to proceed. A single person entering the survey would account for two tallies on the page. If a person attempted to enter a ticket number multiple times, they would contribute multiple tallies to the number of "hits." Conservatively, we can say 4,003 respondents attempted to enter a ticket number.

A successful ticket entry on the "Enter Ticket" page takes the respondent to the "Welcome/Welcome Back" page. The web survey's system data indicates there were 6,464 "hits" on the "Welcome/Welcome Back" page. Again, a "hit" is tallied when a respondent views the page and when an action is taken on the page, such as pressing the "Consent" button to proceed. Invalid ticket numbers would not reach this page. Conservatively, we can say 3,232 respondents entered a good ticket number.

The difference (771) between the respondents attempting to enter a ticket number (4,003) and the respondents entering a good ticket number (3,232) is a measure of the number of ticket numbers potentially "locked-out." The 771 represents 10% of the original sample. Increasing responses by 771 would lower the Margin of Error from ±1.6% to ±1.3%.

SECTION 2. COMPARISON TO THE 2010 REPORT: VALIDATION PLAN COMPARISONS

Data for this section were compiled by DRC and reviewed by Michael Larsen, Ph.D., Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Comparisons are made to the response rate and the response distribution for several variables for 2008, 2010, and 2012. Comparisons are made between subsets of respondents in 2012.

Validation Plan Comparisons to 2008 and 2010

Response rates in 2008, 2010, and 2012 are presented in Table A below. Response rates in 2012 and 2008, both presidential election years, are comparable. Response rates increased from 29% in 2008 to 31% in 2012.

Table B presents response rates by service in 2008, 2010, and 2012. Response rates went up in every service between 2008 and 2012.

Table C presents the response distribution to several variables in 2008, 2010, and 2012. Overall results are first given, and then results are given for each service. Conditional distributions appear very stable over time. One should keep in mind that results for the individual services and for questions about subgroups, such as those who have served as UVAO, can be small. Little concern about data validity is readily apparent.

Table A: Response Rate – overall

Data source: 2008 tracking report, 2010 tracking report, 2012 tracking report, and 2010 published results.

[1] http://www.fvap.gov/resources/media/uvaostatmethods.pdf, page 10

[2] Cumulative returns count based on survey returns having a "complete" status.

	2008	2010	2012
Sample size	9,518	9,914	7,766
Cumulative returns	2,786	2,113	2,384[2]
Response rate	29.27%	21.31%	30.70%
Weighted response rate		19.80%[1]	33.74%

Table B: Response Rate – Service

Data source: 2012 tracking report.

2012	Army	Navy	Marine Corps	Air Force	Coast Guard
Sample size	5,054	1,092	282	927	411
Returns	1,069	593	141	403	166
Percent	21.15%	54.30%	50.00%	43.47%	40.39%
Weighted response rate	24.337%	58.425%	52.128%	45.415%	41.606%

Data source: 2010 tracking report and 2010 published results.
[1]http://www.fvap.gov/resources/media/uvaostatmethods.pdf, page 10

2010	Army	Navy	Marine Corps	Air Force	Coast Guard
Sample size	4,879	1,755	504	2,348	428
Returns	608	540	132	701	132
Percent	12.46%	30.77%	26.19%	29.86%	30.84%
Weighted response rate[1]	11.15%	28.03%	25.60%	28.78%	29.21%

Data source: 2008 tracking report.

2008	Army	Navy	Marine Corps	Air Force	Coast Guard
Sample size	4,531	1,791	486	2,311	399
Returns	875	721	231	814	145
Percent	19.31%	40.26%	47.53%	35.22%	36.34%

Table C: Response distribution to several variables in 2008, 2010, and 2012.

Data source: 2012 immediate dataset, 2010 final dataset, 2008 final dataset

Response Unweighted % Overall	2008	2010	2012
Assigned as a UVAO in any of the military services?			
No	Not asked	0.0%	4.3%
Yes		100.0%	95.7%
Service			
Army	30.1%	28.1%	43.3%
Navy	25.3%	25.1%	26.8%
Marine Corps	5.9%	6.7%	6.2%
Air Force	29.7%	34.0%	17.8%
Coast Guard	5.9%	6.2%	6.0%
None, separate or retired	3.0%		

Response Unweighted % Overall	2008	2010	2012
Serving in Military			
Yes, active duty	Not asked	94.0%	93.1%
Yes, NG or Reserve fulltime AGR/FTS/AR		0.7%	1.2%
Yes, traditional NG/Rsv (drill unit, IMA, IRR)		0.0%	0.2%
No, federal civilian		5.2%	5.4%
No, federal contractor		0.0%	0.0%
Paygrade			
E-1	0.0%	0.0%	0.0%
E-2	0.1%	0.0%	0.0%
E-3	0.4%	0.6%	0.1%
E-4	1.0%	1.4%	0.6%
E-5	4.7%	5.7%	2.7%
E-6	10.3%	10.5%	7.7%
E-7	21.7%	21.6%	22.3%
E-8	5.1%	3.9%	3.2%
E-9	0.5%	0.7%	0.3%
W-1	0.4%	0.3%	0.3%
W-2	1.7%	1.8%	1.5%
W-3	1.2%	1.1%	1.1%
W-4	0.5%	0.5%	0.3%
W-5	0.1%	0.1%	0.1%
O-1/O-1E	10.1%	12.4%	12.0%
O-2/O-2E	17.1%	16.3%	21.2%
O-3/O-3E	19.3%	18.7%	21.0%
O-4	4.6%	3.7%	4.6%
O-5	1.0%	0.7%	0.7%
O-6 or above	0.1%	0.1%	0.1%

Response Unweighted % Overall	2008	2010	2012
GS or GS equivalent paygrade			
GS-1	Not asked	0.0%	0.0%
GS-2		0.0%	0.0%
GS-3		0.0%	0.0%
GS-4		1.0%	1.6%
GS-5		2.9%	0.8%
GS-6		6.7%	5.6%
GS-7		12.5%	13.5%
GS-8		2.9%	2.4%
GS-9		9.6%	11.9%
GS-10		0.0%	0.8%
GS-11		20.2%	22.2%
GS-12		30.8%	22.2%
GS/GM-13		11.5%	17.5%
GS/GM-14		1.9%	1.6%
GS/GM-15		0.0%	0.0%
Deployed			
Yes	Not asked	Not asked	4.7%
No			95.3%
Station			
U.S.	83.0%	86.8%	86.8%
Overseas	17.0%	13.2%	13.2%
How long stationed			
Less than 6 months	18.1%	22.1%	12.8%
6 months to less than 1 year	17.2%	20.6%	17.6%
1 year to less than 2 years	33.9%	33.2%	32.4%
2 years to less than 3 years	15.6%	12.6%	20.3%
3 years or more	15.2%	11.5%	16.9%
Age			
24 years or younger	11.8%		
18 to 24 years old		11.4%	11.4%
25 to 29 years old	23.7%	23.9%	25.9%
30 to 34 years old	19.3%	20.9%	23.0%
35 to 44 years old	36.4%	35.8%	29.9%
45 years old or older	8.8%	8.1%	9.8%

Response Unweighted % Overall	2008	2010	2012
Current assignment length			
Less than 3 months	19.9%	26.7%	17.6%
3 months to less than 6 months	21.2%	20.9%	22.3%
6 months to less than 1 year	31.4%	26.7%	30.8%
1 year or more	27.5%	25.7%	29.3%
Served as UVAO before			
Yes, more than once before	3.8%		
Yes, once before	11.4%	10.8%	14.5%
Yes, twice before		2.5%	2.7%
Yes, three or more times before		1.6%	1.8%
No	84.8%	85.1%	81.0%
Total Time UVAO			
Less than 6 months	35.5%	45.3%	34.2%
6 months to less than 1 year	31.4%	23.6%	29.6%
1 year to less than 2 years	18.4%	16.7%	21.0%
2 years to less than 3 years	8.1%	7.4%	8.9%
3 years or more	6.7%	6.9%	6.3%
Receive Training			
Yes	71.2%	64.3%	76.1%
No	28.8%	35.7%	23.9%

Response Unweighted % ARMY	2008	2010	2012
Serving in Military			
Yes, active duty	Not asked	93.6%	91.4%
Yes, NG or Reserve fulltime AGR/FTS/AR		1.4%	1.2%
Yes, traditional NG/Rsv (drill unit, IMA, IRR)		0.2%	0.0%
No, federal civilian		4.8%	7.3%
No, federal contractor		0.0%	0.1%
Paygrade			
E-1	0.0%	0.0%	0.0%
E-2	0.1%	0.0%	0.0%
E-3	0.0%	0.0%	0.0%
E-4	0.2%	0.7%	0.2%
E-5	2.4%	1.5%	1.5%
E-6	5.5%	8.0%	5.5%
E-7	15.7%	14.2%	17.3%
E-8	2.7%	3.5%	1.3%
E-9	0.1%	0.4%	0.1%
W-1	1.3%	0.9%	0.7%
W-2	2.8%	3.7%	2.4%
W-3	1.7%	1.3%	0.9%
W-4	0.5%	0.6%	0.1%
W-5	0.0%	0.0%	0.1%
O-1/O-1E	16.1%	21.6%	16.5%
O-2/O-2E	29.9%	26.4%	34.1%
O-3/O-3E	17.0%	14.0%	17.1%
O-4	2.8%	2.6%	1.5%
O-5	0.9%	0.6%	0.5%
O-6 or above	0.2%	0.0%	0.1%
Station			
U.S.	79.5%	85.6%	85.2%
Overseas	20.5%	14.4%	14.8%
How long stationed			
Less than 6 months	28.1%	25.0%	14.1%
6 months to less than 1 year	23.0%	25.0%	23.9%
1 year to less than 2 years	31.5%	30.0%	29.6%
2 years to less than 3 years	6.2%	8.8%	17.6%
3 years or more	11.2%	11.3%	14.8%

