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This report evaluates the original sampling designs and missing data compensation procedures for the 1995 Sexual Harassment Survey (SHS) and the 1996 Equal Opportunity Survey (EOS) in light of actual response rates experienced in each of the surveys. The average design effect, a measure of the efficiency of the design, computed over the 124 reporting domains used in the SHS design was 1.80. For the EOS, the average design effect computed over a total of 333 domains was 1.97. These results indicate both designs are reasonably efficient. Weighting class adjustments were used to compensate for nonresponse in the SHS and inverse response propensity weighting was used to compensate for nonresponse in the EOS. A comparison of the two shows that similar results were obtained. The modeling approach did produce slightly higher variances, but may have been more effective in reducing biases because of the additional variables used for the adjustments. Other means of reducing missing data biases are also discussed along with their advantages and disadvantages. These include adding additional mailings to the data collection schedule, decreasing the size and complexity of the questionnaire, and employing multiphase sampling designs.

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1995-1996 STATUS OF THE

ARMED FORCES SURVEYS

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Executive Summary

This report compares the sample size and allocation used in the original designs for the *1995 Sexual Harassment Survey (SHS)* and the *1996 Equal Opportunity Survey (EOS)* with the sample size and allocation produced using updated cost information and the actual response rates experienced in each of the surveys. The same design strata and precision requirements were used for both the original designs and the redesigns. The Defense Manpower Data Center's Sample Planning Tool was used to compute and report the information used in the report for both the original designs and the redesigns.

For the *SHS*, precision constraints were imposed on a total of 124 reporting domains defined by Service, location, paygrade groups, gender, representation of women in the work place, and racial and ethnic categories. The precision requirements adopted for the original *SHS* design required a total of 29,061 observations distributed disproportionately over the 180 strata used in the design. Given the distribution of expected response rates in each of the design strata a total sample size of 50,768 persons was required to obtain this number of observations. Using the updated information, a total of 29,023 observations is needed to satisfy the same precision requirements, requiring a total sample size of 46,455 persons. The stratum-level allocation solutions obtained for the original design and redesign remained essentially the same.

For the *EOS*, precision constraints were imposed on 170 reporting domains defined similarly to the *SHS* domains, except emphasizing racial and ethnic distinctions rather than gender. A total of 255 strata, again emphasizing racial and ethnic distinctions, were used to control the distribution of the sample. The original design specified a total of 46,115 observations requiring a total sample size of 76,754 persons. Using the experienced response rates, these figures became 46,280 and 82,385. Again the stratum-level allocations remained essentially the same.

In each survey, the precision constraints that essentially drove the allocation solutions, and by implication the costs of the survey, tended to be those that were imposed on reporting domains that comprise a relatively small proportion of the total population. However, factors other than the size of the domain act to determine the relative importance of a constraint, including the relative variance implied by the constraint itself, the representation of the domain across the design strata, the size of the strata, and the per unit average stratum data collection and related costs.

The average design effect, a measure of the efficiency of the design, computed over the 124 reporting domains used in the *SHS* design was 1.80. For the *EOS*, the average design effect computed over a total of 333 domains (the 170 used to specify the design plus an additional 163) was 1.97. These results indicate both designs are reasonably efficient.

Data collection for both surveys was by mail. Experience has shown that response rates to mail surveys of military personnel are highly variable, depending on Service, paygrade, and other factors. These surveys are no exception. In general, low response rates are an important data quality consideration in the conduct of a mail survey; this places considerable importance on the procedures adopted to compensate for missing data biases.

This report compares the nonresponse compensation procedures used in each of the *SHS* and the *EOS*. Weighting class adjustments were used to compensate for nonresponse in the *SHS* and inverse response propensity weighting was used to compensate for nonresponse in the *EOS*. For comparison, a weighting class adjustment was also used for the *EOS*. A comparison of the two shows that similar results were obtained. The result is not surprising because many of the same variables were used to define the weighting classes as comprised the explanatory variables in the response propensity model. The modeling approach did produce slightly higher variances, but may have been more effective in reducing biases because of the additional variables used for the adjustments. Despite the greater cost of implementing inverse response propensity weighting, this procedure is preferred when response rates are low. Also it has superior properties under circumstances that necessitate collapsing of weighting classes. Inverse response propensity weighting reproduces the full sample weighted distribution for the variables used in the model. Weighting class procedures fail to preserve the full sample weighted distribution when classes are collapsed.

Other means of reducing missing data biases are also discussed along with their advantages and disadvantages. These include adding additional mailings to the data collection schedule, decreasing the size and complexity of the questionnaire, and employing multiphase sampling designs. Given the already considerable length of a data collection period with three mailings and the expected very low return rate that would be obtained, additional mailings are unlikely to be effective in reducing the missing data biases. Similarly, the objectives of a survey are the major determinants of the size and complexity of the questionnaire, which limits the opportunity for response rate concerns to override the substantive issues (although the response rate issue needs be kept in mind when developing the survey objectives). Multi-phase sampling (usually double sampling) is a classical design response to reduce or eliminate missing data biases. As applied to the *SHS* and the *EOS*, a subsample of nonrespondents to the mailing phase would be selected and the information obtained from persons in the subsample using a more effective data collection mode, such as telephone or face-to-face interviewing, or perhaps group session administrations of the questionnaire. Although such designs obviously increases data collection costs, the size of the subsample can be determined to meet specified cost (and variance) objectives. Double sampling has merits, but there are many unresolved methodological issues.

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Introduction

The 1995/1996 Status of the Armed Forces Surveys consisted of a series of four surveys. The inferential population for each survey consisted of the worldwide active-duty Army, Navy, Marine Corps, Air Force, and Coast Guard. The population includes reserve component members on active-duty: Active Guard and Reserves (AGR), and Navy Training and Administration of Reserve (TAR).

Gender issues were the focus of the first three surveys, referred to as the *Form A, B,* and *C* surveys, conducted in 1995. The *Form A* survey was a re-administration of the 1988 survey of *Sex Roles in the Armed Forces*, undertaken to provide an unambiguous comparison of self-reported sex-related incidents between the two years. The *Form B*, or *Sexual Harassment Survey (SHS)*, was developed specifically to assess the prevalence of self-reported sex-related incidents in 1995 and incorporates the most recent advances in understanding and reporting of the incidents of interest. The *Form C* survey was developed as a research tool to link the behavior lists on the other two forms. The sampling designs, estimation procedures, missing data compensation procedures, and performance rates for each of the surveys were described by Mason, Kavee, Wheeless, George, Riemer, and Elig (1996). The initial substantive results of the *SHS* were reported by Bastian, Lancaster, and Reyst (1996).

Racial and ethnic issues provided the focus of the fourth survey, the 1996 *Equal Opportunity Survey (EOS)*. The sampling design, estimation procedures, missing data compensation procedures and performance rates for the *EOS* are described by Wheeless, Mason, Kavee, Riemer, and Elig (1997). The initial substantive results of the *EOS* were reported by Scarville, Button, Edwards, Lancaster, and Elig (in preparation).

The current report addresses a variety of topics not covered in the statistical methodology reports for *SHS* and *EOS*. First, this report uses the original design specifications for the *SHS* and *EOS* and recomputes the sample size and allocations using the experienced response rates and updated cost information; the original and revised allocation solutions and performance of the designs are compared below in the section entitled "Survey Redesign." Next, in the section entitled "Response Rates," the bias potential associated with a range of response rates is examined along with a discussion of the nonresponse compensation procedures used for each of the surveys. As is the case in many surveys that employ data collection by mail, response rates are an important data quality consideration. Experience with mail surveys of military personnel in general has shown that response rates are highly variable and are correlated with Service, paygrade, and other factors (see, e.g., Mason et al. (1996), section 5.3). Other mechanisms for potentially reducing nonresponse biases are also discussed in this section. The final section of the report, entitled "Variance Estimation and Generalized Variances," compares confidence intervals for estimates computed using a direct estimate of the variance with that obtained from a simple generalized variance model.

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Overview of the Sampling Designs

Single-stage stratified designs were used for both the *SHS* and *EOS*. The *SHS* design involved the construction of 180 strata and the *EOS* design involved the construction of 255 strata to control the distribution of the sample with respect to Service, location, paygrade, gender, and selected racial/ethnic defined categories. Each of the samples was disproportionately allocated to the strata, in response to variance constraints imposed on estimates of parameters describing selected reporting domains. For the *SHS*, a total of 124 reporting domains were defined for this purpose. For the *EOS*, variance constraints were imposed on a total of 170 domains. The total sample sizes in the original *SHS* and *EOS* were 50,768 and 76,754 persons respectively.

Data collection for each survey was by mail. A description of the data collection procedures for *SHS* is given by Edwards, Elig, Edwards, and Riemer (1997), and for the *EOS* by Elig, Edwards, and Riemer (1997). Estimates of the eligibility adjusted response rates (i.e., the response rates estimated for the entire inferential population, as though a census had been undertaken using the same data collection procedures) were similar for the two surveys. The eligibility adjusted response rate for the *SHS* was 53.4% and for the *EOS* was 52.7%.

Design Development

Surveys of military personnel are unique in that a considerable body of information is available for developing the sampling design. First, detailed administrative records are available at the level of the individual for the entire establishment. Second, a long history of survey research is available to provide the investigator with directly related experience.

To assist the investigator in organizing and making use of this information, DMDC's Sample Planning Tool was developed in 1995 (Kavee & Mason, 1997) and first used to develop the sampling designs for the *SHS* and *EOS*. The Tool provides a point-and-click user interface to assist the investigator in constructing strata, in defining the parameters and associated variance constraints that are to form the basis of the design, and in providing cost and response rate information needed to complete the design specifications. Reports generated by the Tool provide documentation of the features of the design and information for evaluating its performance. The reports can be incorporated directly into other reports as exemplified by the appendixes attached to this report.

For developing the sample allocation, variance constraints are specified. These variance constraints take the form of the maximum values of the variances to be associated with the parameter estimates. Once the design specifications are fully developed, the Tool computes the minimum cost allocation of the sample needed to provide variances that are less than or equal to the specified maxima. The mathematical basis for the Tool is provided by the Karush-Kuhn-Tucker necessary conditions for function minimization (Kuhn & Tucker, 1951), as described by Chromy (1987). Sufficient conditions for the allocation solutions to exist are provided by the

convex form of the cost function and concave forms of the actual variance constraints (see, e.g., Hillier & Lieberman, 1974, pp. 722-725).

The information in this report comparing the original and revised *SHS* and *EOS* designs was generated using DMDC's Sample Planning Tool.

Sample Redesign

As noted previously, DMDC's Sample Planning Tool provides that allocation of the sample that satisfies multiple variance constraints for the least cost. The allocation of the total sample made to each of the design strata depends on the following design parameters:

- the relative sizes of each of the design strata,

- the relative sizes in the each of the strata of the reporting domains upon which variance constraints are placed,

- the values of the parameters that describe the reporting domains,

- the maximum values of the variances afforded each of the parameter estimates, and

- the per unit average cost in each stratum of collecting, editing and processing the sample data.

Reference is made to Mason et al. (1995, p. 773), for the algebraic form of the allocation solutions showing how these factors interact.

In this section, the sample allocation was recomputed using the design parameters actually experienced in the implementation of the *SHS* and in the implementation of the *EOS*. In addition, that allocation is compared with the original. Specifically, the sample size and allocation for each of the surveys was recomputed using updated cost information and the experienced response rates. The design strata, domain definitions, parameter values, and variance constraints remained the same as those used to develop the original designs.

Changes in the Design Parameters

This section describes the design parameters used in the original design in relation to the changes made in updating the original design parameters to reflect the actual experience. Tables A-1 through A-4 in Appendix A give numerical results for the original and redesigned *SHS*; corresponding results for the *EOS* appear in Tables A-5 through A-9. The statistical methodology reports for the *SHS* and the *EOS* provide detailed descriptions of the sample designs for the surveys (Mason et al., 1996; Wheeless et al. 1997).

Stratification

In each of the surveys, sampling strata were constructed to provide control over the distribution of the sample with respect to Service, location, paygrade, gender, and selected racial/ethnic defined categories of individuals. For the *SHS*, a total of 180 strata were constructed. For the *EOS*, a total of 255 strata were constructed. The stratum definitions were similar in each survey, differing in detail with respect to location definitions, paygrade

categories, and in response to the different focus of the two surveys (i.e., gender issues vs. issues involving race and ethnicity).

Stratification was used to control the distribution of the sample. When within stratum variances are smaller than the variances in the general population, and at the same time the stratum averages are different from each other, stratified designs will have smaller variances than unstratified designs. Stratification also ensures that the entire range of variability exhibited in the population is represented to some degree in the sample. Strata were constructed that were congruent, so far as possible, with the key reporting domains of interest. This provides the maximum control over the distribution of the sample with respect to the key domains.

The dimensions of stratification and the maximum number of levels in each dimension are summarized in Table 1. In both the *SHS* and the *EOS* designs, levels of stratification were collapsed within a dimension as needed to provide strata large enough to avoid the introduction of unnecessary unequal weighting effects.[1] The stratum definitions used in the *SHS* design are listed in detail in Appendix A, Table A-1. Those used in the *EOS* design are listed in Table A-5.

Domain Definitions

The term "domain" refers to those subgroups of the population that are of analytic interest. A single person can simultaneously belong to one or more domains. The set of domains depends largely on the interests of the investigators analyzing the data. Key domains are defined in advance of the survey for determining the sample size and allocation.

Domains defined at the level of the overall population are termed main effect domains in this discussion. First-order domains are defined by crossing pairs of main effect domains, for example, gender by race. Higher order domains are defined by crossing additional variables. In addition to being important in their own right, variance constraints imposed on main effect domains ensure that increases in the variances of these domains due to the effects of unequal weighting of the observations belonging to the component interaction domains do not compromise the overall domain estimates.

For the *SHS* design, a total of 124 reporting domains were defined. For the most part, the domains were defined using the same variables and variable values as were used for stratification. An additional variable which defines a set of domains describing the representation of women in different occupations was added. Occupation specialties for officers and enlisted personnel was divided into quartiles based on the proportion of women. Within the first quartile (which might be described as the most extremely male dominated occupations) four domains were defined to further identify those occupations with the very lowest representation of women. Otherwise, the domains were defined by the quartiles of the distribution, providing a total of seven occupational domains.

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[1] The unequal weighting effect is calculated as $1+CV^2$ where CV denotes the coefficient of variation of the weights. The unequal weighting effect is one component of the survey design effect.

Table 1.
Dimensions and Levels of Stratification

Dimension		Levels
Service		Army
		Navy
		Marine Corps
		Air Force
		Coast Guard
		Reserves and National Guard (AGR/TARS)
Location[a]		United States
		Overseas
Paygrade	SHS	Enlisted Grades E1 to E4
		Enlisted Grades E5 to E9
		Officer Grades WO1 to WO5 & O1 to O3
		Officer Grades O4 to O6
	EOS	Enlisted Grades E1 to E3
		Enlisted Grade E4
		Enlisted Grades E5 to E9
		Officer Grades WO1 to WO5 & O1 to O3
		Officer Grades O4 to O6
Gender	*SHS*	Male
		Female
	EOS	gender not used
Race/Ethnicity	*SHS*	non-Hispanic White
		non-Hispanic Black
		Hispanic any race
		Other
	EOS	non-Hispanic White
		non-Hispanic Black
		Hispanic any race
		American Indian/Alaskan Native
		Asian/Pacific Islander
		Other
Unknown		

[a] Levels of this Dimension were operationalized in slightly different ways.

A total of 170 domains was defined in the *EOS* design. Again, the domain definitions reflect the variables and variable values used in stratifying the sampling frame. In addition to the stratification variables, the *EOS* design included the overall population itself among the main effect domains. This feature allows the variability of estimates of parameters describing the total inferential population to be constrained along with the other reporting domains.

The numbers of main effect, first-order and second-order interaction domains used to determine the *SHS* allocation are summarized in Table 2 and listed in detail in Appendix A, Table A-2. Those used for the *EOS* allocation are summarized in Table 3 and listed in detail in Appendix A, Table A-6.

Prevalence Rates

An important survey design consideration is the anticipated sizes of the survey estimates. Many of the survey estimates of interest from *SHS* and *EOS* are proportions (e.g., the proportion of persons who reported having experienced unwanted or uninvited sexual attention), and these proportions are to be estimated for populations domains (e.g., females). For survey design purposes, the size of the proportion rather than the set of characteristics that define it, is the important design consideration. In this section, proportions are described as "prevalence rates" to distinguish them from other quantities such as relative domain sizes. Precision requirements are specified as the maximum values of the sampling variances desired to be associated with the domain-level prevalence rates.