Response Unweighted % ARMY	2008	2010	2012
Age			
24 years or younger	18.0%		
18 to 24 years old		17.5%	16.4%
25 to 29 years old	27.9%	26.2%	30.4%
30 to 34 years old	20.8%	17.6%	21.7%
35 to 44 years old	28.1%	31.7%	22.5%
45 years old or older	5.2%	7.0%	9.0%
Current assignment length			
Less than 3 months	27.4%	34.5%	24.4%
3 months to less than 6 months	25.1%	23.0%	25.8%
6 months to less than 1 year	29.9%	26.6%	28.7%
1 year or more	17.6%	16.0%	21.0%
Served as UVAO before			
Yes, more than once before	3.5%		
Yes, once before	11.8%	12.5%	19.7%
Yes, twice before		2.0%	3.0%
Yes, three or more times before		0.9%	1.9%
No	84.7%	84.6%	75.4%
Total Time UVAO			
Less than 6 months	44.3%	54.2%	42.1%
6 months to less than 1 year	31.2%	24.0%	27.8%
1 year to less than 2 years	15.2%	12.3%	17.4%
2 years to less than 3 years	5.7%	5.6%	7.2%
3 years or more	3.6%	4.0%	5.5%
Receive Training			
Yes	68.2%	65.2%	77.1%
No	31.8%	34.8%	22.9%

Response Unweighted % NAVY	2008	2010	2012
Serving in Military			
Yes, active duty	Not asked	96.8%	93.7%
Yes, NG or Reserve fulltime AGR/FTS/AR		0.8%	2.1%
Yes, traditional NG/Rsv (drill unit, IMA, IRR)		0.0%	0.6%
No, federal civilian		2.4%	3.5%
No, federal contractor		0.0%	0.0%
Paygrade			
E-1	0.0%	0.0%	0.0%
E-2	0.1%	0.0%	0.0%
E-3	0.1%	0.4%	0.0%
E-4	1.0%	1.2%	0.2%
E-5	6.6%	6.1%	1.8%
E-6	16.9%	13.6%	7.2%
E-7	22.7%	28.5%	24.6%
E-8	5.6%	3.7%	4.3%
E-9	0.8%	0.2%	0.5%
W-1	0.0%	0.0%	0.0%
W-2	0.4%	0.2%	0.2%
W-3	0.8%	0.8%	0.8%
W-4	1.0%	0.0%	0.5%
W-5	0.0%	0.0%	0.2%
O-1/O-1E	7.4%	4.5%	6.4%
O-2/O-2E	9.6%	13.0%	9.7%
O-3/O-3E	20.6%	21.3%	31.9%
O-4	5.4%	5.1%	10.4%
O-5	0.8%	1.0%	1.2%
O-6 or above	0.0%	0.4%	0.2%
Station			
U.S.	85.2%	85.3%	90.1%
Overseas	14.8%	14.7%	9.9%
How long stationed			
Less than 6 months	14.0%	23.0%	5.4%
6 months to less than 1 year	15.9%	23.0%	5.4%
1 year to less than 2 years	37.4%	39.2%	35.7%
2 years to less than 3 years	18.7%	13.5%	33.9%
3 years or more	14.0%	1.4%	19.6%

Response Unweighted % NAVY	2008	2010	2012
Age			
24 years or younger	6.4%		
18 to 24 years old		5.2%	3.6%
25 to 29 years old	22.5%	21.9%	22.4%
30 to 34 years old	25.1%	26.4%	24.0%
35 to 44 years old	39.6%	40.8%	38.6%
45 years old or older	6.3%	5.8%	11.4%
Current assignment length			
Less than 3 months	15.6%	24.5%	8.1%
3 months to less than 6 months	18.8%	17.9%	15.7%
6 months to less than 1 year	37.2%	30.1%	36.3%
1 year or more	28.4%	27.5%	39.9%
Served as UVAO before			
Yes, more than once before	2.9%		
Yes, once before	9.3%	9.0%	8.6%
Yes, twice before		2.4%	2.3%
Yes, three or more times before		0.4%	1.5%
No	87.8%	88.2%	87.7%
Total Time UVAO			
Less than 6 months	31.0%	43.9%	21.8%
6 months to less than 1 year	35.0%	22.8%	34.9%
1 year to less than 2 years	21.6%	18.4%	27.8%
2 years to less than 3 years	6.5%	10.2%	10.0%
3 years or more	5.8%	4.8%	5.5%
Receive Training			
Yes	71.6%	55.5%	81.9%
No	28.4%	44.5%	18.1%

Response Unweighted % MARINE CORPS	2008	2010	2012
Serving in Military			
Yes, active duty	Not asked	95.5%	96.5%
Yes, NG or Reserve fulltime AGR/FTS/AR		0.8%	0.7%
Yes, traditional NG/Rsv (drill unit, IMA, IRR)		0.0%	0.0%
No, federal civilian		3.8%	2.8%
No, federal contractor		0.0%	0.0%
Paygrade			
E-1	0.0%	0.0%	0.0%
E-2	0.0%	0.0%	0.0%
E-3	0.6%	0.0%	0.0%
E-4	0.6%	0.8%	0.0%
E-5	1.8%	1.6%	0.7%
E-6	7.0%	10.2%	5.8%
E-7	11.7%	7.8%	5.0%
E-8	4.1%	2.3%	1.4%
E-9	0.6%	0.8%	0.7%
W-1	0.0%	0.0%	0.0%
W-2	4.1%	3.1%	0.7%
W-3	3.5%	4.7%	4.3%
W-4	1.2%	2.3%	0.7%
W-5	1.2%	0.8%	0.0%
O-1/O-1E	5.8%	6.3%	12.9%
O-2/O-2E	17.0%	10.2%	22.3%
O-3/O-3E	33.3%	40.6%	34.5%
O-4	7.0%	8.6%	10.1%
O-5	0.6%	0.0%	0.7%
O-6 or above	0.0%	0.0%	0.0%
Station			
U.S.	81.3%	85.0%	88.2%
Overseas	18.7%	15.0%	11.8%
How long stationed			
Less than 6 months	37.5%	40.0%	18.8%
6 months to less than 1 year	31.3%	25.0%	25.0%
1 year to less than 2 years	15.6%	30.0%	56.3%
2 years to less than 3 years	9.4%	5.0%	0.0%
3 years or more	6.3%	0.0%	0.0%

Response Unweighted % MARINE CORPS	2008	2010	2012
Age			
24 years or younger	6.4%		
18 to 24 years old		4.5%	7.7%
25 to 29 years old	33.3%	33.8%	38.5%
30 to 34 years old	22.8%	24.8%	29.4%
35 to 44 years old	36.8%	33.8%	17.5%
45 years old or older	0.6%	3.0%	7.0%
Current assignment length			
Less than 3 months	21.1%	14.4%	20.3%
3 months to less than 6 months	25.1%	28.0%	25.9%
6 months to less than 1 year	24.6%	23.5%	19.6%
1 year or more	29.2%	34.1%	34.3%
Served as UVAO before			
Yes, more than once before	6.4%		
Yes, once before	16.4%	12.1%	13.3%
Yes, twice before		7.6%	3.5%
Yes, three or more times before		6.1%	7.0%
No	77.2%	74.2%	76.2%
Total Time UVAO			
Less than 6 months	35.9%	35.3%	34.3%
6 months to less than 1 year	29.4%	22.6%	19.6%
1 year to less than 2 years	12.4%	16.5%	18.9%
2 years to less than 3 years	11.8%	7.5%	10.5%
3 years or more	10.6%	18.0%	16.8%
Receive Training			
Yes	74.9%	64.4%	70.6%
No	25.1%	35.6%	29.4%

Response Unweighted % AIR FORCE	2008	2010	2012
Serving in Military			
Yes, active duty	Not asked	91.1%	94.6%
Yes, NG or Reserve fulltime AGR/FTS/AR		0.3%	0.5%
Yes, traditional NG/Rsv (drill unit, IMA, IRR)		0.0%	0.0%
No, federal civilian		8.7%	4.9%
No, federal contractor		0.0%	0.0%
Paygrade			
E-1	0.0%	0.0%	0.0%
E-2	0.1%	0.0%	0.0%
E-3	1.1%	1.6%	0.5%
E-4	2.0%	2.4%	2.3%
E-5	5.9%	9.8%	6.9%
E-6	9.5%	10.6%	14.6%
E-7	30.1%	26.0%	38.7%
E-8	7.0%	5.0%	5.9%
E-9	0.6%	1.3%	0.0%
W-1	0.0%	0.0%	0.0%
W-2	0.0%	0.0%	0.0%
W-3	0.0%	0.0%	0.0%
W-4	0.0%	0.0%	0.0%
W-5	0.0%	0.0%	0.0%
O-1/O-1E	6.3%	10.6%	5.6%
O-2/O-2E	11.6%	12.2%	12.6%
O-3/O-3E	19.1%	17.0%	10.5%
O-4	5.5%	2.7%	1.5%
O-5	1.3%	0.6%	0.5%
O-6 or above	0.0%	0.0%	0.3%
Station			
U.S.	82.2%	87.5%	81.4%
Overseas	17.8%	12.5%	18.6%
How long stationed			
Less than 6 months	6.6%	14.1%	14.7%
6 months to less than 1 year	9.2%	12.9%	13.3%
1 year to less than 2 years	40.1%	32.9%	29.3%
2 years to less than 3 years	25.0%	16.5%	20.0%
3 years or more	19.1%	23.5%	22.7%

Response Unweighted % AIR FORCE	2008	2010	2012
Age			
24 years or younger	10.3%		
18 to 24 years old		10.6%	9.2%
25 to 29 years old	20.7%	22.5%	19.7%
30 to 34 years old	14.4%	20.0%	22.4%
35 to 44 years old	45.0%	35.4%	38.9%
45 years old or older	9.7%	11.6%	9.7%
Current assignment length			
Less than 3 months	15.5%	23.2%	14.4%
3 months to less than 6 months	19.7%	19.4%	20.9%
6 months to less than 1 year	32.0%	27.6%	34.5%
1 year or more	32.9%	29.8%	30.2%
Served as UVAO before			
Yes, more than once before	3.6%		
Yes, once before	11.4%	10.6%	11.2%
Yes, twice before		1.5%	1.7%
Yes, three or more times before		2.2%	0.5%
No	85.0%	85.7%	86.6%
Total Time UVAO			
Less than 6 months	30.2%	39.4%	30.9%
6 months to less than 1 year	31.7%	26.9%	34.8%
1 year to less than 2 years	20.7%	19.4%	22.1%
2 years to less than 3 years	10.0%	6.8%	8.5%
3 years or more	7.4%	7.6%	3.6%
Receive Training			
Yes	82.2%	78.7%	87.8%
No	17.8%	21.3%	12.2%

Response Unweighted % COAST GUARD	2008	2010	2012
Serving in Military			
Yes, active duty	Not asked	98.4%	95.7%
Yes, NG or Reserve fulltime AGR/FTS/AR		0.0%	0.0%
Yes, traditional NG/Rsv (drill unit, IMA, IRR)		0.0%	0.0%
No, federal civilian		1.6%	4.3%
No, federal contractor		0.0%	0.0%
Paygrade			
E-1	0.0%	0.0%	0.0%
E-2	0.0%	0.0%	0.0%
E-3	0.0%	0.0%	0.0%
E-4	0.6%	0.8%	0.8%
E-5	5.3%	5.8%	5.3%
E-6	14.1%	8.3%	7.5%
E-7	15.9%	19.0%	17.3%
E-8	4.1%	3.3%	5.3%
E-9	0.6%	0.8%	1.5%
W-1	0.0%	0.0%	0.0%
W-2	8.8%	7.4%	6.8%
W-3	3.5%	2.5%	4.5%
W-4	0.6%	2.5%	1.5%
W-5	0.0%	0.0%	0.0%
O-1/O-1E	16.5%	19.0%	22.6%
O-2/O-2E	13.5%	11.6%	8.3%
O-3/O-3E	12.9%	14.9%	15.8%
O-4	2.9%	2.5%	3.0%
O-5	0.6%	1.7%	0.0%
O-6 or above	0.0%	0.0%	0.0%
Station			
U.S.	96.5%	97.5%	99.2%
Overseas	3.5%	2.5%	0.8%
How long stationed			
Less than 6 months	Insufficient n	Insufficient n	Insufficient n
6 months to less than 1 year			
1 year to less than 2 years			
2 years to less than 3 years			
3 years or more			

Response Unweighted % COAST GUARD	2008	2010	2012
Age			
24 years or younger	21.1%		
18 to 24 years old		20.5%	20.1%
25 to 29 years old	22.8%	18.9%	15.1%
30 to 34 years old	17.5%	13.9%	22.3%
35 to 44 years old	30.4%	37.7%	30.9%
45 years old or older	8.2%	9.0%	11.5%
Current assignment length			
Less than 3 months	25.9%	32.5%	18.0%
3 months to less than 6 months	20.0%	24.4%	26.6%
6 months to less than 1 year	18.2%	12.2%	21.6%
1 year or more	35.9%	30.9%	33.8%
Served as UVAO before			
Yes, more than once before	1.2%		
Yes, once before	12.9%	10.7%	15.1%
Yes, twice before		5.7%	5.0%
Yes, three or more times before		0.8%	0.7%
No	85.9%	82.8%	79.1%
Total Time UVAO			
Less than 6 months	42.6%	55.0%	41.7%
6 months to less than 1 year	21.3%	7.5%	15.1%
1 year to less than 2 years	16.0%	15.8%	15.1%
2 years to less than 3 years	11.2%	8.3%	15.8%
3 years or more	8.9%	13.3%	12.2%
Receive Training			
Yes	21.4%	16.4%	14.4%
No	78.6%	83.6%	85.6%

SECTION 3. COMPARISON OF RESPONSE GROUPS IN 2012

Analysis for this section was conducted by Michael Larsen, Ph.D. and reviewed by Jack Fentress, Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Several variables are studied comparing subsets of the 2012 data set. The consultant had a limited selection of variables for this analysis.

The occurrence of errors seems to be associated with service. Errors were relatively more common in the Army and relatively less common in the Navy. For those with errors, matching to the unit level is more common in the Navy, but less common in the Army. It is interesting to note that the match percentages are very close to the sample percentages by service. The sample is comprised of 65% Army, 14% Navy, 4% Marine Corps, 12% Air Force, and 5% Coast Guard.

The rate of errors is about the same for sample members stationed in the U.S. versus those stationed overseas. The rate of matching to the unit level versus to only the service level is relatively higher for those stationed domestically. Being stationed domestically apparently made it easier to match units as well as service.

The rate of reported UVAO training was higher in the group with no contact error than in the group with an error. The rate of training, however, was not different among those matched to the unit or matched only to the service level. Perhaps the training also varied by service.

The number in the unit reported was similar in the group with no error in contact and the group with error in contact. The size distributions were a little different in the unit-matched and in the service-matched units. Perhaps the larger units are easier to match.

The number of hours reported does not appear related to the occurrence of errors in contact or match status.

Receiving the VAG is relatively more likely among those with no contact error and those matching to the unit level. The preferred VAG form (paper, web, or both), however, does not seem to vary significantly by contact status or match status.

Receiving and forwarding news releases and using the FVAP website appear to be associated negatively with an error in contact and with matching to only the service level.

Hypothesis

The association between Service and several variables were investigated. In particular, all the variables that show a statistically significant difference between those contacted with no error and those contacted with error show statistically significant association by service. Tests of association of service by UVAO training, VAG received, news releases received, news releases forwarded, and website used are all highly statistically significant (p-values less than 0.01). As a result, some of the differences seen between those with no error and those with error in contact can be explained by the fact that errors were made at different rates across the services. Analyses by service, therefore, should not be seriously affected by differences in contact status rates.

Table: Comparison of subgroups by contact error status and match level in 2012.

Variable	No error	Error	P-value	Match unit	Match service	P-value
Service						
Army	25%	52%	<0.01	22%	68%	<0.01
Navy	52	15		43	9	
Marine Corps	4	7		9	4	
Air Force	15	19		18	17	
Coast Guard	4	7		9	2	
Station						
Domestic	87%	86%	0.60	89%	85%	0.01
Overseas	12	14		11	15	
UVAO training						
Yes	83%	73%	<0.01	76%	76%	0.93
No	17	27		24	24	
Number in unit						
<100	34%	33%	0.49	32%	34%	<0.01
100-199	25	29		25	30	
200+	40	40		43	36	
Hours						
<1/week	39%	36%	0.67	38%	36%	0.84
1-2/week	34	36		35	36	
2-3/week	15	16		16	15	
3+/week	12	11		11	12	
VAG received						
Yes	80%	71%	<0.01	78%	70%	<0.01
No	20	29		22	30	
VAG form						
Paper	9%	10%	0.31	8%	11%	0.07
Web	40	43		43	41	
Both	51	47		49	48	
News release received						
Yes	69%	56%	<0.01	66%	53%	<0.01
No	31	44		34	47	

News release forwarded						
Yes	96%	92%	0.01	95%	92%	<0.01
No	4	8		5	8	
Website used						
Yes	96%	92%	<0.01	95%	92%	<0.01
No	4	8		5	8	

Analyses were conducted by report group status for those responding after a reminder. The three report groups were no error (n=194), error and match to both unit and service (n=496), and error and match to service only (n=1,063). As in the previous table, there is a statistically significant association on subgroup membership by match status for those responding after a reminder. To the degree that there are other differences in results, they can be partially explained by the difference in matching rates (and original error rates) by service.

Table: Comparison of subgroups by match status for those responding after a reminder in 2012.

Variable	No error	Error, match unit and service	Error, match only service	P-value
Service				
Army	38%	18%	68%	<0.01
Navy	41	29	9	
Marine Corps	3	15	4	
Air Force	15	22	17	
Coast Guard	3	16	2	
Station				
Domestic	80%	90%	85%	<0.01
Overseas	20	10	15	
UVAO training				
Yes	84%	67%	76%	<0.01
No	6	33	24	
Number in unit				
<100	40%	30%	34%	<0.01
100-199	27	24	30	
200+	33	47	36	
Hours				
<1/week	43%	38%	36%	0.39
1-2/week	29	36	36	
2-3/week	14	16	15	
3+/week	14	11	12	

VAG received				
Yes	75%	74%	70%	0.18
No	24	26	30	
VAG form				
Paper	7%	7%	11%	0.07
Web	44	47	41	
Both	49	46	48	
News release received				
Yes	58%	61%	53%	0.01
No	42	39	47	
News release forwarded				
Yes	94%	94%	92%	0.38
No	6	6	8	
Website used				
Yes	93%	93%	92%	0.62
No	7	7	8	

Analyses were run to adjust for different rates of contact errors occurring in the services. When a target variable has two levels, such as STATION (Domestic, Overseas), variables indicating service and a category variables are entered into a logistic regression to predict the response to the target variable. For example, the error flag (no error versus contact error) and service indicators are used to predict STATION. A t-test p-value is reported in the table below. When a target variable has more than two levels, such as Number in the Unit, a log linear model is fit with interactions among pairs of variables. The p-value is based on a test of the error category-target variable interaction. P-values are reported for the three comparison groups.