Prevalence rate values having policy implications are typically those chosen for design purposes. Choosing the rates requires knowledge of the uses to which the results of the survey will be put. The above example, persons reporting having experienced at least one of the behaviors that define unwanted sexual attention, provides a case in point. For the *SHS*, prevalence rates for males were set lower than those for females based on pre-survey expectations that unwanted sexual attention would more frequently be directed toward women than men (i.e., prevalence rates of 0.30 were used for domains defined by males, and prevalence rates of 0.50 were used for domains defined by females).

For the *EOS*, a uniform prevalence rate of 0.50 was adopted for all domains. This choice corresponds to the maximum values of the population variances for the binomially distributed prevalence rates. The prevalence rates forming the basis for the two designs are summarized in Tables 2 and 3 and listed in detail in Appendix A, Tables A-2 and A-6.

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Table 2.
SHS Variance Constraints

Domain Description	Number of Domains	Prevalence Rates	Interval Half-widths
Main Effect Domains	10		
Gender	2	□□3□- 0.5	0.02
Service	6	0.3	0.05
Location	2	0.3	0.03
First-order Domains	50		
Gender by Occupation	14	□□3□- 0.5	0.08
Gender by Race/Ethnicity	8	0.3 - 0.5	0.05
Gender by Service	12	□□3□- 0.5	0.05
Gender by Paygrade Group	12	0.3 - 0.5	0.05 - 0.10
Gender by Location	4	0.3 - 0.5	0.03
Second-order Domains	64		
Gender by Service by Paygrade Group	64	0.3 - 0.5	0.05 - 0.10
Total	124		

Table 3.
EOS Variance Constraints

Domain Description	Number of Domains	Prevalence Rates	Interval Half-widths
Main Effect Domains	20		
Total Population	1	0.5	0.02
Race/Ethnicity	6	0.5	0.012 -0.025
Service	6	0.5	□□2□- 0.03
Location	2	0.5	0.02
Paygrade Group	5	0.5	0.02
First-order Domains	90		
Race/Ethnicity by Service	30	0.5	0.03 - 0.05
Race/Ethnicity by Gender	10	0.5	0.05
Race/Ethnicity by Location	20	0.5	0.04
Race Ethnicity by Paygrade Group	30	0.5	0.05
Second Order Domains	60		
Race/Ethnicity by Service by Paygrade Group	60	0.5	0.05 - 0.08
Total	170		

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Variance Constraints

As noted in the previous section, precision requirements are specified as the maximum values of the sampling variances desired to be associated with the domain-level prevalence rates. In general, the precision requirements can be specified in a variety of ways, depending on the population parameters to be estimated and on the preferences of the investigator. For the surveys cited here, the specifications took the form of the confidence interval half-widths for each of the domain-level prevalence estimates. The required values of the variances were then computed from the specified intervals.

In practice, the process of specifying the variance constraints tends to be iterative because the initially specified constraints often require sample sizes that exceed budget realities. The confidence interval half-widths need to be small enough to provide an informative study, but not be so restrictive as to be unaffordable by requiring a very large sample size. The numerical procedure used to compute the sample size and allocation involved the use of generalized Lagrange multipliers (see Mason et al., 1995). If values of the Lagrange multipliers are initialized to those values that satisfy the variance constraints individually, then those constraints that are the most important in determining the allocation solutions, and by implication the survey costs, can be identified. They will have final Lagrange multiplier values closest to the initial values. Constraints that are superfluous (i.e., are coincidentally satisfied with the imposition of other constraints) will have final Lagrange multiplier values of zero. By relaxing some of the variance constraints that are driving the solutions, quite impressive cost reductions can often be achieved.

The constraints used in the *SHS* and *EOS* designs are summarized along with the other relevant domain information in Tables 2 and 3 and are specified in detail in Appendix A, Tables B-2 and B-6. For example, in Table A-2, the first domain specified is for Males. The "Domain Size" column indicates that the were 1,472,653 males on the sampling frame, and the "Population Proportion" column indicates that males comprised the proportion 0.873 of the total population. The "Prevalence" and "Precision Constraint" columns indicate that a prevalence of 0.3 was specified for this domain, and that the desired maximum half-width of a 95% confidence interval for a prevalence of this size for this domain was 0.02.

Cost Coefficients

An infinite number of allocation solutions exist that will satisfy the specified set of variance constraints. Of specific interest are the unique solutions that jointly satisfy the constraints for the least cost. To this end equations were developed that describe the variable survey costs in relation to the design parameters and the sample sizes; these equations are referred to as the "cost model." Variable survey costs are those that change in response to changes in the sample size and allocation, as opposed to fixed costs that do not. The design parameters are the constants in the equations and the sample sizes are the unknowns.

The cost models used in developing the sample designs for *SHS* and *EOS* included terms for data collection, data editing, and data processing. These costs models are described in detail in the statistical methodology reports for these surveys (Mason et al., 1996; Wheeless et al., 1997). The cost model is based on a simplified version of the data collection procedures actually used in the survey, in part because the surveys were designed before all the data collections details had been finalized. The data collection procedures for the two surveys are described for *SHS* by Edwards et al. (1997), and for *EOS* by Elig et al. (1997).

The minimum cost allocation was obtained by minimizing the cost function subject to the imposed variance constraints. For both the *SHS* and the *EOS*, the cost model included data collection, data editing and data processing costs. The data collection costs used in designing the *SHS* were based on two mailings, although three mailings were actually undertaken in the operational phase of the survey. The redesign exercise included updating the cost coefficients to include the per package average costs for three mailings. The cost model used three mailings in the *EOS* design and operational phases.

As defined in the cost model, a mailing was counted each time a package containing a questionnaire is sent to a sample person. In the operational phase of both the *SHS* and the *EOS*, an initial package explaining of the survey, its importance, DoD sponsorship, and soliciting cooperation was sent to the individuals in each sample. The introductory package was followed by a package containing the questionnaire and instructions for completing and returning it. Under the convention used in the cost model, these two packages are counted as a single mailing. A second letter was sent to thank persons who had already returned the questionnaire and ask persons who had not to do so. The second letter was followed by second and third mailing of the questionnaire to nonrespondents. As noted earlier, this description is a simplification of the actual data collection procedures that were followed during the fielding period of the surveys.

The per mailing cost coefficients for each of the three mailings and for the data editing and data processing steps are provided in Table 4 together with the proportion of the total response rate expected to be obtained as a result of each mailing.

Table 4.
Cost Coefficients

Cost Item	Original *SHS* Design		Original *EOS* Design		Updated *SHS* and *EOS* Designs	
	Cost Coefficient	Proportion Total Response	Cost Coefficient	Proportion Total Response	Cost Coefficient	Proportion Total Response
Mailing 1	$2.21	0.67	$2.35	0.60	$2.35	0.60
Mailing 2	$1.31	0.33	$1.45	0.30	$1.45	0.30
Mailing 3	-	-	$1.45	0.10	$1.45	0.10
Data Editing	-		$1.45		$1.45	
Data Processing	$2.11		$2.27		$2.27	

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Response Rates

To compute the data collection cost coefficients, the information in Table 4 was combined with stratum-level response rates to compute the per respondent average data collection cost in each of the design strata. Response rates for mail surveys of military personnel are correlated with such factors as Service, paygrade, gender and race and ethnicity of the sample individuals (see, e.g., Mason et al., 1996). In the original *SHS* design, stratum-level response rates were determined using the experience obtained from the 1992 Active Duty Survey (ADS92). ADS92 is described by Westat, Inc. (1993). The response rates used for designing the *SHS* were simply assigned after examining the observed (i.e., unweighted) response rates reported for the ADS92 in relation to the *SHS* design strata. For the *EOS* the ADS92 information was used by DMDC in a linear model that accounted for the effects of Service, paygrade, gender, race/ethnicity and their first-order interactions to predict the stratum-level response rates. Because the ADS92 did not sample the Coast Guard, the Coast Guard rates used in the *EOS* design were assigned using the results obtained for the Army and Air Force based on similarities found in the *SHS* between these two Services and the Coast Guard. The predicted response rates were modified for use in the *EOS* because of the different nature the *EOS* and ADS92 surveys. Specifically, rates for minorities were increased by 5% and rates for Whites were decreased by 5%.

For purposes of this redesign activity, the response rate information was updated for each survey using the observed stratum-level response rates experienced for each of the surveys. This allows comparisons of the designs using the anticipated and actual response rates.

The modeling approach used for determining response rates to use for the *EOS* is generally preferred over using observed stratum-level response rates. This is because the actual response rates have a random error component. In this context, repeated applications of the survey using the same design, survey instruments, and data collection procedures can be expected to produce a range of response rates for the same groups of individuals. To some extent, the values in the experienced range can be predicted from the characteristics of the individuals making up the group, such as those mentioned above. To the extent that this is not possible, the response rate experience reflects random variation from one application of the survey to the next. Thus, rates that are very low or very high on one application (i.e., rates approaching the extreme values of the distribution of the random component) can be expected to be less extreme on the next application, in fact regressing toward the mean of the distribution.

Thus, a better way to provide updated the response rate information for an upcoming survey would be to include the stratification variables as explanatory variables in a model to predict the response rates at the level of the population (i.e., fitting the model using fully weighted data). Some investigators might prefer using a logistic model for the purpose, but given the ranges of response rates experienced in these surveys, a linear model approach is likely sufficient. Fixing the explanatory variables at the same values used to construct the strata and using the model to predict the stratum-level response rates produces estimates of the mean of the experienced response rate distribution for that segment of the total population that comprises the stratum. As noted earlier, DMDC investigators used essentially this same procedure in developing the response rates used in the *EOS* design. This modeling activity could be expected

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to take 30 to 40 hours of analyst time, compared to 5 to 6 hours when the observed response rates are used directly.

The distributions of response rates used to design the *SHS* and the *EOS* are compared with the experienced distributions in Table 5. The table shows the quintiles of each of the distributions. Agreement between the distribution used in the design and the experienced distribution appears greater for the *EOS* than for the *SHS*. The stratum-level distributions for the *SHS* are shown in Appendix A, Table A-3 and for the *EOS* in Appendix A, Table A-7. Table A-3 shows that for *SHS* the experienced stratum-level response rates are generally the same or higher than the rates used for the design. Table A-7 shows that for *EOS*, the experienced stratum-level response rates are generally lower than the rates used for the design. For example, from Table A-7, for the first stratum (Army, U.S., E1-E3, non-Hispanic Whites), the response rate used for the *EOS* design was 0.362 (or 36.2%), and the response rate actually experienced was slightly lower at 0.346 (or 34.6%).

Results

The original and revised allocation solutions obtained for the *SHS* are presented in Appendix A, Table A-4 and those obtained for the *EOS* in Appendix A, Table A-8. For the *SHS*,[2] the precision constraints given the original design specifications are satisfied given a total of 29,061 observations distributed as indicated in Table A-4. For example, the first row of Table A-4 gives the original and redesign allocation and number to be selected (after inflating for nonresponse) for the first stratum in *SHS*. The original design called for a final respondent sample size of 291 and number to be selected of 736. The corresponding numbers in the redesign are 296 and 779. To obtain this number of observations given the originally specified response rates, a

Table 5.
Comparison of the Design and Experienced Response Rate Distributions

Quintile	Sexual Harassment Survey		Equal Opportunity Survey	
	Design Distribution	Experienced Distribution	Design Distribution	Experienced Distribution
20%	0.42	0.45	0.50	0.44
40%	0.49	0.56	0.59	0.55
60%	0.60	0.66	0.65	0.65
80%	0.70	0.75	0.71	0.74

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[2] The allocation and sample size given here as the "original design" differs slightly from the sample size actually fielded for Form B. In some small strata the total allocations for Forms A, B, and C exceeded the population size, and the population size was proportionately allocated to the three survey. In addition, the allocation to the unknown stratum was changed to use a proportional allocation. The allocations in this report assume that only one survey would be fielded a time and use a proportional allocation to the unknown stratum.

total sample size of 50,768 persons distributed as indicated in Table A-4 is required. Using the revised response rates and cost coefficients, 29,024 observations distributed as indicated in Table A-4 are required to satisfy the same constraints, requiring a total sample size of 46,454 persons. The numbers of observations needed (29,061 vs. 29,024) are about the same, and about 4,300 fewer are needed in the redesigned sample to satisfy the precision constraints for the least cost. The lower sample size is due to experienced response rates being generally higher than the original design rates.

For the *EOS*, the original design specified a total of 46,115 observations and a total sample size of 76,754 persons. The *EOS* redesign specified a total of 46,280 observations and a total sample size of 82,385 persons. The allocations of the *EOS* samples are provided in Table A-8. The numbers of observations needed in the two versions of the *EOS* design to satisfy the precision constraints are fairly close (46,115 vs. 46,280). To obtain this number of observations using the actual response rates would require a sample about 5,600 larger (76,754 vs. 82,385); the reason for this is due to experienced response rates for *EOS* being lower than those used in the design, particularly for minority groups who were oversampled relative to their proportion in the population.

Key variance constraints, that is, those constraints that are the major determinants of the allocation solutions, can be identified by examining the ratio of the final to the initial values of the Lagrange multipliers. The ratios most closely approaching unity (or 100 percent) identify the most important constraints. The information for the ten most important constraints given the original and the revised SHS design parameters are shown in Tables 6 and 7. As might be expected, each of the constraints reported in Tables 6 and 7 involve second-order domains, that is, domains defined by crossing three variables. The highest order domains are usually among the smallest domains represented in the inferential population and for this reason, other things being equal, they would be expected to be among the more influential determinants of the allocation solutions.

However, other things are seldom equal. In general, the relative importance of a constraint increases as the relative variance implied by the constraint is made smaller, involving both the associated prevalence rate and the confidence interval half-width. Further, if a domain is well represented in a large number of strata where the per unit average stratum costs are not excessive, the importance of the associated domain constraint is decreased. The sizes of the strata in which the domain is represented, the (relative) size of the domain in each of the strata, and the per unit average stratum cost all act to determine the importance of a variance constraint.

Of the 124 constraints imposed on the *SHS* design, 10 were imposed on main effect domains, 50 on first-order domains, and 60 on second-order domains. All of the main effect domain constraints were satisfied coincidentally with others (i.e., had final Lagrange multiplier ratios approaching zero). Of the 50 first-order domains, 11 can be identified as having an influence on the allocation solutions. The average Lagrange multiplier ratio for these 11 was 0.498. Nineteen of the 64 second-order constraints can be identified as influential, with an average Lagrange multiplier ratio of 0.786.

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Table 6.
Key Constraints Original SHS Design

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Lagrange Multiplier Ratio %
85	Female Coast Guard E7 to E9	0.007	0.5	0.10	100
87	Female Coast Guard Field Grade Officers	0.004	0.5	0.10	100
107	Male Coast Guard Warrant and Commissioned Officers	0.406	0.3	0.06	99
118	Male Coast Guard E1 to E3	0.337	0.3	0.06	99
83	Female Coast Guard E4	0.033	0.5	0.10	98
74	Female Marine Corps Field Grade Officers	0.009	0.5	0.10	98
117	Male Air Force E1 to E3	3.592	0.3	0.06	96
69	Female Marine Corps E1 to E3	0.186	0.5	0.05	94
111	Male AGR/TAR Warrant and Commissioned Officers	0.625	0.3	0.06	92
95	Male Marine Corps Warrant and Commissioned Officers	1.019	0.3	0.06	91

Table 7.
Key Constraints SHS Redesign

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Lagrange Multiplier Ratio %
85	Female Coast Guard E7 to E9	0.007	0.5	0.10	100
87	Female Coast Guard Field Grade Officers	0.004	0.5	0.10	100
118	Male Coast Guard E1 to E3	0.337	0.3	0.06	99
74	Female Marine Corps Field Grade Officers	0.009	0.5	0.10	98
83	Female Coast Guard E4	0.033	0.5	0.10	98
107	Male Coast Guard Warrant and Commissioned Officers	0.406	0.3	0.06	98
117	Male Air Force E1 to E3	3.592	0.3	0.06	96
69	Female Marine Corps E1 to E3	0.186	0.5	0.05	95
111	Male AGR/TAR Warrant and Commissioned Officers	0.625	0.3	0.06	92
72	Female Marine Corps E7 to E9	0.028	0.5	0.10	91

The design effect measures the efficiency of the design with respect to each of the domain estimates. The design effect is the ratio of the sampling variance given the design to the sampling variance that would be obtained had a simple random sampling design with the same number of observations been used. For these designs, the design effect provides a combined measure of the effect of stratification and the unequal weighting effect resulting from the disproportionate allocation of the sample to the design strata. Design effects of one are as efficient as a simple random sample. Design effects less than one are more efficient, and those greater than one are less efficient. Of course a simple random sample with 29,061 observations, the number of observations required in the originally specified *SHS* design, would not satisfy the variance constraints imposed on the *SHS* design.