Adjustment makes some difference. Several of the statistically significant results from the previous two tables are no longer significant after adjustment. Some remain significant, but to a smaller degree. It is hypothesized that if additional variables on the service member respondents were available that further statistical adjustments would likely reduce the effect of the contact errors. It is beyond the scope of this report to pursue further modeling. These results suggest that stratification and weighting should help ensure the validity of the sample data for inference about the population. Results here use unweighted data.

Table: P-values based on models adjusting for service.

Variable	No error versus error	Match unit versus match only service	Three match status groups post reminder
Station	*t test in logistic regression		
Domestic	0.63	0.32	0.02
Overseas			
UVAO training	*t test in logistic regression		
Yes	<0.01	0.04	0.03
No			
Number in unit	*LRT test in log linear model		
<100	0.39	0.52	0.02
100-199			
200+			
Hours	*LRT test in log linear model		
<1/week	0.31	0.67	0.40
1-2/week			
2-3/week			
3+/week			
VAG received	*t test in logistic regression		
Yes	0.09	0.03	0.20
No			
VAG form	*LRT test in log linear model		
Paper	0.48	0.09	0.70
Web			
Both			
News release received	*t test in logistic regression		
Yes	0.02	0.13	0.74
No			
News release forwarded	*t test in logistic regression		
Yes	0.03	0.20	0.89
No			
Website used	*t test in logistic regression		
Yes	0.01	0.04	0.54
No			

Task Order #0007 2012 Post-Election Voting Survey of Department of State Voting Assistance Officers (PEV6)

Michael D. Larsen, Ph.D., George Washington University, Jack Fentress, and others from DRC

Summary of Issue

On November 14, 2012, all 144 first reminder emails (hereafter referred to as reminder 1 emails) for PEV6 Voting Assistance Officer (VAO) were sent to incorrect email addresses. The post name and the ticket number were correct in the email text, but the email address was for a different post.

For the 144 records, the issue is that a post other than the one associated in the database to the web survey ticket number could have completed the survey. These occurrences needed to be identified and remedial action recommended.

It is acknowledged that the error could have impacted participation. There were 23 non respondents and six blank records (opened survey, but entered no responses). Although typical records in any dataset, we cannot rule out that some of these occurrences were a result of confusion resulting from the reminder 1 error. However, a total of 211 survey returns were qualified, representing an overall return of 88%. We conclude that non response bias is not a significant issue in the survey results.

Summary of Main Results

The respondent disposition methodology was successful in linking almost all respondents to a country and most respondents to a post as well as a country. All returns (n=96) collected prior to the reminder 1 email are valid. All but nine (9) records out of 217 (240 – 23 no response) were matched to country. Of the nine records, eight provided no useful information and one was a duplicate. 179 (96 +83) of 240 (75%) respondents represent unique records and were matched on both post and country. 208 of 240 (87%) respondents match on country. Given the high level of matching, the potential for statistical bias due to the email problem is small.

Results in 2010 and 2012 are very similar on key variables (e.g., length of assignment, previous service). That 2012 was a presidential election year and 2010 was not could account for the few notable differences. Based on available comparative results, there is no reason to question the validity of the results.

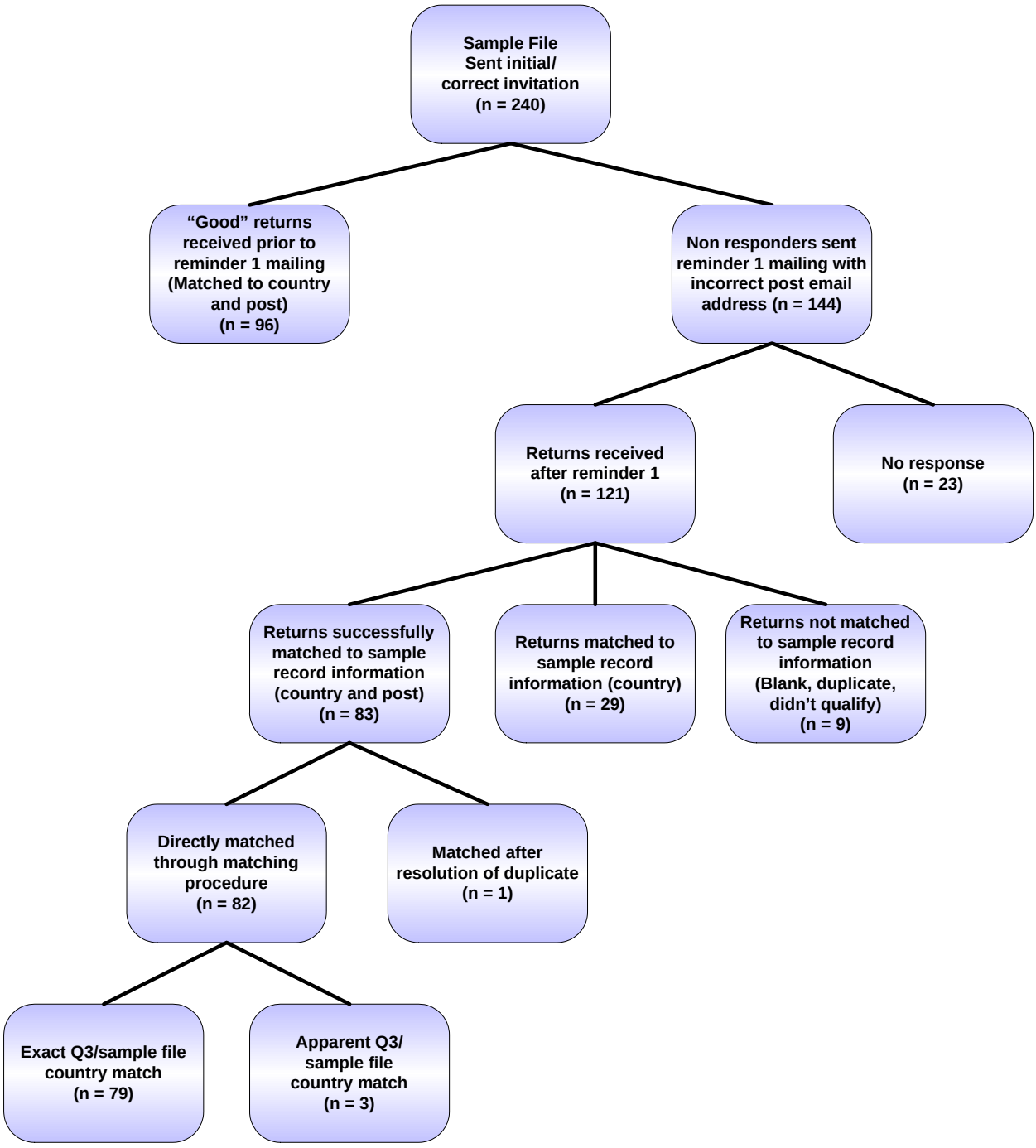
Several variables were compared in three groups. The three groups were: 1) those collected prior to the first reminder email; 2) those that could be matched to both post and country; and 3) those that could be matched only to country. On a variety of variables (e.g., training received, hours worked), differences among respondents in these three groups are small and, for the most part, not statistically significant. These results further support the validity of the respondents for characterizing the original sample file.

SECTION 1. RESPONDENT DISPOSITION METHODOLOGY AND RESULTS

Analysis for this section was conducted by DRC and reviewed by Michael Larsen, Ph.D., Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Respondent Disposition Overview

The following is an overview of respondent disposition. Details specific to process and procedures follow.



Respondent Disposition Specifics and Matching Process

As noted in the diagram, the initial invitation was sent to the correct email address for all 240 individuals in the sample. All returns (n = 96) with an error flag of "0" are validated. This is true because these returns were collected before the error occurred.

A total of 144 non responders (240 – 96) were sent the reminder 1 email. For these reminders, the email addresses were incorrect. A total of 121 returns were received after the email error occurred. Note: The error was limited to the reminder 1 email. A correction email reminder 1 was sent soon after the error was detected. In addition, four subsequent reminder emails were sent accurately. However, all returns that were received after the reminder 1 email issue occurred were coded with an error flag of "1" to indicate they may be at issue. There were 23 non respondents.

Matching Returns to Sample Records (n = 121)

Therefore, there were 121 returns received after the reminder 1 email that needed to be matched with 144 possible sample records.

Matching to Country

The researcher utilized the sample file, immediate dataset, and survey content to complete the matching of survey returns to the sample file at the country level. The survey item of interest is Q3 (COUNTRY).

Survey Item 3. **On November 6, 2012, in which country were you assigned?** ***Please enter the name of the country below.***

The sample file variable of interest is DOS_COUNTRY.

Using the immediate dataset, the researcher converted it to an Excel file; each row of the worksheet represents a sample member or survey return. The rows in the Excel file were sorted on two fields (error flag and COUNTRY). The two fields, COUNTRY and DOS_COUNTRY, were positioned in adjacent columns. The cell contents of the fields COUNTRY and DOS_COUNTRY were manually compared by the researcher.

Of the 121 responses that had an error flag of "1," there were 13 responses where COUNTRY (Q3 on the survey) was not an exact match to DOS_COUNTRY (from the sample file). Nine of these records are discussed in detail under "Invalid/Incomplete Records." One was identified as a duplicate.