In those cases where stratum and domain definitions are congruent, the design effect associated with the estimated prevalence rate for the domain is one. Under this circumstance the stratified random sampling design and a simple random sampling design are equivalent with respect to the domain in question. More usually, domains are represented in several strata, and the domain itself is likely to be defined in terms of other domains. The domain of all women, for example, is the aggregate of the women in each Service, paygrade, and racial/ethnic category. Under these circumstances, if the sample allocation is other than strictly proportional to the stratum sizes, the design effect will be greater than one because of inflation of the sampling variances due to the unequal weighting of the observations obtained from persons who comprise the domain.

Thus, generally increasing design effects are expected proceeding from second-order domains through main effect domains. For the *SHS*, the average design effect over all 64 second-order domains is 1.36. Over all 50 first-order domains the average design effect is 1.76 and over all 10 main effect domains the design effect is 4.17, for an overall average of 1.80.

An overall average design effect of 1.80 is easily considered to be indicative of a reasonably efficient design. However an argument can be made that the design could perhaps be improved with respect to the domain estimates associated with the highest values of the design effects. The 10 domains with the highest design effects are listed in Table 8 for the original *SHS* design and in Table 9 for the redesign. In seeking to improve efficiency with respect to the domains identified in the tables, the investigator is faced with the choice of redefining the strata to provide an improved degree of control over the distribution of the sample with respect to these domains, and/or relaxing the precision constraints imposed on the component domains. However given that the specified variance constraints for these domains are satisfied by the sample allocation, the additional effort required for such a small refinement is easily questioned.

The same results obtained for the *EOS* are reported in Tables 10 through 13. Tables 10 and 11 identify the ten most important constraints given the original and revised *EOS* designs. Unlike the *SHS*, in which the ten most important constraints were uniformly associated with second order domains, two of the ten *EOS* constraints are associated with first order constraints and one with a main effect domain. Of the total of 170 domains upon which constraints were placed, six of the 20 main effect domain constraints can be identified as having an influence on the allocation solutions, with an average Lagrange multiplier ratio of 0.473. Twenty-eight of the 90 first-order domain constraints had an influence on the solutions, with an average Lagrange

multiplier ratio of 0.595. Of the 60 second-order constraints, 19 can be identified as having an influence on the allocation solutions, with an average Lagrange multiplier ratio of 0.703. The pattern of constraints is similar to that obtained for the *SHS*, in that the second-order constraints have, on average, the most influence on the allocation solutions, followed in turn by the constraints placed on first-order domains and main effect domains.

A total of 333 domains were actually defined for the *EOS*, although variance constraints were placed on only 170. The overall average design effect over all 333 domains is 1.97. Although marginally higher than the average obtained for the *SHS* (over 124 domains), a design effect of this size is still easily considered indicative of an efficient design. The average design effect over 120 second-order domains was 1.57; over 148 first-order domains, 1.71, and over 65 main effect domains, 3.34. The domains with the ten largest design effects are identified in Tables 12 and 13. For the *EOS*, the 10 highest design effects in both the original design and the redesign are associated with main effect domains. As discussed with respect to the *SHS* design, this result is expected due to the disproportionate allocation of the sample in response to the variance constraints placed on the higher order domain estimates. Constraints placed on the main effect domains ensure that the variances of these estimates are competent given the objectives of the survey

Table 8.
Largest Design Effects Original SHS Design

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Design Effect
9	Coast Guard	2.164	0.3	0.05	6.87
3	US	80.003	0.3	0.03	5.46
10	AGR/TAR	3.949	0.3	0.05	4.71
7	Marine Corps	10.313	0.3	0.05	4.67
8	Air Force	24.660	0.3	0.05	4.52
21	Female First Quartile low 4	0.475	0.5	0.08	4.07
6	Navy	27.187	0.5	0.05	3.98
5	Army	31.739	0.3	0.05	3.85
20	Female First Quartile low 3	1.367	0.5	0.08	3.85
4	Overseas	19.997	0.3	0.03	3.85

Table 9.
Largest Design Effects SHS Redesign

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Design Effect
9	Coast Guard	2.164	0.3	0.05	6.84
3	US	80.003	0.3	0.03	5.46
7	Marine Corps	10.313	0.3	0.05	4.69
10	AGR/TAR	3.949	0.3	0.05	4.63
8	Air Force	24.660	0.3	0.05	4.51
5	Army	31.739	0.3	0.05	4.48
21	Female First Quartile low 4	0.475	0.5	0.08	4.06
6	Navy	27.187	0.5	0.30	3.97
20	Female First Quartile low 3	1.367	0.5	0.08	3.85
4	Overseas	19.997	0.3	0.03	3.81

Table 10.
Key Constraints Original EOS Design

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Lagrange Multiplier Ratio %
202	Coast Guard E1 to E4 non-Hispanic Black	0.053	0.5	0.050	100
206	Coast Guard E5 to E9 non-Hispanic Black	0.081	0.5	0.050	100
207	Coast Guard E5 to E9 Hispanic (any race)	0.045	0.5	0.050	99
203	Coast Guard E1 to E4 Hispanic (any race)	0.068	0.5	0.050	99
201	Coast Guard E1 to E4 non-Hispanic White	0.639	0.5	0.050	98
35	Other Race/Ethnicity	1.499	0.5	0.025	98
210	Coast Guard Warrant and Commissioned Officers non-Hispanic Black	0.014	0.5	0.080	97
205	Coast Guard E5 to E9 non-Hispanic White	0.787	0.5	0.050	95
246	Field Grade Officers non-Hispanic Black	0.378	0.5	0.040	91
265	Field Grade Officers Asian and Pacific Islander	0.102	0.5	0.040	90

Table 11.
Key Constraints EOS Redesign

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Lagrange Multiplier Ratio %
202	Coast Guard E1 to E4 non-Hispanic Black	0.053	0.5	0.050	100
201	Coast Guard E1 to E4 non-Hispanic White	0.639	0.5	0.050	99
203	Coast Guard E1 to E4 Hispanic (any race)	0.068	0.5	0.050	99
206	Coast Guard E5 to E9 non-Hispanic Black	0.081	0.5	0.050	99
207	Coast Guard E5 to E9 Hispanic (any race)	0.045	0.5	0.050	99
210	Coast Guard Warrant and Commissioned Officers non-Hispanic Black	0.014	0.5	0.080	98
35	Other Race/Ethnicity	1.499	0.5	0.025	98
205	Coast Guard E5 to E9 non-Hispanic White	0.787	0.5	0.050	95
246	Field Grade Officers non-Hispanic Black	0.378	0.5	0.040	90
247	Field Grade Officers Hispanic (any race)	0.137	0.5	0.040	89

Table 12.
Largest Design Effects Original EOS Design

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Design Effect
37	Female	13.030	0.5	0.03	6.95
23	Warrant and Company Grade Officers	9.877	0.5	0.03	6.44
24	Field Grade Officers	5.894	0.5	0.04	6.10
39	High Black Density	34.101	0.5	0.02	6.06
43	High Minority Density	35.700	0.5	0.02	6.05
41	High Hispanic Density	43.471	0.5	0.02	6.02
13	Other Race/Ethnicity	2.664	0.5	0.05	5.84
12	Asian and Pacific Islander	6.213	0.5	0.03	5.06
40	Low Hispanic Density	55.935	0.5	0.01	4.85
42	Low Minority Density	63.707	0.5	0.01	4.80

Table 13.
Largest Design Effects EOS Redesign

Domain Number	Description	Relative Domain Size %	Prevalence	Variance Constraint	Design Effect
37	Female	13.030	0.5	0.03	6.96
23	Warrant and Company Grade Officers	9.877	0.5	0.03	6.42
39	High Black Density	34.101	0.5	0.02	6.07
43	High Minority Density	35.700	0.5	0.02	6.06
24	Field Grade Officers	5.894	0.5	0.04	6.05
41	High Hispanic Density	43.471	0.5	0.02	5.98
13	Other Race/Ethnicity	2.664	0.5	0.05	5.91
12	Asian and Pacific Islander	6.213	0.5	0.03	5.11
40	Low Hispanic Density	55.935	0.5	0.01	4.86
42	Low Minority Density	63.707	0.5	0.01	4.79

Response Rates and Missing Data Compensation Procedures

The overall eligibility adjusted unit response rate for the *SHS* was 53.4%, and the overall eligibility adjusted unit response rate for the *EOS* was 52.7%. These response rates are good for mail surveys, but are fairly low compared to many surveys conducted in person or by telephone. This section discusses the following issues related to response rates and missing data compensation procedures:

- Potential bias due to unit nonresponse. Survey respondents may behave differently than nonrespondents with respect to items covered in a questionnaire, and this can cause bias in the estimates. The bias potential is greater when response rates are lower compared to when they are higher.

- Methods that might be considered to increase response rates. Some ideas that are mentioned have no practical use for DMDC but are mentioned for completeness. Others, while potentially useful, would require testing and further work to determine whether they are feasible, the costs, and whether any increase in response rates would decrease the bias enough to justify the costs.

- Missing data compensation procedures for unit nonresponse. A weighting class adjustment procedure was used for *SHS*, and a response propensity logistic model was used for *EOS*. While more time consuming to implement, the response propensity model has the potential for greater bias reduction.

- Missing data compensation procedures for item nonresponse. A brief mention is made of procedures for item nonresponse.

- Response rate definitions. The term "response rate" is not used consistently in survey research. Discussion is given to the CASRO rate (reported by DMDC in most reports) compared to the rate reported in the statistical methodology reports.

Potential Bias Due to Unit Nonresponse

This section attempts to quantify the potential for bias in the survey estimates due to nonresponse for the *SHS* Form B. The potential bias demonstrated in this section shows the worst case since the missing data compensation procedures used for *SHS* and *EOS* (i.e., weighting class adjustments and response propensity weight adjustments) adjust for some missing data biases. Nonresponse bias can cause a sample estimate of a population value to be larger than the population value (positive bias) or smaller than the population value (negative bias). Bias occurs if the survey items of interest are different for nonrespondents and respondents. Tables A-3 and A-7 give the experienced response rates for the strata (many of which may be important analysis domains) for *SHS* and *EOS*. Table B-18 in Mason et al. (1996) gives *SHS* response rates and 95% confidence intervals for some important analysis domains defined by the stratification variables. These response rates for *SHS* are highly variable,

depending on Service, paygrade, and race/ethnicity. For example, only 39% of sampled Marine Corps personnel responded, 48% of Army personnel, 53% of Navy personnel, and 57% of Air Force personnel. Among paygrade groups, E1-E4s had the lowest response rate (38%) and senior commissioned officers the highest (75%).

Response variable values (i.e., questionnaire data) are missing for the nonrespondents, and the actual biases associated with the parameter estimates are unknown. However, the bias potential can be quantified for sample estimates of population proportions using the survey nonresponse rates. The bias associated with an estimated proportion can be bounded above and below. The bounds show the worst case because the procedures used to compensate for missing data (e.g. nonresponse weight adjustments and poststratification) should reduce the biases to much less than the extremes indicated by the bounds.

The following algebraic expressions give the minimum (i.e., most negative) and the maximum (i.e,. most positive) bias that can occur with the sample estimate of a population proportion, P. Let $\hat{P}$ denote the estimated proportion based on the respondents. (This proportion is also referred to as the "prevalence", and 100 times the proportion is referred to as the "percentage.") Then bias $(\hat{P}) = E(\hat{P}) - P$ where $E(\hat{P})$ denotes the expected value, or average, of $\hat{P}$ over repeated samples. Also, let N_R denote the number of respondents to *SHS*, and let $N_{\bar{R}} = N - N_R$ denote the number of nonrespondents. The minimum and maximum bias (given by Potter et. al. 1997) are:

$$\min\{\text{bias}(\hat{P})\} = \frac{N_{\bar{R}}}{N_R}(P-1), \text{ if } \frac{N_{\bar{R}}}{N} \leq P \leq 1$$

$$= -P, \text{ if } 0 \leq P \leq \frac{N_{\bar{R}}}{N}$$

$$\max\{\text{bias}(\hat{P})\} = \frac{N_{\bar{R}}}{N_R}P, \text{ if } 0 \leq P \leq \frac{N_R}{N}$$

$$= 1 - P, \text{ if } \frac{N_R}{N} \leq P \leq 1$$

That is, if the value of the proportion in the population, P, is greater than the nonresponse rate then the minimum bias is equal to the ratio of nonrespondents to respondents time P-1. If the value of the population proportion is less than the nonresponse rate, then the minimum bias is equal to the negative of the proportion. Similarly, the maximum bias is equal to the ratio of nonrespondents to respondents times the value of the population proportion if the proportion is less than the response rate, and it is equal to (1-P) if the proportion is greater than the response rate. Note that the proportion and the rates in these expressions are population parameters.

Table 14 gives the minimum bias and the maximum bias for a range of response rates (40%, 50%, 60%, 70%, and 80%) and a range of percentages rates (10% to 70%). For example, with a response rate of 60% and a population percentage of 30%, the minimum bias in the estimated percentage would be -30% and the maximum bias 20%. With a higher response rate such as 80% and population percentage of 30% the bounds are tighter; the minimum bias would be -18% and the maximum bias would be 8%.

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For small proportions (i.e. proportions smaller than the response rate) there is greater opportunity for negative than for positive bias. This suggests that issues that are based on small proportions or prevalence rates may be sensitive to underreporting. For large proportions (i.e. proportions greater than the response rate) the survey estimates may be sensitive to overreporting. In either case, the potential bias diminishes as the response rate increases.

As noted earlier, the potential bias given here is a worst case scenario. However, it is probably overly optimistic to expect a missing data compensation procedure (whether a weighting class adjustment or a modeling procedure such as response propensity modeling) to completely adjust for missing data biases. Most nonresponse compensation procedures cannot provide a definitive prediction of every sampled person's response propensity. For example, if the response rate is 60% and a procedure was successful in reducing the potential bias by 65%, then the interval around the expected value of a sample estimate of a population proportion of 0.30 is reduced (becoming -20% to 13%, assuming the model is equally successful in reducing biases in both directions) but not eliminated. Again, this argues for attempting other measures to increase the response rate.

Methods to Increase Response Rates

This section discusses some potential methods for increasing response rates, and some potential problems with these methods. Some of the methods are obviously not feasible for DMDC, but are mentioned for completeness; these include the use of additional mailings and shortening the questionnaire. Another method, while potentially useful, would require much work to pilot test, determine the costs, and whether the additional cost would be justified for the expected gain in response rate; this is the use of a double sampling approach to estimate parameters for the nonrespondents. These methods are discussed in this section.

Additional Mailings

Additional mailings to nonrespondents is mentioned here for completeness, but is not considered feasible. For the *SHS*, all eligible sample members could have received up to five different packages: notification letter, a wave 1 letter, and survey, a reminder/thank-you letter, a wave 2 letter and survey, and a wave 3 letter and survey (Edwards et al., 1997). A fourth or even fifth wave could have been attempted, however, sample members who have already ignored up to three mailings of a questionnaire are not likely to have a change of heart, even if the fourth request is much shorter than the others. Additional mailings would add to the survey cost with only small returns because of the large numbers of questionnaires that would be mailed compared to the number returned. Additional mailings would also add time to the already long data collection schedule.

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Table 14.
Minimum and Maximum Bias Associated with a Range of Response Rates and Prevalence Rates

Response Rate	Percentage Rate	Minimum Bias	Maximum Bias
40%	10%	-10%	15%
	20%	-20%	30%
	30%	-30%	45%
	40%	-40%	60%
	50%	-50%	50%
	60%	-60%	40%
	70%	-45%	30%
50%	10%	-10%	10%
	20%	-20%	20%
	30%	-30%	30%
	40%	-40%	40%
	50%	-50%	50%
	60%	-40%	40%
	70%	-30%	30%
60%	10%	-10%	7%
	20%	-20%	13%
	30%	-30%	20%
	40%	-40%	27%
	50%	-33%	33%
	60%	-27%	40%
	70%	-20%	30%
70%	10%	-10%	4%
	20%	-20%	9%
	30%	-30%	13%
	40%	-26%	17%
	50%	-21%	21%
	60%	-17%	26%
	70%	-13%	30%
80%	10%	-10%	3%
	20%	-20%	5%
	30%	-18%	8%
	40%	-15%	10%
	50%	-13%	13%
	60%	-10%	15%
	70%	-8%	18%

Note. These biases are expected to be decreased by the unit nonresponse compensation procedures.