There were three responses where there was not an exact match (Q3 was a write-in in the survey), but we recommend that they should be categorized a match and the records validated at the country level for the reasons given below.

One instance of United Kingdom written in on COUNTRY was for ticket number SPJSPJVR on December 19, 2012. This ticket number was assigned to the Scotland post. A second instance of

United Kingdom written in on COUNTRY was for ticket number SXJ735BV on December 6, 2012. This ticket number was assigned to the Belfast, Ireland post.

Respondent response to COUNTRY (Write-in)	DOS_COUNTRY (Sample File)
United Kingdom	Scotland
United Kingdom	Ireland
Brunei Darussalam	Brunei

By matching respondents' response to COUNTRY (Q3) to DOS_COUNTRY in the sample records, 112 of 121 problem returns were successfully matched to country.

Matching to Post

Through a process of elimination, 83 of the 112 country matched records were also matched to post. Matching records to post was a highly manual process. Once country was determined, there were a limited number of possible post matchings.

For some countries, there is only one post (one matching possibility, after country confirmed) and a direct match was considered verified. For other countries, there are multiple posts. However, because the 96 returns received prior to the error are valid and can be directly matched to post, possible matchings were significantly limited. Eighty two (82) post-level matchings are valid because there was only one country/post possibility.

> Example: Ecuador had two posts. Quito was received prior to the error reminder. Therefore, a second Ecuador return was directly matched to Guayaquil.
>
> Example: Kazakhstan had two posts. Astana was received prior to the error reminder. Therefore, a second Kazakhstan return was directly matched to Almata.

Duplicate Record: There was one record matched to the post level that required additional effort. The country of Mauritius has only one post in the sample file; thus, there should be only one response from Mauritius in the immediate data set. The issue is that we had two responses from Mauritius.

Ticket Number SXM5L9UA was sent to the VAO in Mauritius as a part of the initial invitation November 7, 2012. This Ticket Number SXM5L9UA was also sent to the VAO in Stockholm in the reminder 1 email on November 14, 2012. However, the Stockholm VAO responded to the survey using Ticket Number SXB3RS26 prior to the reminder 1 email being sent. And, the Stockholm VAO post was not on the list for reminder 1 email distribution.

Ticket Number SXM5L9UA was entered by a respondent on November 22, 2012 and the response provided to COUNTRY was Mauritius and Seychelles. This respondent completed questions through the Voting Assistance section of the survey and clicked the "Save and Come Back" button.

Respondent response to COUNTRY (Write-in)	DOS_COUNTRY (Sample File)
Mauritius and Seychelles	Mauritius

The second respondent writing in Mauritius and Seychelles as the response to COUNTRY entered the survey using Ticket Number SX8HP3J4 on November 23, 2012. This respondent completed all sections of the survey and clicked the "Submit" button.

Ticket Number SX8HP3J4 was sent to the VAO in Adana, Turkey as a part of the initial invitation November 7, 2012. This Ticket Number SX8HP3J4 was also sent to the VAO in Port Louis, Mauritius in the reminder 1 email distribution on November 14, 2012.

Respondent response to COUNTRY (Write-in)	DOS_COUNTRY (Sample File)
Mauritius and Seychelles	Turkey

A comparison of the survey records for these two Ticket Numbers shows that 29 of the 30 questions through the Voting Assistance section have identical responses.

DRC concludes the VAO in Mauritius used both Ticket Numbers to complete the survey. DRC recommends that the action to be taken is to re-associate Ticket number SX8HP3J4 (the complete record) with Mauritius and flag Ticket Number SXM5L9UA (the partial record) as a duplicate record that would be excluded from analysis.

Matched to Country Only

Twenty nine (29) records were not matched to post. Although country was verified, there was more than one post option for that country.

Country	Returns Matched at Country, Only
Australia	2
Brazil	4
Canada	2
China	2
France	2
India	2
Indonesia	1
Italy	1
Japan	2
Mexico	6
Russia	3
Saudi Arabia	2
TOTAL	29

Invalid/Incomplete Returns (n = 9)

There are nine records where the respondent provided no response to COUNTRY or it was notably different. Further analyses confirmed that all are invalid/incomplete returns or a duplicate.

Respondent response to COUNTRY (Write-in)	DOS_COUNTRY (Sample File)	Disposition
Mauritius and Seychelles	Turkey	Reassigned with Mauritius[1]
No Response	Marshall Islands	Blank record
No Response	Switzerland	Not qualified – Q1 terminate
No Response	Sierra Leone	Blank record
No Response	Italy	Incomplete record – Q1, only
No Response	Micronesia	Blank record
No Response	Pakistan	Blank record
No Response	Egypt	Blank record
No Response	Cote d'Ivoire (Ivory Coast)	Blank record

[1] Reassignment discussed in previous section

Blank Records: Further analysis into the nine records where the respondent provided no response to COUNTRY or it was notably different shows six of the records are blank records (FLAG_FIN = 17).

These respondents opened a survey session, did not enter any responses, closed out of the browser window without saving data, and did not return to complete the survey. The amount of time spent in the survey was very brief, indicating they may have been interrupted, were simply curious about the survey or, admittedly, could have been confused by the reminder 1 error. DRC recommends these records be excluded from analysis. While there is not enough information to validate the country, the fact that these records are blank means there is no loss of data responses when excluding them from the analysis.

Incomplete Record: The one record (of nine) which shows Italy as the DOS_COUNTRY in the sample file has a response for only Q1. He/she indicated he/she was assigned as a Voting Assistance Officer (VAO) for the Department of State (DoS), and then closed out of the browser window without saving data and did not return to complete the survey. The amount of time spent in the survey was very brief indicating he/she may have been interrupted. The Ticket number on this data record was entered on December 13, 2012 after a request to reset the Ticket number was processed on December 7, 2012. This validates the DOS_COUNTRY. This record is incomplete and DRC recommends it be excluded from the analysis. No opinion data are impacted.

Not Qualified Record: The one record (of nine) which shows Switzerland as the DOS_COUNTRY in the sample file has a response for only Q1. He/she indicated he/she was not assigned as a Voting Assistance Officer (VAO) for the Department of State (DoS), and the survey was terminated. There is not enough information to validate the country. If requested by DMDC, DRC could contact the VAO in Switzerland to confirm non-qualifying status.

Final Check for Duplicate Records

As a final check, records within country were checked for duplication. Within country records were initially compared on Q2, Q4 – Q9.

- Q2 – FS rank
- Q4 – How long assigned to country
- Q5 – Age
- Q6 – How long a VAO
- Q7 – Served as a VAO before
- Q8 – How long served as VAO
- Q9 – Received training

Results of the initial analysis revealed only one instance of possible duplication (Mexico). However, a comparison of training histories (Q10) confirmed that they were not duplicate records.

SECTION 2. COMPARISON TO THE 2010 REPORT: VALIDATION PLAN COMPARISONS

Data for this section were compiled by DRC and reviewed by Michael Larsen, Ph.D., Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Results in 2010 were compared to those in 2012. Comparisons are made on response rate overall, response rate by region of the world, and which countries or posts are non respondents. Further comparisons are made on rank, length of assignment, age group, previous service, training, number of citizens assisted, and hours worked.

Results in 2010 and 2012 are very similar on key variables (e.g., length of assignment, previous service). That 2012 was a presidential election year and 2010 was not could account for the few notable differences. Based on available comparative results, there is no reason to question the validity of the results.

Response Rate – overall
Data source: 2012 tracking report unless noted.
[1] www.fvap.gov/resources/media/dosvaostatmethods.pdf, page 7
[2] Cumulative returns count based on survey returns having a "complete" status.

	2010	2012
Sample size	238	240
Cumulative returns	207	205[2]
Response rate	86.97%	85.42%
Weight response rate	89.9%[1]	90.42%

Response Rate – region of the world
Data source: 2012 immediate dataset

Current Study 2012	Africa	East Asia/ Pacific	Europe	Near East/ South & Central Asia	Western Hemisphere
Sample size	48	41	61	41	49
Flag_Fin code					
1 Return Survey	39	34	59	35	44
17 Return Blank	2	2	0	2	0
26 No Return	7	5	2	4	5
Response rate (Flag_Fin = 1) Unweighted	81.25%	82.9%	96.7%	85.4%	89.8%

Data source: 2010 final dataset

Previous Study 2010	Africa	East Asia/ Pacific	Europe	Near East/ South & Central Asia	Western Hemisphere
Sample size	46	41	61	41	49
Flag_Fin code					
1 Return Survey	36	38	60	34	46
17 Return Blank	6	1	0	2	1
26 No Return	4	2	1	5	2
Response rate (Flag_Fin = 1) unweighted	78.2%	92.7%	98.4%	82.9%	93.9%

Data source: 2012 immediate dataset
2012 Non-Responding Posts (N=23)

DOS_COUNTRY	DOS_POST
Algeria	Algiers
Australia	Sydney
Azores	Ponta Delgada
Bahrain	Manama
Bermuda	Hamilton
Canada	Ottawa
Chad	N'Djamena
Haiti	Port-au-Prince
Honduras	Tegucigalpa
Indonesia	Surabaya
Japan	Naha
Kosovo	Pristina
Lesotho	Maseru
Libya	Tripoli
Niger	Niamey
Samoa	Apia
Sudan	Khartoum
Suriname	Paramaribo
Swaziland	Mbabane
Syria	Damascus
Taiwan	Kaoshiung
Togo	Lome
Uganda	Kampala

Data source: 2010 final dataset
2010 Non-Responding Posts (N=14)

DOSCountry	DOSPost
Burma	Rangoon
Democratic Republic of Congo	Kinshasa
France	Marseille
Israel	Tel Aviv
Japan	Naha
Kuwait	Kuwait
Mexico	Matamoros
Mexico	Monterrey
Niger	Niamey
Nigeria	Abuja
Pakistan	Peshawar
Qatar	Doha
Saudi Arabia	Riyadh
Uganda	Kampala

Data source: 2012 immediate dataset
Data source: 2010 final dataset

Response Unweighted %	2010 (General election – no presidential race)*	2012 (included Presidential race)
FSRANK		
FS-01	2.9%	1.9%
FS-02	14.8%	12.5%
FS-03	28.2%	27.4%
FS-04	33.5%	49.0%
FS-05	14.4%	4.8%
FS-06	2.9%	2.4%
FS-07	2.4%	1.4%
FS-08	0.5%	0.5%
FS-09	0.5%	0.0%
Length of assignment		
Less than 6 months	19.0%	19.2%
6 months to less than 1 year	16.6%	16.8%
1 year to less than 2 years	47.9%	49.5%
2 years to less than 3 years	11.4%	13.0%
3 years or more	5.2%	1.4%
Age group		
18 to 24 years old	2.4%	0.5%
25 to 29 years old	19.2%	13.8%
30 to 34 years old	16.3%	26.6%
35 to 44 years old	34.6%	35.5%
45 years old or older	27.4%	23.6%
Previous service		
Yes, once before	21.0%	14.6%
Yes, twice before	9.0%	5.3%
Yes, three or more time before	1.4%	2.9%
No	68.6%	77.2%
Training †		
Yes	20.9%	66.7%
No	79.1%	33.3%

Response Unweighted %	2010 (General election – no presidential race)*	2012 (included Presidential race)
Number of people assisted		
None	3.3%	0.0%
1 to 100	27.1%	28.0%
101 to 500	21.9%	38.2%
501 to 1000	4.3%	15.5%
1001 to 2000	1.4%	10.1%
2001 or more	1.9%	8.2%
Hours worked		
5 hours or less per week		62.8%
6 to 10 hours per week		27.1%
11 to 15 hours per week		7.2%
16 to 20 hours per week		1.9%
21 or more hours per week		1.0%
10 hour or less per week †	97.2%	89.9%
11 to 20 hours per week	2.4%	9.2%
21 to 30 hours per week	0.5%	1.0%

* 2010 statistics were compared to 2010 published report (unweighted and weighted data respectively) and these stats are reasonable.

† There is a difference in training activities and a slight difference in hours worked—this may be due to presidential election in 2012 versus a general election in 2010.

SECTION 3. COMPARISON OF THREE RESPONSE GROUPS IN 2012

Analysis for this section was conducted by Michael Larsen, Ph.D., and reviewed by Jack Fentress, Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

The respondents can be divided into three groups. The three groups were: 1) those collected prior to the first reminder email (*n=96)*; 2) those that could be matched to both post and country (*n=83)*; and 3) those that could be matched only to country (*n=29*). On a variety of variables, differences among respondents in these three groups are small and, for the most part, not statistically significant. Calculations in this section do not use sample weights. Significance tests are based on Chi square tests of homogeneity of proportions. These results support the validity of the respondents for characterizing the original sample file.

Rank, Length of assignment, Age group, and Previous service were removed due to being classified as Personally Identifiable Information (PII) and are not analyzed in this report.

Training, numbers assisted, hours worked, and other variables are analyzed.

Training: There is almost no difference in percent receiving training in the three report groups. A test of equal proportions has a p-value of 0.97, which is not statistically significant at the 0.05 significance level.

Training received	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
1 no	33%	34%	34%
2 yes	67%	66%	66%
P-value from Chi square test of homogenous proportions: 0.97; not statistically significant			

Number assisted: There are small differences in number of people assisted by response group. There appears to be a larger percentage reporting 1-100 persons when only the country is matched and a corresponding smaller percentage reporting 101-500 than in the other two categories. This difference in part could be related to response wave. An alternative hypothesis is forwarded. Records matched only to country always had multiple posts. Further information is required, but it could be that multiple posts result in inherently smaller user populations (within a post).

When just the two columns comparing those who responded after the first reminder (columns 2 and 3), the difference appears smaller and clearly not statistically significant.

Number assisted	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
1 to 100	20%	32%	45%
101 to 500	45%	35%	21%
501 to 1000	16%	15%	17%
1001 or more	19%	18%	17%
P-value from Chi square test of homogenous proportions: 0.15; not statistically significant P-value, columns 2 and 3 only: 0.45; not statistically significant			

Hours worked: There are very small differences in hours reported by report group. Results are not statistically significant.

Hours worked	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
5 hours or less per week	65%	61%	59%
6 to 10 hours per week	25%	26%	38%
11 or more hours per week	9%	13%	3%
P-value from Chi square test of homogenous proportions: 0.43; not statistically significant			

Region: There appears to be some difference in region for those reporting. The difference is primarily in Africa. Overall the significance test has a p-value of 0.02, which is statistically significant at the 0.05 significance level. However, these results are explainable (see footnote). Excluding Africa, the differences across other regions are not statistically significant. If the two columns with matches on both country and post (1 and 2) are used, results are not statistically significant. It is possible that some differences among the groups will arise simply by chance.

Region reported	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Africa	16%	28%	0%[1]
East Asia/Pacific	18%	12%	24%
Europe	29%	28%	21%
Near East/South & Central Asia	18%	17%	14%
Western Hemisphere	20%	16%	41%
P-value from Chi square test of homogenous proportions: 0.02; statistically significant P-value, first two columns: 0.35; not statistically significant P-value, excluding first row: 0.36; not statistically significant [1] Note: There are 44 African countries in the sample. Only two have multiple posts. Therefore, the low incidence in this segment is explainable.			

Other Variables

- Support from three sources—Q13 asked respondents about satisfaction with support from three sources. In all cases, differences are not statistically significant.

Q13. During 2012, how satisfied or dissatisfied were you with the amount of support you received from each of the following groups in helping you perform your Voting Assistance Officer (VAO) duties?

Federal Voting Assistance Program (FVAP) – results are not statistically significant

Satisfaction with FVAP support	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Very satisfied	45%	44%	51%
Satisfied	39%	41%	39%
Less than satisfied or did not receive support	16%	15%	11%
P-value from Chi square test of homogenous proportions: 0.86; not statistically significant			

Department of State (DoS) – results are not statistically significantly different

Satisfaction with DoS support	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Very satisfied	43%	49%	45%
Satisfied	41%	39%	40%
Less than satisfied or did not receive support	16%	13%	14%
P-value from Chi square test of homogenous proportions: 0.96; not statistically significant			

Your embassy or consulate – results are not statistically significantly different

Satisfaction with embassy or consulate support	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Very satisfied	41%	54%	44%
Satisfied	42%	37%	40%
Less than satisfied or did not receive support	17%	9%	17%
P-value from Chi square test of homogenous proportions: 0.45; not statistically significant			

- VAG—Q16 asked respondents if they received the DOD 2012–13 Voting Assistance Guide. When both country and post are known, the receipt of the VAG was nearly identical for those on the initial and on the reminder mailing. When country only matches, the rate is less. The results, however, are not statistically significant (P-value 0.17).

16. The Department of Defense *2012-13 Voting Assistance Guide (VAG)* provides state-by-state information about registering to vote and requesting an absentee ballot. Q16: Did you receive the *2012-13 VAG*?

Received VAG	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
2 yes	93%	94%	83%
1 no	7%	6%	17%
P-value from Chi square test of homogenous proportions: 0.17; not statistically significant			

- VAG useful—Q17 asked respondents who had received the VAG if they thought it was useful. Among those who had received the VAG, they were asked how useful it was. Results differ little, and are not statistically significant (P-value 0.92) across the three groups.

17. During 2012, how useful was the *2012-13 Voting Assistance Guide (VAG)* in helping you perform your Voting Assistance Officer (VAO) duties?

Usefulness of VAG	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Very useful	58%	61%	52%
Useful	23%	20%	22%
Somewhat, not very, or not at all useful	19%	19%	26%
P-value from Chi square test of homogenous proportions: 0.92; not statistically significant			

- VAG format—Respondents were asked which format of the VAG would they prefer in the future. Results are consistent across the three report groups; results are not statistically significant.

19. If given a choice, which format of the *Voting Assistance Guide (VAG)* would you prefer to use in the future?

Form of VAG	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Paper-based only	16%	11%	14%
Web-based only	20%	24%	31%
Both a paper- and web-based copy	64%	65%	55%
P-value from Chi square test of homogenous proportions: 0.70; not statistically significant			

- News release registration—Respondents were asked in Q20 if they had registered to receive FVAP news releases to VOAs. The rate of registration to receive news releases from the FVAP was nearly the same among VAOs in the three groups; differences are not statistically significant.

The Federal Voting Assistance Program (FVAP) transmits News Releases to Voting Assistance Officers (VAOs) who are registered to receive them.

20. During 2012, were you registered to receive FVAP's News Releases?

Registered to receive FVAP News Releases	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
2 yes	63%	63%	66%
1 no	37%	37%	34%
P-value from Chi square test of homogenous proportions: 0.96; not statistically significant			

- News release forward—Q21 asked if VOAs who received news releases had forwarded them to U.S. citizens. The rate of forwarding news releases among those who received them does not vary significantly across groups.

21. During 2012, did you forward any Federal Voting Assistance Program (FVAP) News Releases to U.S. citizens?

Forward FVAP News Releases to citizens	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
2 yes	78%	80%	79%
1 no	22%	20%	21%
P-value from Chi square test of homogenous proportions: 0.98; not statistically significant			

- Website—Q22 concerned the FVAP website. Almost everyone in all three groups visited the FVAP website; differences are not statistically significant.