Decreasing Length of Questionnaire

Decreasing the size of the questionnaire might be another possibility for increasing the response rate. The *Form C* questionnaire (which was 12 pages long) had a 3% higher response rate than did the longer *SHS* questionnaire (which was 16 pages long). However, 3% is a small increase and is not likely decrease the nonresponse bias enough justify the number of questions (and hence information obtained from the survey) that would need to be dropped in order to reduce the questionnaire by 4 pages.

Double Sampling for Nonresponse

Double sampling for nonresponse is mentioned here as an idea for future research and methodological study. To the best of our knowledge, this has not been tried on DMDC surveys and would need pretesting on small samples to determine (a) if the method is feasible operationally, (b) the costs, and (c) whether information could be obtained from enough nonrespondents to result in a decrease in nonresponse bias.

With multiphase (usually double) sampling designs (Hansen & Hurwitz, 1946), a series of two or more data collection procedures would be used, each implemented on a sample on nonrespondents to the previous data collection attempt. Nonrespondents to mail surveys are often surveyed by telephone, although in-person interviews could also be used. The data collected at each phase provide unbiased estimates of parameters that describe the responding population at that point. The potential for bias depends on the nonresponse experienced at the last phase. By subsampling nonrespondents, in principle enough resources can be directed at the last phase to make the nonresponse bias potential acceptably small. A subsample of nonrespondents would be selected from each of the strata and contacted by telephone.

As stated earlier, there are some survey design and methodological issues that would need to be addressed in order to apply this idea to the *SHS* and *EOS* surveys. One issue is that many sampled individuals would be hard to reach by telephone because they are deployed, in overseas locations, or aboard ships. Another methodological issue is the possibility of a mode effect. For the types of questions on the *SHS* and *EOS* questionnaires, persons may respond differently to a telephone interview than to a self-administered questionnaire. The mode effect could be measured by fielding initial samples by mail and telephone and comparing the responses. Another issue that would need to be resolved is that either of these two surveys are probably too long to be administered by telephone, and only a subset of the items would need to be used; this of course would complicate the analyses.

Double sampling has been used effectively for many surveys. Clearly, much work on the sample design (such as sampling fractions, strata to include if all are not used, and design optimization) and methodological issues (mode effects, data collection strategy, and length of questionnaire) would need to be done through pilot tests and methodological studies before implementing this approach on the *SHS* or *EOS*.

Comparison of Methods to Increase Response Rates

Table 15 summarizes some potential benefits and problems with the methods just discussed. The following subsections discusses nonresponse weight adjustments, a commonly used technique which is used to partially adjust for the biasing effects of nonresponse.

Unit Nonresponse Compensation Procedures

This section discusses the procedures used in *SHS* and *EOS* to adjust for the biasing effects of unit nonresponse. Weighting class adjustments were used for *SHS*, and response propensity modeling weight adjustments were used for *EOS*. The goal with both weighting class adjustments and response propensity modeling is for the adjustment to reduce the bias in estimates of the domain parameters and to adjust the estimated size of the domain. Since more variables can be included in the model than can be used as classes, the adjusted weights derived from the modeling procedure have the potential for greater reduction in the nonresponse bias.

For *SHS*, a weighting class adjustment was used with classes formed by sampling strata which were collapsed, or combined, when the number of respondents was small. In collapsing strata, important analysis domains were kept separate. For example, Service, officer/enlisted distinction, and gender were preserved when forming classes.

For *EOS*, a combination of Chi-squared Automatic Interaction Detector (CHAID) (Magidson, 1993) and response propensity modeling was used. CHAID was used to determine the variables and interactions that were potentially important predictors of nonresponse from a larger set of variables than those used for stratification. Additional variables considered were those available on the military record files and included (in addition to race/ethnicity, Service, component, and location which were used for stratification) education, marital status, deployment status, and percent minority density in the occupation (Black, Hispanic, or any minority). CHAID completely divided the sample into a set of disjoint segments, with differing response rates. These segments were then used in a logistic model along with the interaction terms race by paygrade and race by location to predict the probability of response and to obtain an adjustment factor.

Like response propensity adjustments, weighting class adjustments multiply the sampling weights for respondents by an adjustment factor to produce analysis weights that, when summed over respondents, equal the sum of the sampling weights for respondents and nonrespondents. The weighting class adjustment factors are computed within classes constructed with the objective of placing nonrespondents in the same class with respondents thought to have substantially similar response variable values. Classes are typically constructed from demographic variables known from previous research to be associated with differences in survey response rates and with differences in responses on key items in the survey. Similar considerations are used to determine the variables to be included in the model for response propensity. The segments identified by CHAID could be used as weighting classes since they subdivide the population into classes.

Table 15.
Some Methods for Increasing Survey Response, and Some Benefits and Problems or Methodological Issues

Method	Possible Benefit	Problems or Methodological Issues
Additional mailings to nonrespondents	Probably none	• Lengthens the already long survey fielding period • Only a few additional responses in exchange for a large number of surveys that would need to be mailed • Not feasible for DMDC
Shortening questionnaire	Might pick up a few additional respondents due to decreased respondent burden	• Items would need to be cut from the questionnaire. This might result in loss of information that needs to be collected. • The number of additional respondents probably wouldn't be enough to result in a noticeable decrease in nonresponse bias.
Double sampling for nonresponse	Has potential to reduce bias since information would be obtained about nonrespondents Cost-variance optimization can be used to determine the sample allocation to strata and to phases	Many issues would need to be addressed to determine if the method would be feasible with the military population Pilot tests and methodological studies would need to be conducted to address issues such as • Additional cost? • Is the response rate that would be obtained from the second phase sample large enough to justify the expense? • Are nonrespondents to these surveys really different from respondents? • How to handle sampled persons in overseas locations? • Questionnaire length for a telephone interview. • Is there a mode effect, and if so, how should this be handled in the estimation? Sample design issues include: • How large a fraction of nonrespondents to sample? • Are response rates large enough in some strata so that the strata wouldn't need to be included in the nonresponse followup? • Optimal allocation

Weighting classes partition the sample in the sense that all individuals are accounted for in the set of classes, and an individual belongs to only one class. For example, if classes are

formed by race and Service, then it is necessary to use the full cross of race and Service as classes. This is not the case with response propensity modeling, where the variables could be entered as main effects or two-way (or higher) interactions. For the *EOS* weights, the segments could have been used for weighting classes, but the model allowed additional (race/ethnicity by paygrade and race/ethnicity by region) to be included as well.

Table 16 compares the unequal weighting effects and adjustment factors from the CHAID/modeling approach with that from a weighting class with only the strata as classes for the 1996 *EOS* for selected domains (specifically, the total sample and the individual Services). The unequal weighting effect is one component of the survey design effect and is sometimes denoted $(1 + CV^2)$ where CV is the coefficient of variation of the weights. Examining the unequal weighting effect is important because it is related to the variance inflation associated with the survey design and the nonresponse adjustment procedure. The first block of Table 16 gives the unequal weighting effect with the original sampling weights (with no adjustment for nonresponse). The unequal weighting effect for the total sample is 3.31, indicating that the variance increase due to unequal weighting is 3.31 times what would be expected with a sample random sample. It is lowest for the AGR/TARS (2.39) and highest for the Navy (3.27)

The second block of Table 16 looks a the unequal weighting effects for the response-adjusted weights, using both the response propensity modeling procedure and the weighting class adjustment. The unequal weighting effects are slightly larger using the CHAID/modeling approach compared to the weighting class adjusted weights (3.51 versus 3.43). For comparison, the unequal weighting effect for the sampling weight (prior to any nonresponse adjustment) was 3.31. The ratio 3.51/3.43 = 1.02 indicates that the variance of an estimate computed using the weight derived from the model will be 1.02 times the variance of an estimate computed using the weight derived from the weighting class procedure; this is not a large increase. The range of the adjustment factors is also greater with the modeling approach: with the modeling approach the adjustment factors ranged from 1.04 to 5.92 and with the weighting class approach the adjustments ranged from 1.18 to 4.05. This is to be expected since the segments created by CHAID split the sampling strata. The increase in the maximum adjustment factors from 4.05 to 5.92 seems large, but does not cause a large increase in the overall variance. Some smaller domains are more affected by the adjustments, hopefully with a decrease in nonresponse bias due to the more elaborate modeling.

The third block in Table 16 presents correlations between the two sets of weights and adjustment factors. Correlations between the weights were examined as a check on the response propensity adjusted weights. Correlations between the weights are high (0.98 or higher), and relatively high for the adjustment factors (0.85 or higher). Correlations between the weights are

Table 16.
Summary of Unequal Weighting Effects and Adjustment Factors for the Sampling Weights,
Response Propensity Adjusted Weights, and Weighting Class Adjusted Weights for the Seven
Domains for the 1996 EOS

	Total Sample	Army	Navy	Marine Corps	Air Force	Coast Guard	AGR/ TARs
Original Sample Weights							
Unequal Weighting Effect	3.31	3.17	3.27	2.46	2.95	2.92	2.39
Response Propensity Model Adjusted Weights							
Unequal Weighting Effect	3.51	3.52	3.47	2.71	3.06	2.64	2.49
Minimum Adjustment Factor	1.04	1.06	1.11	1.18	1.04	1.25	1.08
Maximum Adjustment Factor	5.92	5.86	5.92	4.03	2.47	3.01	3.29
Weighting Class Adjustment							
Unequal Weighting Effect	3.43	3.40	3.37	2.71	3.03	2.64	2.44
Minimum Adjustment Factor	1.18	1.26	1.18	1.30	1.18	1.25	1.18
Maximum Adjustment Factor	4.05	3.59	4.05	4.03	2.28	3.01	2.94
Correlations Between:							
Weighting Class Weight and Response Propensity Adjusted Weight	0.983	0.978	0.979	0.999	0.992	0.999	0.985
Weighting Class Adjustment Factor and Response Propensity Adjustment Factor	0.935	0.898	0.918	0.987	0.853	0.988	0.869

expected to be high since both contain the sampling weight as the base. The correlations between the adjustment factors are also high, likely because many of the same variables (Service, race/ethnicity, paygrade, and location) were used in both adjustment procedures. Correlations between the adjustments are lowest for the Air Force and the AGR/TARs, indicating that these Services may be realizing the greatest effects of the more elaborate modeling.

This analysis shows that the nonresponse adjustments from the two procedures are similar. This is likely because the important determinants of nonresponse are used in both, and because the weight sums are being adjusted to totals by race and paygrade, and race and region. The CHAID/modeling approach leads to slightly higher variances, but the hope is that the bias will be reduced in the estimates due to the additional variables used for adjustments, and that the mean square error of the estimates will be reduced.

Issues to consider when selecting a nonresponse compensation procedure include the response rate obtained in the survey, time and money available for adjusting the weights, and the level of collapsing needed to create weighting classes. There is general agreement in the

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literature (e.g., Folsom & Witt, 1994; Rizzo, Kalton, Brick, & Petroni, 1994) that response propensity modeling is preferred because of the potential for bias reduction due to being able to include more variables in the adjustment. CHAID is a useful tool to be used as a guide for determining variables that may be useful either as weighting classes or in a model. For *EOS* race/ethnicity and paygrade were the most important predictors found by CHAID; these were already included in the sampling stratification. Level of education was also found to be important.

Time and money constraints should also influence the choice of which missing data compensation procedure to use. Modeling is generally more time and labor intensive than weighting class adjustment. Once weighting classes have been determined, weighting class adjustments and quality control can be completed in only a few days.

Response propensity modeling is by far the most time consuming, but also the method with the greatest potential for bias reduction. Determining variables to be used in the model is the first step; this can be done in any number of ways usually used for model building (e.g., stepwise elimination). For *EOS*, CHAID (a mechanical process) was used. The size of the files determines the time needed to select the model because a larger number of variables may be useful predictors and because of the additional computer time and memory needed to run the models. For *EOS* the files were so large that separate computer runs and models were used for each Service and also some Services were split by race in order to have sufficient memory to get the models to run; in all, nine separate models were used for *EOS*. This of course implies the necessity of combining and checking files once the weights were completed. Another issue is that response propensity modeling seems to take longer to document and write up in sections of reports compared to weighting class adjustment. For files the size of those in *EOS*, at least 4 to 6 weeks of time should be allowed for determining the model and adjusting the weights (starting from scratch with a list of variables to screen).

If the weighting class adjustments require that a lot of strata be collapsed then this argues for using response propensity modeling. For example, the *SHS* strata were formed by the cross of Service, paygrade, gender, race, and location. If so many of these strata had to be collapsed that it would compromise some of the analysis domains, then it would be preferable to use a model, perhaps with separate models for each Service, each model containing all two- or three-way interactions of the other variables.

With a limited amount of time to perform nonresponse adjustments on most surveys but a plethora of available data that could be useful for bias reduction, the suggestion is made that DMDC move toward developing a general model that could be used for nonresponse weight adjustments for surveys. Most surveys include Service and paygrade as stratifiers, and these are important predictors of nonresponse. Race/ethnicity and level of education are also important predictors and could be included in the model. Two- and three way interactions of these variables could also be included. Nonresponse analyses conducted by Rizzo and Nixon (1996) may indicate other variables. Our experience with the procedure indicates that it would be time consuming and expensive to begin model building from scratch for each survey, and that it would be helpful to have in place a general model to use as a starting point.

Item Nonresponse

The missing data compensation procedures that were used for *SHS* and *EOS* only addressed unit nonresponse. Not every item was completed on returned questionnaires that were classified as respondents; blank or otherwise missing items are referred to as "item nonresponse." On some returned surveys this includes blocks of missing items, such as when a gate question is not answered. In this case, the questions within the skip patterns are not answered either, and it may not be clear how to classify persons for analysis with respect to the set of questions.

Item nonresponse is often ignored, particularly if the patterns of missing items are sparse. In some cases the distinction between unit and item nonresponse can be obfuscated by practices such as identifying key variables, and then adopting the convention that any questionnaire having at least one of the key variables missing is declared totally missing and included in the unit non-response fraction, ignoring the remaining missing items. Employing practices such as these ignores the possibility of using partial data to help in reducing missing data biases.

Procedures to compensate for item nonresponse tend to involve imputation of the missing items. Most surveys employ logical imputation during a data editing step. The goal with imputation is to compensate for some of the bias resulting from missing item data. The gender of an individual, for example, might be logically imputed from the individual's given name. Hot deck and cold deck procedures extend this basic idea to include a simultaneous consideration of multiple variables. Under these procedures classes are constructed such that the experienced patterns of responses are homogeneous within a class and heterogeneous among classes. When an item is missing, the variable values that are present on the questionnaire are used to identify a class and the missing item is replaced by a random selection from among the respondents in the identified class. Hot deck and cold deck procedures are distinguished accordingly as the "donor" records are obtained from the current survey or from an extant data source (Chapman, 1976). Weighted sequential hot-deck procedures (Cox & Folsom, 1981; Cox & Cohen, 1985) extend the basic concept by adopting a procedure for selecting the donor record such that the weighted donor distribution is reproduced in mathematical expectation.

An important issue to be addressed when developing an imputation procedure is that of preserving the associations among the variables. Simply imputing missing items, using an unsophisticated hot deck procedure for example, could compromise the very associations that are of key interest. The problem can be expressed in terms of the association between a criterion variable, Y, and a set of explanatory variables, $\{X_1, X_2, \cdots, X_p\}$, in a population regression context, or simply the associations among variables in a correlation sense. If, for example, the criterion variable were missing, possible choices of imputed values might reasonably include a hot deck substitution from among donor records with matched values of the X-vector (if categorical) or the value of the criterion variable predicted by a regression relation calibrated over the set of respondents (if continuous or a mixture of categorical and continuous). A respondent in the latter case is necessarily a record for which none of the elements in the entire multivariate observation was missing.

If one or more of the elements of the *X*-vector were missing, a reasonable choice might include replacing the entire vector (i.e., including those elements that were not missing) using donor records that matched the nonmissing elements of the vector as closely as possible (this fits the situation in which a gate question is not completed, and would be used to impute for the gate question and all items within the skip using the values from the same donor). Alternately, the missing elements could be imputed as predicted values using regression relations calibrated over the set of respondents for each of the possible patterns of missing elements. The construction of a good model is time consuming but has a greater potential of producing imputed values that are closer to the true value than other direct imputation approaches. Records with imputed values appear in the sample data set with their own weights. Variables that are imputed often appear on analysis files with an associated variable called an imputation flag or imputation indicator. This associated variable takes values that indicate whether the data was obtained from the respondent or was imputed. This allows the user of the data to assess the level of missing data for an item, and to make his or her own decisions about whether to use the imputed values.

Also, arguments can likely be made for calibrating any regression relations or restricting hot deck classes to reporting domains within which the associations among the relevant variables were thought to possibly be different. If different associations were expected in different Services, for example, the imputation procedures would be individually applied within Service in order to avoid averaging the Service-level associations over the total force. If some variety of such circumstances exist, the sizes of the corresponding respondent sets are likely to become too small to be useful. Little (1988) describes a set of desirable properties that should be associated with any imputation procedure.

Estimation using data with imputed values generally proceeds as if the data were reported by the respondent. This ignores the increase in variance due to the imputation procedure. Multiple imputation (e.g., see Rubin, 1987) can be performed to provide a direct estimate of the component of variance due to imputation. Though not widely used, data sets with multiple imputed values are becoming easier to analyze because of new software and techniques (Schafer, 1997).

CASRO Approach to Computing Response Rates

The term "response rate" is not consistently used in the field of survey research (see, e.g., Bailar & Lanphier, 1978). Because response rates can provide a useful comment on data quality, many survey research organizations have, from time to time, proposed standardizing the definition of the term and/or have adopted standardized definitions for use in their own organizations. One such organization is the Council of American Survey Research Organizations (CASRO). In 1982, CASRO prepared a special report outlining the problem and containing a recommendation for a standard definition. The report was prepared by a distinguished panel of statisticians under the chairmanship of L. R. Frankel.

The CASRO recommendation has been widely adopted in survey research circles, including DMDC, to facilitate comparing different surveys and to clarify the requirements in planning for a survey in soliciting research proposals. Because the response rates cited in Tables A-3 and

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A-7 do not explicitly follow the CASRO recommendation, some further explanation is necessary.

The CASRO recommendation conditions response rates on the number of eligible reporting units, defining the response rate as "… the ratio of the number of interviews to the number of eligible units in the sample". Accompanying the definition are rules for determining the number of eligible units in the sample when dealing with multistage designs when information may be missing for units defined at any stage of sampling. Not specifically mentioned is multiphase sampling in which successive subsamples of the same units are selected. The CASRO report discusses the application of the response rate definition in surveys employing different data collection modes and different listing units used in the construction of the sampling frame. The CASRO report uses the term "completion rate" to apply collectively to all performance rates other than response rates.

The response rates cited in Tables A-3 and A-7 in this report are not conditioned on eligibility. That is, units for which the eligibility status is indeterminate are counted as non-respondents. This convention follows from a consideration of the form of an estimated population total,

$$\hat{T}_\theta = \sum_{u_i \in S} w_i \, \delta_{d,i} \, \theta_i \, .$$

In this expression the notation $u_i \in S$ denotes units in the sample and

w_i = the sampling weight associated with the i-th unit,

$\delta_{d,i} = 1$, if the i-th unit belongs to the d-th reporting domain and $= 0$, otherwise,

θ_i = a function of response variable values associated with the i-th unit.

If either of $\delta_{d,i}$ or θ_i is missing, then the estimate $\hat{T}_\theta$ is potentially biased. If eligibility criteria are included in the definition of the reporting domain, then an argument can be made that this convention provides commentary on the total or overall bias potential. Using an extreme example to make the point, if the eligibility status were unknown for the majority of units selected into the sample, but information was obtained for all of the known eligible units, applying the CASRO definition would result in a reported 100 percent response rate.

Note also that the convention used in this report implies response rates are estimated at population levels; that is, the response rates are cited as fully weighted parameter estimates rather than sample tabulations. As a consequence, variances for the estimates are easily computed and distortions of the overall response rate that may have resulted from oversampling domains that yield characteristically poor responses are avoided. Response rates for individual reporting domains are also easily computed. The convention is easily extended to include multistage or multiphase designs by computing the fully weighted rates, conditional on the experienced response patterns at previous stages or phases of sampling.

In the case of the *SHS*, the overall response rate (with 95% confidence interval) not conditioned on eligibility is 54.7 ±0.9 percent. Using the CASRO definition (but weighting the data to estimate the rate at the level of the total population), the eligibility adjusted response rate is 53.4% percent. Similarly for the *EOS*, the rates are 55.0 ±0.6 and 52.7% respectively. Intervals are not available for eligibility adjusted response rates).

The CASRO recommendation is that nonrespondents for whom eligibility has not been determined be distributed to either eligibility or ineligibility status using the eligibility rate among those for whom eligibility could be determined. In their calculation of the "eligible response rate," DMDC assumed that all master file ineligibles were identified and did not include them in the ineligibility rate used to estimate the unknown ineligibles (Elig et al. 1997).

Variance Estimation and Generalized Variances

The *SHS* and *EOS* used complex sample designs using stratification and unequal weighting. Standard statistical packages such as SAS and SPSS do not currently have procedures that will correctly estimate variances of proportions, means, or regression coefficients that are obtained from data collected in these surveys. The statistical methodology reports for these surveys recommended that Taylor Series linearizations be used, and gave instructions for the use of the SUDAAN® software package (Shah, Barnwell, & Bieler, 1996). Discussion of Taylor series variance estimation as well as other methods for variance estimation are given by Wolter (1985). Cohen (1997) gives a critique of SUDAAN® as well as other packages that will correctly compute the variances for estimates from survey data.

Some investigators use generalized variances to assess the reliability of the parameter estimates rather than compute the actual variances of the estimates, usually in response to not having software available that is capable of computing the actual variances. Another reason for their use is that published reports containing a large number of survey estimates may become extremely bulky if standard errors are presented for every estimate in the report. Generalized variance formulations seek to model the actual variances in terms of the values of the parameter estimates and the salient features of the design. Often the design features are modeled using design effects. Wolter (1985, Chapter 5) is a good reference for the topic of generalized variance estimation. A simple generalized variance model for an estimate of a domain proportion, for example, might include:

- the value of the proportion, from which the binomial population variance is easily computed,

- the number of observations obtained from the domain, which divides the population variance to obtain the simple random sampling variance of the estimated proportion,

- and an average value of the design effect, which multiplies the simple random sampling variance to account for the salient features of the design.

The variability in the design effects obtained for similarly defined domains and similar values of the domain proportions illustrates the inherent difficulty with using such a model and, in general, with using the generalized variance approach. Obviously the accurate "model" for computing the variance is that derived from the probability structure that gives rise to the observations, that is, the actual variances computed using the variance formula derived from the design.

Using the *SHS* redesign by way of example, the design effects for the ten main effect domains range from 1.34 to 6.84, as shown in Table 17, along with the relevant domain size and prevalence rate information needed to fit the generalized variance model described above. Shown also in Table 17 are the actual variances and the generalized variance model predictions made using the average design effect of 4.17. The average design effect is calculated as $\bar{d} = (1.34 + 1.98 + ... + 4.63) / 10 = 4.17$. For example, for the domain defined by the Army, the model predicted confidence interval is calculated as follows. The number of observations for the Army

is obtained by summing the Army strata in the column in Table A-4 labeled "Redesign Allocation" to obtain 7,132 observations. The prevalence rate of $\hat{p}_D = 0.3$ and $n_D = 7,132$ observations gives the simple random sample variance of the proportion as

$$\hat{V}_{SRS} = \frac{\hat{p}(1-\hat{p})}{n_D - 1} == \frac{(0.3)(0.7)}{7,131} = 0.000029449.$$ The model predicted variance under the sample design is $\hat{V} = \bar{d}\hat{V}_{SRS} = 4.17 * 0.000029449 = 0.0001228$, and the model predicted standard error under the sample design is $se = \sqrt{\hat{V}} = 0.0111$. This gives the model predicted confidence interval half-width of $1.96 * 0.0111 = 0.022$.

Table 17 shows that, at least for the simple generalized variance model used in the example, serious misinformation is provided by the generalized variance approach for the domains of males, females and the two smaller Services. In using generalized variances, the investigator needs to be aware of the possibility for misinformation and its effect on conclusions reached using this approach, such as the results of formal tests of hypotheses. Certainly important conclusions should be reached using the actual variances. With the availability of easily used, efficient computer software, there is little reason not to compute the actual variances.

Table 17.
Comparison of Actual and Generalized Variances

Domain Number	Description	Prevalence Rate	Relative Domain Size	Design Effect	Confidence Interval	
					Actual	Model Predicted
1	Males	0.30	0.876	1.34	± 0.014	± 0.043
2	Females	0.50	0.124	1.98	± 0.009	± 0.020
3	US	0.30	0.800	5.46	± 0.014	± 0.010
4	Overseas	0.30	0.200	3.81	± 0.027	± 0.030
5	Army	0.30	0.318	4.48	± 0.023	± 0.022
6	Navy	0.30	0.272	3.97	± 0.025	± 0.027
7	Marine Corps	0.30	0.103	4.69	± 0.036	± 0.032
8	Air Force	0.30	0.247	4.51	± 0.023	± 0.021
9	Coast Guard	0.30	0.022	6.84	± 0.038	± 0.023
10	AGR/TAR	0.30	0.039	4.63	± 0.043	± 0.039

Summary

In the first section of this report, results were presented from reallocating the samples using the observed response rates for the surveys, and using a revised cost model (for *SHS*). Under the redesigns, a smaller initial sample was indicated for *SHS* compared to the original design, and a larger initial sample was indicated for *EOS*. The averages of design effects over reporting domains were computed as a measure of efficiency of the designs for these two surveys. For *SHS*, the average computed over 124 domains was 1.80. For *EOS*, the average computed over 333 domains (the 170 used to specify the design plus an additional 163) was 1.97. These design effect results indicate that both designs are reasonably efficient.

The second section of the report discussed a variety of issues related to nonresponse, bias, and missing data compensation. Some suggestions for ideas to improve response rates were given, but these would require changes in methodology for DMDC, and it is not clear without testing and pilot studies whether the ideas would work in practice. Weight adjustments for nonresponse are used by DMDC to adjust for the biasing effects of nonresponse. Response propensity modeling for nonresponse weight adjustments is a preferred method because of the potential for bias reduction due to being able to include more variables in the adjustment procedure (compared to a weighting class adjustment). The large amount of data available for all sample members make surveys of military personnel an ideal situation in which to apply the technique. For the *EOS*, the modeling allowed for additional variables such as level and education, and more detailed breakdowns in variables such as paygrade, to be included in the adjustment for nonresponse, and thus hopefully decrease the nonresponse bias. The modeling requires more time to implement, and time for weight construction is often limited due to analysis and reporting deadlines. However, because of the potential benefits of response propensity modeling for weight adjustment, it would be helpful to begin developing a general model (using results of other DMDC studies that look at factors related to nonresponse) that could be used as a starting point for weight adjustment on most DMDC surveys.

The final section briefly discussed estimation of variances for each estimate as compared to the use of generalized variance models. An example (using a very simple generalized variance model) was given which indicated that for some domains that particular model did very poorly in estimating the variance, but did well in other domains. The conclusion here is that the users of generalized variance models should be aware of the possibility of misinformation and its effect on conclusions (such as results of hypothesis tests) reached using this approach.

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Appendix A

Detailed Tables

Table A-1.
SHS Stratum Definitions

Stratum Number	Stratum Size	Dimensions	Levels
1	108515	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E1 to E4 Male non-Hispanic White
2	34104	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E1 to E4 Male non-Hispanic Black
3	8703	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E1 to E4 Male Hispanic (any race)
4	8170	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E1 to E4 Male Native American + Asian & Pacific Islander + Other
5	13189	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E1 to E4 Female non-Hispanic White
6	14645	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E1 to E4 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
7	79351	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E5 to E9 Male non-Hispanic White
8	47813	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E5 to E9 Male non-Hispanic Black
9	8182	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E5 toE9 Male Hispanic (any race)
10	8731	Service/Component Location Paygrade Gender Race/Ethnicity	Army US E5 to E9 Male Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
11	6036	Service/Component	Army
		Location	US
		Paygrade	E5 to E9
		Gender	Female
		Race/Ethnicity	non-Hispanic White
12 ·	11381	Service/Component	Army
		Location	US
		Paygrade	E5 to E9
		Gender	Female
		Race/Ethnicity	non-Hispanic Black+Hispanic (any race) + Native American + Asian & Pacific Islander + Other
13	50231	Service/Component	Army
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	non-Hispanic White
14	5978	Service/Component	Army
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
15	1653	Service/Component	Army
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
16	2372	Service/Component	Army
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
17	6581	Service/Component	Army
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic White
18	2576	Service/Component	Army
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
19	29134	Service/Component	Army
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic White
20	10348	Service/Component	Army
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic Black

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
21	2208	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E1 to E4 Male Hispanic (any race)
22	2405	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E1 to E4 Male Native American + Asian & Pacific Islander + Other
23	3554	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E1 to E4 Female non-Hispanic White
24	4259	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E1 to E4 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
25	22126	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E5 to E9 Male non-Hispanic White
26	15479	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E5 to E9 Male non-Hispanic Black
27	2406	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E5 to E9 Male Hispanic (any race)
28	3012	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E5 to E9 Male Native American + Asian & Pacific Islander + Other
29	1728	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E5 to E9 Female non-Hispanic White
30	3776	Service/Component Location Paygrade Gender Race/Ethnicity	Army Overseas E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
31	10621	Service/Component	Army
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	non-Hispanic White
32	1389	Service/Component	Army
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
33	463	Service/Component	Army
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
34	609	Service/Component	Army
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
35	1216	Service/Component	Army
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic White
36	545	Service/Component	Army
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
37	81660	Service/Component	Navy
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic White
38	23675	Service/Component	Navy
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
39	10695	Service/Component	Navy
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
40	5090	Service/Component	Navy
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
41	12854	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E1 to E4 Female non-Hispanic White
42	9236	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E1 to E4 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
43	101151	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E5 to E9 Male non-Hispanic White
44	20339	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E5 to E9 Male non-Hispanic Black
45	6462	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E5 to E9 Male Hispanic (any race)
46	9357	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E5 to E9 Male Native American + Asian & Pacific Islander + Other
47	7972	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E5 toE9 Female non-Hispanic White
48	4427	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
49	37235	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US W1 to W5 + O1 to O6 Male non-Hispanic White
50	1883	Service/Component Location Paygrade Gender Race/Ethnicity	Navy US W1 to W5 + O1 to O6 Male non-Hispanic Black

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Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
51	1138	Service/Component	Navy
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
52	1344	Service/Component	Navy
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
53	5608	Service/Component	Navy
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic White
54	1080	Service/Component	Navy
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
55	31499	Service/Component	Navy
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic White
56	8648	Service/Component	Navy
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
57	5125	Service/Component	Navy
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
58	2720	Service/Component	Navy
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
59	3205	Service/Component	Navy
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic White
60	2287	Service/Component	Navy
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
61	31160	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas E5 to E9 Male non-Hispanic White
62	6906	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas E5 to E9 Male non-Hispanic Black
63	2623	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas E5 toE9 Male Hispanic (any race)
64	5187	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas E5 to E9 Male Native American + Asian & Pacific Islander + Other
65	2687	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas E5 to E9 Female non-Hispanic White
66	1792	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
67	9172	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas W1 to W5 + O1 to O6 Male non-Hispanic White
68	571	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas W1 to W5 + O1 to O6 Male non-Hispanic Black
69	403	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas W1 to W5 + O1 to O6 Male Hispanic (any race)
70	454	Service/Component Location Paygrade Gender Race/Ethnicity	Navy Overseas W1 to W5 + O1 to O6 Male Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
71	919	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic White
72	197	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
73	59603	Service/Component	Marine Corps
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic White
74	10976	Service/Component	Marine Corps
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
75	8040	Service/Component	Marine Corps
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
76	3083	Service/Component	Marine Corps
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
77	2385	Service/Component	Marine Corps
		Location	US
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic White
78	1485	Service/Component	Marine Corps
		Location	US
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
79	25662	Service/Component	Marine Corps
		Location	US
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	non-Hispanic White
80	9620	Service/Component	Marine Corps
		Location	US
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	non-Hispanic Black