The Federal Voting Assistance Program's (FVAP) website, www.fvap.gov, provides voting-related information and resources. Q22: During 2012, did you visit this website?

Visit website	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
2 yes	100%	99%	97%
1 no	0%	1%	3%
P-value from Chi square test of homogenous proportions: 0.29; not statistically significant			

- Website visits—Respondents who had visited the website were asked how often they did so. Results are very consistent across the groups; differences are not statistically significant.

23. On average, how often have you visited the Federal Voting Assistance Program's (FVAP) website since Labor Day 2012 (September 3, 2012)?

Visit website	1 Initial 'good' mailing	2 Reminder mailing match to country & post	3 Reminder mailing match to country only
Every day	22%	16%	22%
3-4 times each week	29%	37%	30%
1-2 times each week	33%	28%	19%
Less than once a week	16%	19%	30%
P-value from Chi square test of homogenous proportions: 0.47; not statistically significant			

Task Order #0009 2012 Post-Election Voting Survey of Military Spouses (PEV7)

Michael D. Larsen, PH.D., George Washington University, Jack Fentress, and others from DRC

Summary of Issue

On November 7, 2012, the announcement email for PEV7 Spouse was emailed to both spouse and service member email addresses instead of only to the spouse. DRC sent 9,316 emails. When we had a spouse email address and a service member email address, an email was sent to the spouse. When there was only a service member email address, an email was sent to the service member email address. If a spouse email was not available, the correct protocol was to send that spouse a mail invitation.

- 754 emails were correctly sent to spouse email addresses
- 8,562 emails were incorrectly sent to service member email addresses

The salutation on all emails was the same. For example, “Dear Mary Smith” appeared if the spouse name was in the sample. If the spouse name was missing, the salutation was “Dear Spouse of John Smith.”

In addition to email announcement communications, postal communications were also sent. Postal letters were sent correctly based on specifications. Letters were directed to the spouse if the spouse address was in the sample file; letters were directed to spouse of service member in cases of no spouse address in the sample file.

In all instances, the service member spouse’s participation was solicited. However, the solicitation delivery process was incorrect for the announcement email. All subsequent email reminders were correctly sent.

For the 8,562 records for which emails were incorrectly sent to the service member email address, the issue is that service members, rather than targeted spouses, could have completed the web survey. These occurrences need to be identified and remedial action recommended.

Summary of Main Results

Following analyses of the web response data and the survey instrument structure, we find that the immediate dataset reflects military spouse voting attitudes and behaviors. The survey was completed by the targeted service member spouse. There are a limited number of records that were suspect and which required further analysis. Our analyses and subsequent conclusions assume that respondents read questions fully and responded truthfully. This is an assumption in any survey program. Although there is no reason to believe it was frequent, nor is there a way to quantify the incidence, there is the possibility a service member did not fully comprehend a question and was able to advance through the survey.

Besides the evaluation of responses, additional steps of analysis suggest that the data are valid for their intended purpose. Response rates and response distributions are comparable to the 2010 survey. Response rates and response distributions are similar for those with correct and with incorrect contacts. Where there are slight differences, it is possible that the differences are partially attributable to differences between early versus late responders to the survey. Those who responded early were not eligible for the incorrect contact mode. In summary, the data set seems valid for describing the target population.

Validation

The validation plan for PEV7 consists of four steps.

1. Confirm that only member spouses complete the survey. The number and percent of such cases and the potential impact will be reported.
2. Compare response rates for the group sent email correctly and for the group with email sent to the service member.
3. Compare characteristics and responses of spouses who were and who were not sent an email correctly.
4. Compare response rates and distributions to those in 2010 and 2008.

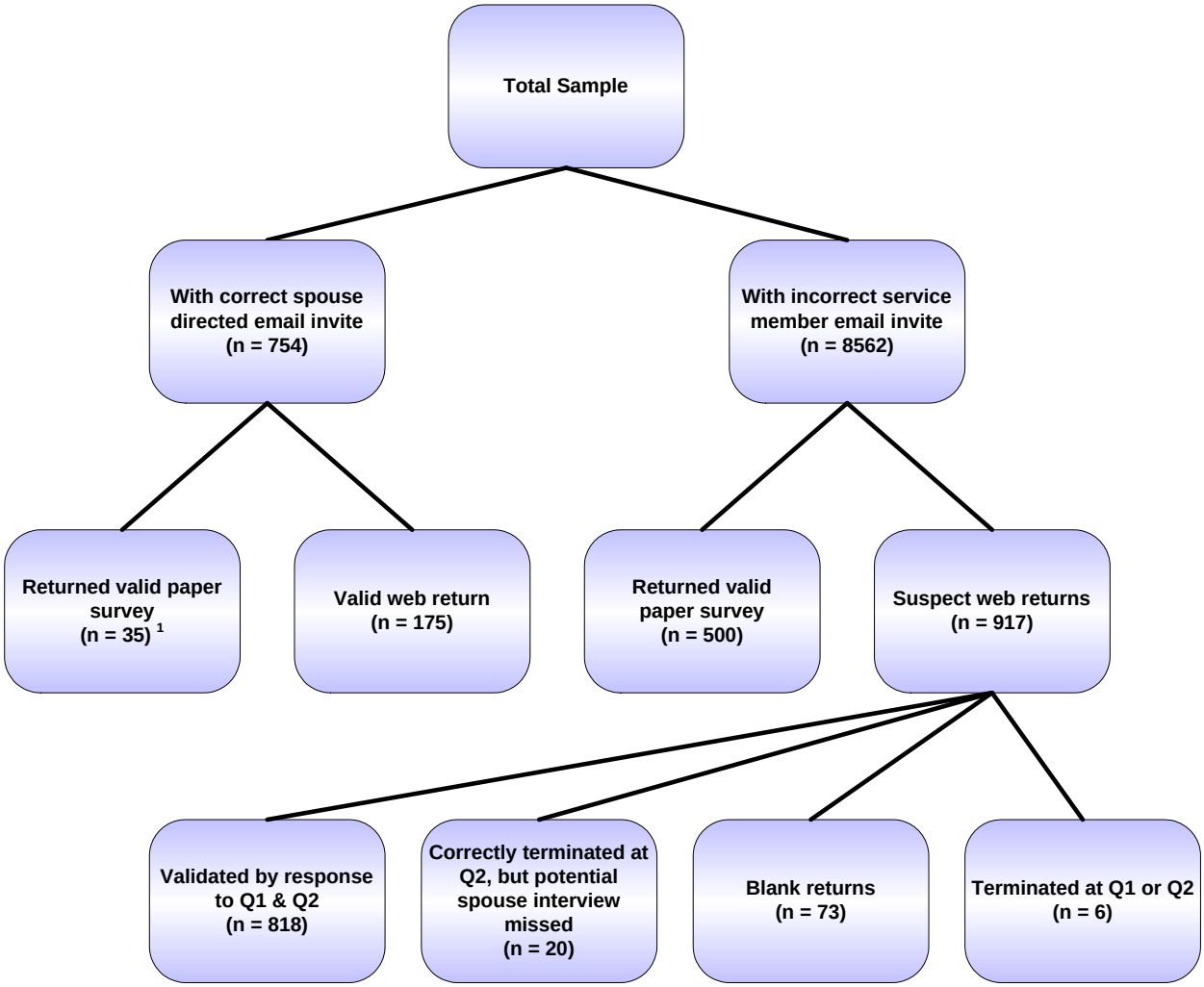
Section 1 reports on the investigation for validation step 1. Validation step 4 is discussed in Section 2. Validation steps 2 and 3 are addressed in Section 3.

SECTION 1. RESPONDENT DISPOSITION METHODOLOGY AND RESULTS

Analysis for this section was conducted by DRC and reviewed by Michael Larsen, Ph.D., Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Respondent Disposition Overview

The following is an overview of respondent disposition. Details specific to process and procedures follow.



[1] All paper returns from Error Flag: 0

Respondent Disposition Specifics

DRC conducted this analysis using the immediate dataset created February 7, 2013.

For PEV7, a total of 1,627 survey returns were received. The 535 respondents choosing to respond via paper were not affected by this issue; neither were 175 Web respondents whose email solicitation was correct.

Survey Returns by Return Status

Status	Paper	Web – No error	Web – Error	Total
Survey Returns	530	169	844	1,543
Returned Blank	5	6	73	84
Total Returns	535	175	917	1,627

The focus of the analysis is the 917 returns resulting when the spouse invitation was incorrectly sent to the service member email. For these returns, it needs to be validated that the service member spouse completed the return and not the service member.

Key items used in the analysis were the first two survey items that determine eligibility. These items effectively qualified that the service member spouse completed the survey.

Responses to Question 1:

1. What is your marital status?

1 ☐ Married

2 ☐ Separated

3 ☐ Divorced

4 ☐ Widowed

5 ☐ Never married

Whether the survey respondent was the spouse or the service member, the answer to Q1 would have been identical for all responses except “widowed” or “never married.” Other classifications are member/spouse shared conditions (married, separated, divorced). If a service member responded to the survey and answered “widowed,” then his or her spouse would need to be dispositioned as deceased. Otherwise, a service member trying to complete the survey was terminated.

Q1 Responses by Return Status

Status	Paper	Web – No error	Web – Error	Total
Married	516	164	829	1,509
Separated	9	4	11	24
Divorced	2	1	3	6
Widowed	0	0	0	0
Never Married	0	0	1	1
No Response	3	0	0	3
Total	530	169	844	1,543

The final analysis of the return data shows there were 0 responses to a marital status of "widowed." There was one response for "never married" and this respondent was correctly terminated. Whether the respondent was an active service member or their partner ("spouse"), neither was qualified for participation. Based on our analysis of responses to Q1, responses and frequencies reported in Q1 are recommended as valid.