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
81	3015	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US E5 to E9 Male Hispanic (any race)
82	1150	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US E5 to E9 Male Native American + Asian & Pacific Islander + Other
83	1125	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US E5 to E9 Female non-Hispanic White
84	972	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
85	13095	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US W1 to W5 + O1 to O6 Male non-Hispanic White
86	797	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US W1 to W5 + O1 to O6 Male non-Hispanic Black
87	489	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US W1 to W5 + O1 to O6 Male Hispanic (any race)
88	352	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US W1 to W5 + O1 to O6 Male Native American + Asian & Pacific Islander + Other
89	489	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US W1 to W5 + O1 to O6 Female non-Hispanic White
90	92	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps US W1 to W5 + O1 to O6 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
91	14180	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E1 to E4 Male non-Hispanic White
92	2497	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E1 to E4 Male non-Hispanic Black
93	1997	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E1 toE4 Male Hispanic (any race)
94	769	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E1 to E4 Male Native American + Asian & Pacific Islander + Other
95	412	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E1 to E4 Female non-Hispanic White
96	269	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E1 to E4 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
97	5068	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E5 to E9 Male non-Hispanic White
98	1907	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E5 to E9 Male non-Hispanic Black
99	613	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E5 to E9 Male Hispanic (any race)
100	294	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E5 to E9 Male Native American + Asian & Pacific Islander + Other

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
101	218	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E5 to E9 Female non-Hispanic White
102	224	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
103	2127	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas W1 to W5 + O1 to O6 Male non-Hispanic White
104	133	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas W1 to W5 + O1 to O6 Male non-Hispanic Black
105	73	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas W1 to W5 + O1 to O6 Male Hispanic (any race)
106	60	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas W1 to W5 + O1 to O6 Male Native American + Asian & Pacific Islander + Other
107	71	Service/Component Location Paygrade Gender Race/Ethnicity	Marine Corps Overseas W1 to W5 + O1 to O6 Female non-Hispanic White + non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
108	88265	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force US E1 to E4 Male non-Hispanic White
109	13548	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force US E1 toE4 Male non-Hispanic Black
110	4256	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force US E1 toE4 Male Hispanic (any race)

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
111	3029	Service/Component	Air Force
		Location	US
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
112	19696	Service/Component	Air Force
		Location	US
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic White
113	7743	Service/Component	Air Force
		Location	US
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
114	91100	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	non-Hispanic White
115	20082	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
116	4820	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
117	4108	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
118	10568	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E9
		Gender	Female
		Race/Ethnicity	non-Hispanic White
119	5556	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E9
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
120	53594	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	non-Hispanic White

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Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
121	2803	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
122	1127	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
123	2065	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
124	8937	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic White
125	1841	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
126	18048	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic White
127	3541	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
128	840	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
129	736	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
130	3477	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic White

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
131	1545	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E1 to E4 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
132	20969	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E5 to E9 Male non-Hispanic White
133	6523	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E5 to E9 Male non-Hispanic Black
134	1305	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E5 to E9 Male Hispanic (any race)
135	1347	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E5 to E9 Male Native American + Asian & Pacific Islander + Other
136	2319	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E5 to E9 Female non-Hispanic White
137	1771	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
138	6619	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 Male non-Hispanic White
139	441	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 Male non-Hispanic Black
140	169	Service/Component Location Paygrade Gender Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 Male Hispanic (any race)

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
141	278	Service/Component	Air Force
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
142	1157	Service/Component	Air Force
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic White
143	266	Service/Component	Air Force
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
144	9538	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic White
145	687	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	non-Hispanic Black
146	904	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Hispanic (any race)
147	798	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E1 to E4
		Gender	Male
		Race/Ethnicity	Native American + Asian & Pacific Islander + Other
148	1131	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic White
149	384	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E1 to E4
		Gender	Female
		Race/Ethnicity	non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
150	12344	Service/Component	Coast Guard
		Location	US+Overseas
		Paygrade	E5 to E9
		Gender	Male
		Race/Ethnicity	non-Hispanic White

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
151	1145	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas E5 to E9 Male non-Hispanic Black
152	660	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas E5 to E9 Male Hispanic (any race)
153	411	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas E5 to E9 Male Native American + Asian & Pacific Islander + Other
154	745	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas E5 to E9 Female non-Hispanic White
155	303	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
156	6281	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas W1 to W5 + O1 to O6 Male non-Hispanic White
157	188	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas W1 to W5 + O1 to O6 Male non-Hispanic Black
158	170	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas W1 to W5 + O1 to O6 Male Hispanic (any race)
159	190	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas W1 to W5 + O1 to O6 Male Native American + Asian & Pacific Islander + Other
160	435	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas W1 to W5 + O1 to O6 Female non-Hispanic White

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
161	64	Service/Component Location Paygrade Gender Race/Ethnicity	Coast Guard US+Overseas W1 to W5 + O1 to O6 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
162	2649	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E1 to E4 Male non-Hispanic White
163	540	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E1 to E4 Male non-Hispanic Black
164	345	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E1 to E4 Male Hispanic (any race)
165	135	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E1 to E4 Male Native American + Asian & Pacific Islander + Other
166	548	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E1 to E4 Female non-Hispanic White
167	356	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E1 to E4 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
168	33187	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E5 to E9 Male non-Hispanic White
169	4664	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E5 to E9 Male non-Hispanic Black
170	2092	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E5 to E9 Male Hispanic (any race)

Table A-1. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
171	1407	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E5 to E9 Male Native American + Asian & Pacific Islander + Other
172	5784	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E5 to E9 Female non-Hispanic White
173	3029	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas E5 to E9 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
174	9461	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas W1 to W5 + O1 to O6 Male non-Hispanic White
175	492	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas W1 to W5 + O1 to O6 Male non-Hispanic Black
176	293	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas W1 to W5 + O1 to O6 Male Hispanic (any race)
177	359	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas W1 to W5 + O1 to O6 Male Native American + Asian & Pacific Islander + Other
178	818	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas W1 to W5 + O1 to O6 Female non-Hispanic White
179	223	Service/Component Location Paygrade Gender Race/Ethnicity	AGR/TAR US+Overseas W1 to W5 + O1 to O6 Female non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other
180	6479	Unknown	

Table A-2.
SHS Domain Definitions, Prevalence Rates and Variance Constraints

Domain Number	Domain Label	Domain Size[3]	Population Proportion	Prevalence	Precision Constraint

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[3] The domain sizes exclude 6,479 individuals classified into the unknown stratum.

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
1	Male	1472653	0.873	0.3	0.02
2	Female	208188	0.123	0.5	0.02
3	US	1344718	0.797	0.3	0.03
4	Overseas	336123	0.199	0.3	0.03
5	Army	533489	0.316	0.3	0.05
6	Navy	456761	0.271	0.3	0.05
7	Marine Corps	173342	0.103	0.3	0.05
8	Air Force	414489	0.246	0.3	0.05
9	Coast Guard	36378	0.022	0.3	0.05
10	AGR/TAR	66382	0.039	0.3	0.05
11	Male * First Quartile-low 1	217536	0.129	0.3	0.08
12	Male * First Quartile-low 2	249692	0.148	0.3	0.08
13	Male * First Quartile-low 3	305709	0.181	0.3	0.08
14	Male * First Quartile-low 4	69033	0.041	0.3	0.08
15	Male * Second Quartile	248954	0.148	0.3	0.08
16	Male * Third Quartile	195803	0.116	0.3	0.08
17	Male * Fourth Quartile	105306	0.062	0.3	0.08
18	Female * First Quartile-low 1	3351	0.002	0.5	0.08
19	Female * First Quartile-low 2	11503	0.007	0.5	0.08
20	Female * First Quartile-low 3	22973	0.014	0.5	0.08
21	Female * First Quartile-low 4	7980	0.005	0.5	0.08
22	Female * Second Quartile	41164	0.024	0.5	0.08
23	Female * Third Quartile	54687	0.032	0.5	0.08
24	Female * Fourth Quartile	53856	0.032	0.5	0.08
25	Male * E1 to E3	338247	0.200	0.3	0.05
26	Male * E4	283456	0.168	0.3	0.05
27	Male * E5 toE6	457061	0.271	0.3	0.05
28	Male * E7 to E9	166717	0.099	0.3	0.05
29	Male * O1 to O3	123479	0.073	0.3	0.05
30	Male * O4 to O6	84510	0.050	0.3	0.05
31	Female * E1 to E3	56628	0.034	0.5	0.03
32	Female * E4	46032	0.027	0.5	0.03
33	Female * E5 to E6	57301	0.034	0.5	0.03
34	Female * E7 to E9	15112	0.009	0.5	0.03
35	Female * O1 to O3	22170	0.013	0.5	0.03
36	Female * O4 to O6	10031	0.006	0.5	0.03
37	Male * non-Hispanic White	1063645	0.630	0.3	0.05
38	Male * non-Hispanic Black	257717	0.153	0.3	0.05
39	Male * Hispanic (any race)	81269	0.048	0.3	0.05
40	Male * Other + Native American + Asian & Pacific Islander	70022	0.041	0.3	0.05
41	Female * non-Hispanic White	125854	0.075	0.5	0.05
42	Female * non-Hispanic Black	62237	0.037	0.5	0.05

Table A-2. (continued)

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
43	Female * Hispanic (any race)	10384	0.006	0.5	0.05
44	Female * Other + Native American + Asian & Pacific Islander	9713	0.006	0.5	0.05

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45	Male * US	1174019	0.696	0.3	0.03
46	Male * Overseas	298052	0.177	0.3	0.03
47	Female * US	169934	0.101	0.5	0.03
48	Female * Overseas	38071	0.023	0.5	0.03
49	Male * Army	464003	0.275	0.3	0.05
50	Male * Navy	404497	0.240	0.3	0.05
51	Male * Marine Corps	165600	0.098	0.3	0.05
52	Male * Air Force	349613	0.207	0.3	0.05
53	Female * Army	69486	0.041	0.5	0.05
54	Female * Navy	52264	0.031	0.5	0.05
55	Female * Marine Corps	7742	0.005	0.5	0.05
56	Female * Air Force	64876	0.038	0.5	0.05
57	Female * Army * E1 to E3	17621	0.010	0.5	0.05
58	Female * Army * E4	18026	0.011	0.5	0.1
59	Female * Army * E5 to E6	17698	0.010	0.5	0.1
60	Female * Army * E7 to E9	5223	0.003	0.5	0.1
61	Female * Army * O1 to O3	7290	0.004	0.5	0.1
62	Female * Army * O4 to O6	3076	0.002	0.5	0.1
63	Female * Navy * E1 to E3	18622	0.011	0.5	0.05
64	Female * Navy * E4	8960	0.005	0.5	0.1
65	Female * Navy * E5 to E6	14435	0.009	0.5	0.1
66	Female * Navy * E7 to E9	2443	0.001	0.5	0.1
67	Female * Navy * O1 to O3	5153	0.003	0.5	0.1
68	Female * Navy * O4 to O6	2529	0.001	0.5	0.1
69	Female * Marine Corps * E1 to E3	3133	0.002	0.5	0.05
70	Female * Marine Corps * E4	1418	0.001	0.5	0.1
71	Female * Marine Corps * E5 to E6	2063	0.001	0.5	0.1
72	Female * Marine Corps * E7 to E9	476	0.000	0.5	0.1
73	Female * Marine Corps * O1 to O3	382	0.000	0.5	0.1
74	Female * Marine Corps * O4 to O6	154	0.000	0.5	0.1
75	Female * Air Force * E1 to E3	16077	0.010	0.5	0.05
76	Female * Air Force * E4	16384	0.010	0.5	0.1
77	Female * Air Force * E5 to E6	15907	0.009	0.5	0.1
78	Female * Air Force * E7 to E9	4307	0.003	0.5	0.1
79	Female * Air Force * O1 to O3	8535	0.005	0.5	0.1
80	Female * Air Force * O4 to O6	3666	0.002	0.5	0.1
81	Male * Coast Guard	33316	0.020	0.3	0.05
82	Female * Coast Guard	3062	0.002	0.5	0.05
83	Female * Coast Guard * E4	554	0.000	0.5	0.1
84	Female * Coast Guard * E5 to E6	928	0.001	0.5	0.1
85	Female * Coast Guard * E7 to E9	120	0.000	0.5	0.1

Table A-2. (continued)

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
86	Female * Coast Guard * O1 to O3	402	0.000	0.5	0.1
87	Female * Coast Guard * O4 to O6	75	0.000	0.5	0.1
88	Male * AGR/TAR	55624	0.033	0.3	0.05
89	Female * AGR/TAR	10758	0.006	0.5	0.05
90	Male * Army * E1 to E9	390687	0.232	0.3	0.06
91	Male * Army * W1 to W5 + O1 to O6	73316	0.043	0.3	0.06
92	Male * Navy * E1 to E9	352297	0.209	0.3	0.06
93	Male * Navy * W1 to W5 + O1 to O6	52200	0.031	0.3	0.06
94	Male * Marine Corps * E1 to E9	148474	0.088	0.3	0.06
95	Male * Marine Corps * W1 to W5 + O1 to O6	17126	0.010	0.3	0.06
96	Male * Air Force * E1 to E9	282517	0.167	0.3	0.06
97	Male * Air Force * W1 to W5 + O1 to O6	67096	0.040	0.3	0.06
98	Female * Army * E1 to E9	58568	0.035	0.5	0.05
99	Female * Army * W1 to W5 + O1 to O6	10918	0.006	0.5	0.05
100	Female * Navy * E1 to E9	44460	0.026	0.5	0.05
101	Female * Navy * W1 to W5 + O1 to O6	7804	0.005	0.5	0.05
102	Female * Marine Corps * E1 to E9	7090	0.004	0.5	0.05
103	Female * Marine Corps * W1 to W5 + O1 to O6	652	0.000	0.5	0.05
104	Female * Air Force * E1 to E9	52675	0.031	0.5	0.05
105	Female * Air Force * W1 to W5 + O1 to O6	12201	0.007	0.5	0.05
106	Male * Coast Guard * E1 to E9	26487	0.016	0.3	0.06
107	Male * Coast Guard * W1 to W5 + O1 to O6	6829	0.004	0.3	0.06
108	Female * Coast Guard * E1 to E9	2563	0.002	0.5	0.05
109	Female * Coast Guard * W1 to W5 + O1 to O6	499	0.000	0.5	0.05
110	Male * AGR/TAR * E1 to E9	45019	0.027	0.3	0.06
111	Male * AGR/TAR * W1 to W5 + O1 to O6	10605	0.006	0.3	0.06
112	Female * AGR/TAR * E1 to E9	9717	0.006	0.5	0.05
113	Female * AGR/TAR * W1 to W5 + O1 to O6	1041	0.001	0.5	0.05
114	Male * Army * E1 to E3	100425	0.060	0.3	0.06
115	Male * Navy * E1 to E3	97613	0.058	0.3	0.06
116	Male * Marine Corps * E1 to E3	73363	0.043	0.3	0.06
117	Male * Air Force * E1 to E3	60348	0.036	0.3	0.06
118	Male * Coast Guard * E1 to E3	5667	0.003	0.3	0.06
119	Male * Army * E4 to E9	290262	0.172	0.3	0.06
120	Male * Navy * E4 toE9	254684	0.151	0.3	0.06
121	Male * Marine Corps * E4 to E9	75111	0.045	0.3	0.06
122	Male * Air Force * E4 to E9	222169	0.132	0.3	0.06
123	Male * Coast Guard * E4 to E9	20820	0.012	0.3	0.06
124	Female * Coast Guard * E1 to E3	961	0.001	0.5	0.05

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Table A-3.
SHS Estimated and Experienced Response Rates

Stratum Number	Description	Response Rate Design	Actual
1	Army * US * E1 to E4 * Male * non-Hispanic White	0.38	0.38
2	Army * US * E1 to E4 * Male * non-Hispanic Black	0.30	0.26
3	Army * US * E1 to E4 * Male * Hispanic (any race)	0.41	0.48
4	Army * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.41	0.43
5	Army * US * E1 to E4 * Female * non-Hispanic White	0.39	0.49
6	Army * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.31	0.37
7	Army * US * E5 to E9 * Male * non-Hispanic White	0.52	0.60
8	Army * US * E5 to E9 * Male * non-Hispanic Black	0.43	0.51
9	Army * US * E5 to E9 * Male * Hispanic (any race)	0.49	0.68
10	Army * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.49	0.58
11	Army * US * E5 to E9 * Female * non-Hispanic White	0.53	0.68
12	Army * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.44	0.57
13	Army * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.68	0.70
14	Army * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.63	0.57
15	Army * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.69	0.69
16	Army * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.69	0.62
17	Army * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.69	0.73
18	Army * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.64	0.64
19	Army * Overseas * E1 to E4 * Male * non-Hispanic White	0.38	0.33
20	Army * Overseas * E1 to E4 * Male * non-Hispanic Black	0.30	0.35
21	Army * Overseas * E1 to E4 * Male * Hispanic (any race)	0.41	0.48
22	Army * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.41	0.46
23	Army * Overseas * E1 to E4 * Female * non-Hispanic White	0.39	0.50
24	Army * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.31	0.36
25	Army * Overseas * E5 to E9 * Male * non-Hispanic White	0.52	0.58
26	Army * Overseas * E5 to E9 * Male * non-Hispanic Black	0.43	0.40
27	Army * Overseas * E5 to E9 * Male * Hispanic (any race)	0.49	0.67
28	Army * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.49	0.59
29	Army * Overseas * E5 to E9 * Female * non-Hispanic White	0.53	0.63
30	Army * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.44	0.50
31	Army * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.68	0.82
32	Army * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.63	0.78
33	Army * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.69	0.75
34	Army * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.69	0.80
35	Army * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.69	0.71
36	Army * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander+Other	0.64	0.59
37	Navy * US * E1 to E4 * Male * non-Hispanic White	0.43	0.39
38	Navy * US * E1 to E4 * Male * non-Hispanic Black	0.31	0.30
39	Navy * US * E1 to E4 * Male * Hispanic (any race)	0.45	0.43