Responses to Question 2:

2. Was your spouse serving on active duty on November 6, 2012?

2 ☐ Yes

1 ☐ No

Respondents answering "Yes": Next we reviewed the responses to Q2. If a respondent answers "yes" to Q2, they must be a "service member spouse" or a "dual service member spouse household." A service member (trying to complete the survey) could only answer "yes" if their spouse was also an active service member and advance in the survey. The sample file field FAMSTAT4 indicates that no household in the sample has a "dual service spouse." Although "dual service spouse" households were not sampled, some service members may have married another service member between the time of sampling and fielding the survey (about 5 months), and then answered "Yes" to married to an active duty service member, and mistakenly taken the survey. We believe this would not happen often, but it could not be quantified.
It is also possible that a service member could misread this question and answer that they are on active duty (missing the word "spouse"), and then taken the survey. We believe this would have happened infrequently, but, again, it is not possible to quantify.

In sum, respondents who answered Q1 as Married or Separated (requirements to complete the survey) and Q2 as "yes," spouse on active duty, are in most all cases a spouse and a valid respondent. It is our belief that the integrity of the sample is assured and reflects the attitudes and behaviors of targeted service member spouses.

Q2 Responses by Return Status (Answered Q1)

Status	Paper	Web – No error	Web – Error	Total
Yes	514	165	818	1,497
No	10	2	20	32
No Response	1	1	2	4
Total	525	168	840	1,533

Respondents answering "No": In the immediate dataset used for this analysis, 818 of 838 Web surveys (98%) impacted by the error were completed by the service member spouse (i.e., answered "yes" to Q2). A total of 32 (10 Paper, 2 Web – No error, and 20 Web – Error) respondents answered "no" to spouse serving on active duty. There are two occurrences where a respondent could answer "no" to Q2:

1. A service member tried to complete the survey and their spouse was not on active duty. These service members were correctly terminated.
2. A spouse tried to complete the survey and their spouse (service member) is not an active service member. These spouses were correctly terminated.

Although "no" to Q2 effectively prevented the balance of service members from completing the survey and further assured that only spouses have completed the survey, there is the possibility that we missed the opportunity to collect data from 20 Web spouses impacted by the error, i.e., the service member did not pass the survey on to their spouse and the targeted spouse was not interviewed. This is potential non response bias.

Margin of Error: The impact of 20 missing interviews is small. The margin of error at the 95% confidence level for a sample of 1,529 from a population of 9,995 is ±2.3%; it is also ±2.3% when the sample size is 1,509 rather than 1,529. (Note: Based to 20 potentially missed interviews from the mismatched and a total of 1,529 respondents who completed Q2).
Although the exclusion of 20 respondents from analysis in a database of 1,529 does not represent significant bias, we conducted further analyses on these 20 Web – Error survey records:

- In each case, DRC confirmed the email was sent to the service member's email address as a spouse email address was not available for these records.
- The FLAG_FIN status indicates a returned survey. There was no indication of retirement or separation from service among the 20 Web survey records.

Incidence Rate of Termination at Q2: Acknowledging that these 20 returns may represent missed service member spouse interviews, the incidence rate of termination at Q2 (32 out of 1,529) was analyzed by return status and survey form, and compared to 2010 statistics. We conclude that there is nothing suspect about the frequency of "no" responses to Q2. If there were an issue, we would have expected a higher frequency. In fact, the percent responding "no" was slightly lower in 2012.

- The incidence rate is comparable for the two survey modes administered in 2012.
- In addition, the incidence rate among 2012 Web responders is lower than that observed among the Web responders in 2010.

2012 Unweighted	Paper	Web	Web – No error	Web – Error	Total
Married or Separated	524	1,005	167	838	1,529
"No" to Q2	10	22	2	20	32
Percent	1.9%	2.2%	1.2%	2.4%	2.1%

2010 Unweighted	Paper	Web	Total
Married or Separated	2,786	4,415	7,201
"No" to Q2	40	147	187
Percent	1.4%	3.3%	2.6%

Blank Records: A higher percentage of returns came back blank when there was the associated error than when there was not the error. Although statistically significant at the 0.05 significance level, the absolute difference and the total number of blank forms is relatively small. Did people click in and get confused, or would they have left the form blank even if the contact had been correct? There are no comparable 2010 data for comparison. It is possible that those returning through the web with no contact error responded earlier on average than those responding by web with a contact error. Those responding promptly would have had no second contact, and no chance of an error in contact. Those responding earlier might also be expected to return fewer blank forms; the prompt response could be correlated in interest in the survey topic or with considering the survey important to complete.

Survey Returns by Return Status

Status	Paper	Web – No error	Web – Error	Total
Survey Returns	530	169	844	1,543
Returned Blank	5 (1%)	6 (3.4%)	73 (8.0%)	84
Total Returns	535	175	917	1,627

SECTION 2. COMPARISON TO THE 2010 REPORT: VALIDATION PLAN COMPARISONS

Data for this section were compiled by DRC and reviewed by Michael Larsen, Ph.D., Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Validation Step 4

The fourth step in the validation is addressed in the two tables below. The first table displays response rates in 2010 and 2012. The response rate increased in 2012. One must acknowledge, however, that it is not possible to know what the response rates in 2012 would have been had the email been sent correctly to the spouse.

Table: Response Rate – overall in 2010 and 2012.

Data source: 2012 tracking report unless noted.
[1] www.fvap.gov/resources/media/sstatmethods.pdf, page 13
[2] Cumulative returns count based on survey returns having a "complete" status.

	2010	2012
Sample size	50,132	9,995
Cumulative returns	6,898	1,501[2]
Response rate	13.76%	15.02%
Weight response rate	14.13%[1]	18.61%

The second table compares response distributions to those in a previous survey. Caution should be exercised when comparing the response distributions because the best data available for 2010 is the published, weighted data. However, the 2012 data reported here are unweighted data. Small differences are apparent, but none that are terribly concerning. During a two year period, the composition in the military naturally has undergone some amount of change. The election in 2012 was a presidential election, but the election in 2010 was not. Given the small differences that would naturally occur, it seems reasonable to conclude that the fourth validation step does not raise any concerns about the validity of the data.

Table: Comparison of Response Distributions to Previous Survey

Data source: 2012 immediate dataset - unweighted
Data source: 2010 published data – weighted, retrieved from
http://www.fvap.gov/resources/media/ssummarydata.pdf

Response	2010	2012
U.S. Citizen		
Yes	100%	93.1%
No	0%	6.9%
Age Group		
17 years old or younger	0%	0.0%
18 to 24 years old	21%	14.9%
25 to 29 years old	26%	23.5%
30 to 34 years old	21%	22.6%
35 to 44 years old	25%	27.9%
45 years old or older	8%	11.1%
Race		
White	76%	83.8%
Black or African American	15%	10.9%
American Indian or Alaska Native	2%	2.0%
Asian	6%	6.6%
Native Hawaiian or other Pacific Islander	1%	1.2%
Location		
U.S./territories	91%	86.6%
Overseas	9%	13.4%
Registered Voter		
Yes	80%	85.1%
No	20%	14.9%

SECTION 3. COMPARISON OF RESPONSE GROUPS IN 2012

Analysis for this section was conducted by Michael Larsen, Ph.D., and reviewed by Jack Fentress, Diana Davis, Ph.D., Marc Julian, Ph.D., Elaine Cardenas, and Valerie Waller.

Validation Step 2

For validation step 2, the table below presents response rates for those sent the email correctly and for those with the email sent to the service member. Response rates are very similar, and actually higher when sent to the service member. A two-sample test of equal proportions yields a p-value of 0.20, which is not statistically significant.

Table: Response Rate Comparison in 2012 by Email Type (correct/incorrect)

Data source: 2012 immediate dataset.

2012	Email sent correctly	Email sent to service member	Total
Sample size	1,434	8,561	9,995
Survey return (Flag_fin = 1)	203	1,327	1,530
Response rate	14.2%	15.5%	15.3%

Validation Step 3

The group that had correct contact was compared to the group that had incorrect contact. Not all the variables were available to the consultant. In particular, the consultant cannot tell which responses came from the initial contact and which came from the second contact. Consequently, those responding to the correct contact include early responders who did not receive a second email contact, and therefore did not have a chance of being in the group with incorrect contact.

Data are unweighted. On some variables, there is no statistically significant difference. Variables without a difference included being a registered voter, requesting an absentee ballot, level of interest in the election, and planning to vote.

Some variables showed a statistically significant difference. Variables with a statistically significant difference, even if not a very large absolute difference, include receiving UVOA help, being a non-U.S. citizen, being stationed overseas, and accessing the FVAP website. These variables could be related to doing the survey later rather than earlier; those completing the survey promptly would not have had a second contact, and are therefore less like to have an incorrect contact.

Although there are some statistical differences between the groups, it is not clear that the data are not still valid for describing the population, or that substantially different answers would have been found had there not been a contact error. Generally the results are pretty close on an absolute scale.

Table: Comparison of those with correct contact to those with incorrect contact in 2012 on several variables.

%	Correct contact	Incorrect contact	P-value
Registered voter	84%	85%	0.82
Request absentee ballot	36	33	0.44
Interest: Very interested	65	59	0.31
Somewhat interested	23	26	
Less or not interested	13	15	
Planning to vote	80	85	0.12
Received UVOA help	14	6	<0.01
Not a U.S. Citizen	0	8	<0.01
Stationed overseas	11	26	<0.01
Accessed FVAP website	20	11	<0.01