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Table A-3. (continued)

Stratum Number	Description	Response Rate Design	Response Rate Actual
40	Navy * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.45	0.52
41	Navy * US * E1 to E4 * Female * non-Hispanic White	0.44	0.48
42	Navy * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.32	0.39
43	Navy * US * E5 to E9 * Male * non-Hispanic White	0.60	0.66
44	Navy * US * E5 to E9 * Male * non-Hispanic Black	0.44	0.58
45	Navy * US * E5 to E9 * Male * Hispanic (any race)	0.56	0.50
46	Navy * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.56	0.54
47	Navy * US * E5 to E9 * Female * non-Hispanic White	0.61	0.69
48	Navy * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.45	0.58
49	Navy * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.72	0.81
50	Navy * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.63	0.64
51	Navy * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.72	0.88
52	Navy * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.72	0.82
53	Navy * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.73	0.78
54	Navy * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.64	0.70
55	Navy * Overseas * E1 to E4 * Male * non-Hispanic White	0.43	0.37
56	Navy * Overseas * E1 to E4 * Male * non-Hispanic Black	0.31	0.21
57	Navy * Overseas * E1 to E4 * Male * Hispanic (any race)	0.45	0.36
58	Navy * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.45	0.59
59	Navy * Overseas * E1 to E4 * Female * non-Hispanic White	0.44	0.52
60	Navy * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.32	0.48
61	Navy * Overseas * E5 to E9 * Male * non-Hispanic White	0.60	0.68
62	Navy * Overseas * E5 to E9 * Male * non-Hispanic Black	0.44	0.56
63	Navy * Overseas * E5 to E9 * Male * Hispanic (any race)	0.56	0.67
64	Navy * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.56	0.71
65	Navy * Overseas * E5 to E9 * Female * non-Hispanic White	0.61	0.69
66	Navy * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.45	0.60
67	Navy * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.72	0.79
68	Navy * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.63	1.00
69	Navy * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.72	0.67
70	Navy * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.72	0.75
71	Navy * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.73	0.76
72	Navy * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.64	0.71
73	Marine Corps * US * E1 to E4 * Male * non-Hispanic White	0.38	0.27
74	Marine Corps * US * E1 to E4 * Male * non-Hispanic Black	0.29	0.20
75	Marine Corps * US * E1 to E4 * Male * Hispanic (any race)	0.31	0.22
76	Marine Corps * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.31	0.33
77	Marine Corps * US * E1 to E4 * Female * non-Hispanic White	0.39	0.44

Table A-3. (continued)

Stratum Number	Description	Response Rate Design	Response Rate Actual
78	Marine Corps * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.30	0.33
79	Marine Corps * US * E5 to E9 * Male * non-Hispanic White	0.51	0.53
80	Marine Corps * US * E5 to E9 * Male * non-Hispanic Black	0.44	0.43
81	Marine Corps * US * E5 to E9 * Male * Hispanic (any race)	0.44	0.57
82	Marine Corps * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.44	0.50
83	Marine Corps * US * E5 to E9 * Female * non-Hispanic White	0.52	0.62
84	Marine Corps * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.45	0.49
85	Marine Corps * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.71	0.75
86	Marine Corps * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.70	0.53
87	Marine Corps * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.70	0.60
88	Marine Corps * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.70	0.88
89	Marine Corps * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.72	0.78
90	Marine Corps * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.71	0.79
91	Marine Corps * Overseas * E1 to E4 * Male * non-Hispanic White	0.38	0.35
92	Marine Corps * Overseas * E1 to E4 * Male * non-Hispanic Black	0.29	0.18
93	Marine Corps * Overseas * E1 to E4 * Male * Hispanic (any race)	0.31	0.31
94	Marine Corps * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.31	0.27
95	Marine Corps * Overseas * E1 to E4 * Female * non-Hispanic White	0.39	0.42
96	Marine Corps * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.30	0.35
97	Marine Corps * Overseas * E5 to E9 * Male * non-Hispanic White	0.51	0.66
98	Marine Corps * Overseas * E5 to E9 * Male * non-Hispanic Black	0.44	0.33
99	Marine Corps * Overseas * E5 to E9 * Male * Hispanic (any race)	0.44	0.67
100	Marine Corps * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.44	0.50
101	Marine Corps * Overseas * E5 to E9 * Female * non-Hispanic White	0.52	0.61
102	Marine Corps * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.45	0.43
103	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.71	0.78
104	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.70	0.33
105	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.70	1.00
106	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.70	0.50
107	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White + non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.72	0.83
108	Air Force * US * E1 to E4 * Male * non-Hispanic White	0.57	0.50

Table A-3. (continued)

Stratum Number	Description	Response Rate Design	Actual
109	Air Force * US * E1 to E4 * Male * non-Hispanic Black	0.48	0.39
110	Air Force * US * E1 to E4 * Male * Hispanic (any race)	0.61	0.59
111	Air Force * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.61	0.66
112	Air Force * US * E1 to E4 * Female * non-Hispanic White	0.58	0.63
113	Air Force * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.49	0.56
114	Air Force * US * E5 to E9 * Male * non-Hispanic White	0.71	0.71
115	Air Force * US * E5 to E9 * Male * non-Hispanic Black	0.55	0.60
116	Air Force * US * E5 to E9 * Male * Hispanic (any race)	0.60	0.81
117	Air Force * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.60	0.56
118	Air Force * US * E5 to E9 * Female * non-Hispanic White	0.72	0.71
119	Air Force * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.56	0.62
120	Air Force * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.73	0.80
121	Air Force * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.68	0.50
122	Air Force * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.72	0.89
123	Air Force * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.72	0.81
124	Air Force * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.74	0.78
125	Air Force * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.68	0.75
126	Air Force * Overseas * E1 to E4 * Male * non-Hispanic White	0.57	0.48
127	Air Force * Overseas * E1 to E4 * Male * non-Hispanic Black	0.48	0.31
128	Air Force * Overseas * E1 to E4 * Male * Hispanic (any race)	0.61	0.50
129	Air Force * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.61	0.71
130	Air Force * Overseas * E1 to E4 * Female * non-Hispanic White	0.58	0.54
131	Air Force * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.49	0.51
132	Air Force * Overseas * E5 to E9 * Male * non-Hispanic White	0.71	0.68
133	Air Force * Overseas * E5 to E9 * Male * non-Hispanic Black	0.55	0.61
134	Air Force * Overseas * E5 to E9 * Male * Hispanic (any race)	0.60	0.56
135	Air Force * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.60	0.73
136	Air Force * Overseas * E5 to E9 * Female * non-Hispanic White	0.72	0.66
137	Air Force * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.56	0.55
138	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.73	0.67
139	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.68	0.67
140	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.72	1.00
141	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.72	0.33
142	Air Force * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.74	0.72

Table A-3. (continued)

Stratum Number	Description	Response Rate Design	Response Rate Actual
143	Air Force * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.68	0.69
144	Coast Guard * US + Overseas * E1 to E4 * Male * non-Hispanic White	0.48	0.49
145	Coast Guard * US + Overseas * E1 to E4 * Male * non-Hispanic Black	0.28	0.37
146	Coast Guard * US + Overseas * E1 to E4 * Male * Hispanic (any race)	0.28	0.45
147	Coast Guard * US + Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.28	0.47
148	Coast Guard * US + Overseas * E1 to E4 * Female * non-Hispanic White	0.49	0.57
149	Coast Guard * US + Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.29	0.47
150	Coast Guard * US + Overseas * E5 to E9 * Male * non-Hispanic White	0.72	0.68
151	Coast Guard * US + Overseas * E5 to E9 * Male * non-Hispanic Black	0.50	0.53
152	Coast Guard * US + Overseas * E5 to E9 * Male * Hispanic (any race)	0.45	0.55
153	Coast Guard * US + Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.45	0.63
154	Coast Guard * US + Overseas * E5 to E9 * Female * non-Hispanic White	0.73	0.73
155	Coast Guard * US + Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.51	0.63
156	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.75	0.84
157	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.63	0.80
158	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.50	0.60
159	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.50	0.45
160	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.76	0.85
161	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.64	0.76
162	AGR/TAR * US + Overseas * E1 to E4 * Male * non-Hispanic White	0.48	0.57
163	AGR/TAR * US + Overseas * E1 to E4 * Male * non-Hispanic Black	0.28	0.71
164	AGR/TAR * US + Overseas * E1 to E4 * Male * Hispanic (any race)	0.28	0.80
165	AGR/TAR * US + Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	0.28	0.67
166	AGR/TAR * US + Overseas * E1 to E4 * Female * non-Hispanic White	0.49	0.48
167	AGR/TAR * US + Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.29	0.61

Table A-3. (continued)

Stratum Number	Description	Response Rate Design	Response Rate Actual
168	AGR/TAR * US + Overseas * E5 to E9 * Male * non-Hispanic White	0.72	0.78
169	AGR/TAR * US + Overseas * E5 to E9 * Male * non-Hispanic Black	0.50	0.57
170	AGR/TAR * US + Overseas * E5 to E9 * Male * Hispanic (any race)	0.45	0.74
171	AGR/TAR * US + Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	0.45	0.82
172	AGR/TAR * US + Overseas * E5 to E9 * Female * non-Hispanic White	0.73	0.74
173	AGR/TAR * US + Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.51	0.65
174	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	0.75	0.82
175	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	0.63	0.81
176	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	0.50	0.82
177	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	0.50	0.85
178	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	0.76	0.82
179	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	0.64	0.78
180	Unknown	0.53	0.52

Table A-4.
SHS Original and Redesigned Sample Allocation

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
1	Army * US * E1 to E4 * Male * non-Hispanic White	291	766	296	779
2	Army * US * E1 to E4 * Male * non-Hispanic Black	78	260	74	285
3	Army * US * E1 to E4 * Male * Hispanic (any race)	34	83	35	73
4	Army * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	35	85	34	79
5	Army * US * E1 to E4 * Female * non-Hispanic White	342	877	351	716
6	Army * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	674	2174	674	1822
7	Army * US * E5 to E9 * Male * non-Hispanic White	169	325	172	287
8	Army * US * E5 to E9 * Male * non-Hispanic Black	95	221	98	192
9	Army * US * E5 to E9 * Male * Hispanic (any race)	29	59	32	47
10	Army * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	36	73	37	64
11	Army * US * E5 to E9 * Female * non-Hispanic White	776	1464	817	1201
12	Army * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	1281	2911	1351	2370
13	Army * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	198	291	196	280
14	Army * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	22	35	21	37
15	Army * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	8	12	8	12
16	Army * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	13	19	12	19
17	Army * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	1104	1600	1109	1519
18	Army * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	418	653	407	636
19	Army * Overseas * E1 to E4 * Male * non-Hispanic White	84	221	80	242
20	Army * Overseas * E1 to E4 * Male * non-Hispanic Black	26	87	28	80
21	Army * Overseas * E1 to E4 * Male * Hispanic (any race)	9	22	10	21
22	Army * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	11	27	11	24
23	Army * Overseas * E1 to E4 * Female * non-Hispanic White	92	238	96	192
24	Army * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	199	642	196	544
25	Army * Overseas * E5 to E9 * Male * non-Hispanic White	55	106	56	97
26	Army * Overseas * E5 to E9 * Male * non-Hispanic Black	36	84	34	85
27	Army * Overseas * E5 to E9 * Male * Hispanic (any race)	10	20	10	15
28	Army * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	14	29	14	24
29	Army * Overseas * E5 to E9 * Female * non-Hispanic White	214	404	218	346
30	Army * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	427	970	426	852
31	Army * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	44	65	47	57

Table A-4. (continued)

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
32	Army * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	6	10	6	8
33	Army * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	3	4	3	4
34	Army * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	4	6	4	5
35	Army * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	187	271	186	262
36	Army * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	88	137	83	141
37	Navy * US * E1 to E4 * Male * non-Hispanic White	214	498	217	556
38	Navy * US * E1 to E4 * Male * non-Hispanic Black	53	171	55	183
39	Navy * US * E1 to E4 * Male * Hispanic (any race)	40	89	40	93
40	Navy * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	22	49	23	44
41	Navy * US * E1 to E4 * Female * non-Hispanic White	281	639	276	575
42	Navy * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	440	1375	431	1105
43	Navy * US * E5 to E9 * Male * non-Hispanic White	210	350	209	317
44	Navy * US * E5 to E9 * Male * non-Hispanic Black	28	66	31	53
45	Navy * US * E5 to E9 * Male * Hispanic (any race)	21	37	19	38
46	Navy * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	41	73	38	70
47	Navy * US * E5 to E9 * Female * non-Hispanic White	926	1518	924	1339
48	Navy * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	368	818	383	660
49	Navy * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	162	225	165	204
50	Navy * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	7	11	6	9
51	Navy * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	6	8	6	7
52	Navy * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	8	11	8	10
53	Navy * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	1021	1399	1030	1321
54	Navy * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	182	284	183	261
55	Navy * Overseas * E1 to E4 * Male * non-Hispanic White	91	212	89	241
56	Navy * Overseas * E1 to E4 * Male * non-Hispanic Black	22	71	19	90
57	Navy * Overseas * E1 to E4 * Male * Hispanic (any race)	21	47	19	53
58	Navy * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	12	27	14	24
59	Navy * Overseas * E1 to E4 * Female * non-Hispanic White	83	189	84	162
60	Navy * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	118	369	127	265

Table A-4. (continued)

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
61	Navy * Overseas * E5 to E9 * Male * non-Hispanic White	79	132	81	119
62	Navy * Overseas * E5 to E9 * Male * non-Hispanic Black	13	30	15	27
63	Navy * Overseas * E5 to E9 * Male * Hispanic (any race)	10	18	10	15
64	Navy * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	24	43	25	35
65	Navy * Overseas * E5 to E9 * Female * non-Hispanic White	302	495	301	436
66	Navy * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	139	309	147	245
67	Navy * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	40	58	41	52
68	Navy * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	2	3	3	3
69	Navy * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	2	3	2	3
70	Navy * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	3	4	3	4
71	Navy * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	147	201	147	193
72	Navy * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	29	45	29	41
73	Marine Corps * US * E1 to E4 * Male * non-Hispanic White	202	532	200	741
74	Marine Corps * US * E1 to E4 * Male * non-Hispanic Black	33	114	32	160
75	Marine Corps * US * E1 to E4 * Male * Hispanic (any race)	31	100	29	132
76	Marine Corps * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	14	45	15	45
77	Marine Corps * US * E1 to E4 * Female * non-Hispanic White	397	1018	400	909
78	Marine Corps * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	228	760	225	682
79	Marine Corps * US * E5 to E9 * Male * non-Hispanic White	83	163	82	155
80	Marine Corps * US * E5 to E9 * Male * non-Hispanic Black	29	66	28	65
81	Marine Corps * US * E5 to E9 * Male * Hispanic (any race)	12	27	13	23
82	Marine Corps * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	6	14	6	12
83	Marine Corps * US * E5 to E9 * Female * non-Hispanic White	449	863	460	742
84	Marine Corps * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	328	729	322	657
85	Marine Corps * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	172	242	173	231
86	Marine Corps * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	11	16	9	17
87	Marine Corps * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	7	10	6	10
88	Marine Corps * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	5	7	6	7
89	Marine Corps * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	559	489	557	489

Table A-4. (continued)

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
90	Marine Corps * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	71	9	72	91
91	Marine Corps * Overseas * E1 to E4 * Male * non-Hispanic White	51	134	56	160
92	Marine Corps * Overseas * E1 to E4 * Male * non-Hispanic Black	8	28	8	44
93	Marine Corps * Overseas * E1 to E4 * Male * Hispanic (any race)	8	26	9	29
94	Marine Corps * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	4	13	4	15
95	Marine Corps * Overseas * E1 to E4 * Female * non-Hispanic White	69	177	68	162
96	Marine Corps * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	41	137	42	120
97	Marine Corps * Overseas * E5 to E9 * Male * non-Hispanic White	18	35	20	30
98	Marine Corps * Overseas * E5 to E9 * Male * non-Hispanic Black	7	16	6	18
99	Marine Corps * Overseas * E5 to E9 * Male * Hispanic (any race)	3	7	3	4
100	Marine Corps * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	2	5	2	4
101	Marine Corps * Overseas * E5 to E9 * Female * non-Hispanic White	75	144	76	125
102	Marine Corps * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	76	169	71	165
103	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	29	41	29	37
104	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	2	3	2	6
105	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	2	3	2	2
106	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	2	3	2	4
107	Marine Corps * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White + non-Hispanic Black + Hispanic (any race) + Native American + Asian & P..	77	71	79	71
108	Air Force * US * E1 to E4 * Male * non-Hispanic White	408	716	412	824
109	Air Force * US * E1 to E4 * Male * non-Hispanic Black	57	119	55	141
110	Air Force * US * E1 to E4 * Male * Hispanic (any race)	25	41	25	42
111	Air Force * US * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	19	31	20	30
112	Air Force * US * E1 to E4 * Female * non-Hispanic White	614	1059	618	981
113	Air Force * US * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	473	965	464	829
114	Air Force * US * E5 to E9 * Male * non-Hispanic White	217	306	208	293
115	Air Force * US * E5 to E9 * Male * non-Hispanic Black	44	80	44	73
116	Air Force * US * E5 to E9 * Male * Hispanic (any race)	18	30	19	23
117	Air Force * US * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	19	32	17	30
118	Air Force * US * E5 to E9 * Female * non-Hispanic White	1435	1993	1354	1907

Table A-4. (continued)

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
119	Air Force * US * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	697	1245	686	1106
120	Air Force * US * W1 to W5 + O1 to O6 * Male * non-Hispanic White	232	318	236	295
121	Air Force * US * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	13	19	11	22
122	Air Force * US * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	7	10	7	8
123	Air Force * US * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	12	17	12	15
124	Air Force * US * W1 to W5 + O1 to O6 * Female * non-Hispanic White	1525	2061	1530	1962
125	Air Force * US * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	341	504	348	464
126	Air Force * Overseas * E1 to E4 * Male * non-Hispanic White	77	135	76	158
127	Air Force * Overseas * E1 to E4 * Male * non-Hispanic Black	13	27	12	39
128	Air Force * Overseas * E1 to E4 * Male * Hispanic (any race)	5	8	5	10
129	Air Force * Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	5	8	5	7
130	Air Force * Overseas * E1 to E4 * Female * non-Hispanic White	117	202	109	202
131	Air Force * Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	90	184	85	167
132	Air Force * Overseas * E5 to E9 * Male * non-Hispanic White	58	82	56	82
133	Air Force * Overseas * E5 to E9 * Male * non-Hispanic Black	17	31	17	28
134	Air Force * Overseas * E5 to E9 * Male * Hispanic (any race)	6	10	5	9
135	Air Force * Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	7	12	7	10
136	Air Force * Overseas * E5 to E9 * Female * non-Hispanic White	298	400	273	414
137	Air Force * Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	208	371	195	355
138	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	32	44	30	45
139	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	3	4	2	3
140	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	2	3	2	2
141	Air Force * Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	2	3	2	6
142	Air Force * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	200	270	194	269
143	Air Force * Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	46	68	45	65
144	Coast Guard * US + Overseas * E1 to E4 * Male * non-Hispanic White	482	1004	462	943
145	Coast Guard * US + Overseas * E1 to E4 * Male * non-Hispanic Black	27	96	29	78

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Table A-4. (continued)

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
146	Coast Guard * US + Overseas * E1 to E4 * Male * Hispanic (any race)	39	139	45	100
147	Coast Guard * US + Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	36	129	43	91
148	Coast Guard * US + Overseas * E1 to E4 * Female * non-Hispanic White	333	680	318	558
149	Coast Guard * US + Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	100	345	111	236
150	Coast Guard * US + Overseas * E5 to E9 * Male * non-Hispanic White	104	144	102	150
151	Coast Guard * US + Overseas * E5 to E9 * Male * non-Hispanic Black	9	18	9	17
152	Coast Guard * US + Overseas * E5 to E9 * Male * Hispanic (any race)	5	11	6	11
153	Coast Guard * US + Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	4	9	4	6
154	Coast Guard * US + Overseas * E5 to E9 * Female * non-Hispanic White	1229	745	1201	745
155	Coast Guard * US + Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	343	303	366	303
156	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	209	279	209	249
157	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	6	10	7	9
158	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	5	10	5	8
159	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	6	12	5	11
160	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	1061	433	1060	433
161	Coast Guard * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islande..	67	64	68	64
162	AGR/TAR * US + Overseas * E1 to E4 * Male * non-Hispanic White	10	21	11	19
163	AGR/TAR * US + Overseas * E1 to E4 * Male * non-Hispanic Black	2	7	3	4
164	AGR/TAR * US + Overseas * E1 to E4 * Male * Hispanic (any race)	2	7	2	2
165	AGR/TAR * US + Overseas * E1 to E4 * Male * Native American + Asian & Pacific Islander + Other	2	7	2	3
166	AGR/TAR * US + Overseas * E1 to E4 * Female * non-Hispanic White	18	37	17	35
167	AGR/TAR * US + Overseas * E1 to E4 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	18	62	22	36
168	AGR/TAR * US + Overseas * E5 to E9 * Male * non-Hispanic White	175	243	171	219

Table A-4. (continued)

Stratum Number	Description	Original Design Allocation	Sample Size	Redesign Allocation	Sample Size
169	AGR/TAR * US + Overseas * E5 to E9 * Male * non-Hispanic Black	21	42	21	37
170	AGR/TAR * US + Overseas * E5 to E9 * Male * Hispanic (any race)	11	24	13	18
171	AGR/TAR * US + Overseas * E5 to E9 * Male * Native American + Asian & Pacific Islander + Other	8	18	10	12
172	AGR/TAR * US + Overseas * E5 to E9 * Female * non-Hispanic White	865	1185	826	1116
173	AGR/TAR * US + Overseas * E5 to E9 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	391	767	408	628
174	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic White	203	271	200	244
175	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * non-Hispanic Black	10	16	11	14
176	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * Hispanic (any race)	6	12	7	9
177	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Male * Native American + Asian & Pacific Islander + Other	7	14	8	9
178	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic White	310	408	307	374
179	AGR/TAR * US + Overseas * W1 to W5 + O1 to O6 * Female * non-Hispanic Black + Hispanic (any race) + Native American + Asian & Pacific Islander + Other	77	120	79	101
180	Unknown	124	228	124	208

Table A-5.
EOS Stratum Definitions

Stratum Number	Stratum Size	Dimensions	Levels
1	53,676	Service/Component Location Paygrade Race/Ethnicity	Army US E1 to E3 non-Hispanic White
2	19,657	Service/Component Location Paygrade Race/Ethnicity	Army US E1 to E3 non-Hispanic Black
3	6,193	Service/Component Location Paygrade Race/Ethnicity	Army US E1 to E3 Hispanic (any race)
4	668	Service/Component Location Paygrade Race/Ethnicity	Army US E1 to E3 Native American
5	2,077	Service/Component Location Paygrade Race/Ethnicity	Army US E1 to E3 Asian & Pacific Islander
6	1,813	Service/Component Location Paygrade Race/Ethnicity	Army US E1 to E3 Other
7	56,847	Service/Component Location Paygrade Race/Ethnicity	Army US E4 non-Hispanic White
8	23,380	Service/Component Location Paygrade Race/Ethnicity	Army US E4 non-Hispanic Black
9	4,828	Service/Component Location Paygrade Race/Ethnicity	Army US E4 Hispanic (any race)
10	591	Service/Component Location Paygrade Race/Ethnicity	Army US E4 Native American
11	2,112	Service/Component Location Paygrade Race/Ethnicity	Army US E4 Asian & Pacific Islander
12	3,041	Service/Component Location Paygrade Race/Ethnicity	Army US E4 Other
13	54,387	Service/Component Location Paygrade Race/Ethnicity	Army US E5 to E6 non-Hispanic White

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
14	36,511	Service/Component Location Paygrade Race/Ethnicity	Army US E5 to E6 non-Hispanic Black
15	5,157	Service/Component Location Paygrade Race/Ethnicity	Army US E5 to E6 Hispanic (any race)
16	575	Service/Component Location Paygrade Race/Ethnicity	Army US E5 to E6 Native American
17	1,982	Service/Component Location Paygrade Race/Ethnicity	Army US E5 to E6 Asian & Pacific Islander
18	4,374	Service/Component Location Paygrade Race/Ethnicity	Army US E5 to E6 Other
19	21,715	Service/Component Location Paygrade Race/Ethnicity	Army US E7 to E9 non-Hispanic White
20	15,221	Service/Component Location Paygrade Race/Ethnicity	Army US E7 to E9 non-Hispanic Black
21	2,819	Service/Component Location Paygrade Race/Ethnicity	Army US E7 to E9 Hispanic (any race)
22	221	Service/Component Location Paygrade Race/Ethnicity	Army US E7 to E9 Native American
23	883	Service/Component Location Paygrade Race/Ethnicity	Army US E7 to E9 Asian & Pacific Islander
24	1,688	Service/Component Location Paygrade Race/Ethnicity	Army US E7 to E9 Other
25	52,388	Service/Component Location Paygrade Race/Ethnicity	Army US W1 to W5 + O1 toO6 non-Hispanic White
26	7,493	Service/Component Location Paygrade Race/Ethnicity	Army US W1 to W5 + O1 to O6 non-Hispanic Black

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
27	2,055	Service/Component Location Paygrade Race/Ethnicity	Army US W1 to W5 + O1 to O6 Hispanic (any race)
28	305	Service/Component Location Paygrade Race/Ethnicity	Army US W1 to W5 + O1 to O6 Native American
29	1,568	Service/Component Location Paygrade Race/Ethnicity	Army US W1 to W5 + O1 to O6 Asian & Pacific Islander
30	1,002	Service/Component Location Paygrade Race/Ethnicity	Army US W1 to W5 + O1 to O6 Other
31	10,765	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E1 to E3 non-Hispanic White
32	4,096	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E1 to E3 non-Hispanic Black
33	1,139	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E1 to E3 Hispanic (any race)
34	126	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E1 to E3 Native American
35	466	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E1 to E3 Asian & Pacific Islander
36	339	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E1 to E3 Other
37	18,418	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E4 non-Hispanic White
38	8,214	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E4 non-Hispanic Black
39	1,640	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E4 Hispanic (any race)

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
40	205	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E4 Native American
41	738	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E4 Asian & Pacific Islander
42	985	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E4 Other
43	15,878	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E5 to E6 non-Hispanic White
44	12,344	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E5 to E6 non-Hispanic Black
45	1,705	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E5 to E6 Hispanic (any race)
46	180	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E5 to E6 Native American
47	697	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E5 to E6 Asian & Pacific Islander
48	1,465	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E5 to E6 Other
49	4,816	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E7 to E9 non-Hispanic White
50	4,211	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E7 to E9 non-Hispanic Black
51	759	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E7 to E9 Hispanic (any race)
52	60	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E7 to E9 Native American

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Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
53	283	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E7 to E9 Asian & Pacific Islander
54	521	Service/Component Location Paygrade Race/Ethnicity	Army Overseas E7 to E9 Other
55	11,800	Service/Component Location Paygrade Race/Ethnicity	Army Overseas W1 to W5 + O1 to O6 non-Hispanic White
56	1,716	Service/Component Location Paygrade Race/Ethnicity	Army Overseas W1 to W5 + O1 to O6 non-Hispanic Black
57	577	Service/Component Location Paygrade Race/Ethnicity	Army Overseas W1 to W5 + O1 to O6 Hispanic (any race)
58	85	Service/Component Location Paygrade Race/Ethnicity	Army Overseas W1 to W5 + O1 to O6 Native American
59	427	Service/Component Location Paygrade Race/Ethnicity	Army Overseas W1 to W5 + O1 to O6 Asian & Pacific Islander
60	243	Service/Component Location Paygrade Race/Ethnicity	Army Overseas W1 to W5 + O1 to O6 Other
61	60,920	Service/Component Location Paygrade Race/Ethnicity	Navy US E1 to E3 non-Hispanic White
62	20,078	Service/Component Location Paygrade Race/Ethnicity	Navy US E1 to E3 non-Hispanic Black
63	10,904	Service/Component Location Paygrade Race/Ethnicity	Navy US E1 to E3 Hispanic (any race)
64	916	Service/Component Location Paygrade Race/Ethnicity	Navy US E1 to E3 Native American
65	3,987	Service/Component Location Paygrade Race/Ethnicity	Navy US E1 to E3 Asian & Pacific Islander

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
66	177	Service/Component	Navy
		Location	US
		Paygrade	E1 to E3
		Race/Ethnicity	Other
67	40,509	Service/Component	Navy
		Location	US
		Paygrade	E4
		Race/Ethnicity	non-Hispanic White
68	13,263	Service/Component	Navy
		Location	US
		Paygrade	E4
		Race/Ethnicity	non-Hispanic Black
69	5,755	Service/Component	Navy
		Location	US
		Paygrade	E4
		Race/Ethnicity	Hispanic (any race)
70	380	Service/Component	Navy
		Location	US
		Paygrade	E4
		Race/Ethnicity	Native American
71	2,793	Service/Component	Navy
		Location	US
		Paygrade	E4
		Race/Ethnicity	Asian & Pacific Islander
72	74	Service/Component	Navy
		Location	US
		Paygrade	E4
		Race/Ethnicity	Other
73	85,127	Service/Component	Navy
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	non-Hispanic White
74	22,972	Service/Component	Navy
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	non-Hispanic Black
75	7,311	Service/Component	Navy
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Hispanic (any race)
76	522	Service/Component	Navy
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Native American
77	6,857	Service/Component	Navy
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Asian & Pacific Islander
78	559	Service/Component	Navy
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Other

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
79	25,725	Service/Component Location Paygrade Race/Ethnicity	Navy US E7 to E9 non-Hispanic White
80	3,317	Service/Component Location Paygrade Race/Ethnicity	Navy US E7 to E9 non-Hispanic Black
81	995	Service/Component Location Paygrade Race/Ethnicity	Navy US E7 to E9 Hispanic (any race)
82	141	Service/Component Location Paygrade Race/Ethnicity	Navy US E7 to E9 Native American
83	2,536	Service/Component Location Paygrade Race/Ethnicity	Navy US E7 to E9 Asian & Pacific Islander
84	241	Service/Component Location Paygrade Race/Ethnicity	Navy US E7 to E9 Other
85	41,545	Service/Component Location Paygrade Race/Ethnicity	Navy US W1 to W5 + O1 to O6 non-Hispanic White
86	2,646	Service/Component Location Paygrade Race/Ethnicity	Navy US W1 to W5 + O1 to O6 non-Hispanic Black
87	1,558	Service/Component Location Paygrade Race/Ethnicity	Navy US W1to W5 + O1 to O6 Hispanic (any race)
88	187	Service/Component Location Paygrade Race/Ethnicity	Navy US W1 to W5 + O1 to O6 Native American
89	1,363	Service/Component Location Paygrade Race/Ethnicity	Navy US W1 to W5 + O1 to O6 Asian & Pacific Islander
90	169	Service/Component Location Paygrade Race/Ethnicity	Navy US W1 to W5 + O1 to O6 Other
91	7,736	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E1 to E3 non-Hispanic White

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
92	2,448	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E1 to E3 non-Hispanic Black
93	1,290	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas· E1 to E3 Hispanic (any race)
94	90	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E1 to E3 Native American
95	527	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E1 to E3 Asian & Pacific Islander
96	18	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E1 to E3 Other
97	6,380	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E4 non-Hispanic White
98	1,761	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E4 non-Hispanic Black
99	926	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E4 Hispanic (any race)
100	66	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E4 Native American
101	614	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E4 Asian & Pacific Islander
102	14	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E4 Other
103	11,558	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E5 to E6 non-Hispanic White
104	3,798	Service/Component Location Paygrade Race/Ethnicity	Navy Overseas E5 to E6 non-Hispanic Black

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
105	1,368	Service/Component	Navy
		Location	Overseas
		Paygrade	E5 to E6
		Race/Ethnicity	Hispanic (any race)
106	84	Service/Component	Navy
		Location	Overseas
		Paygrade	E5 to E6
		Race/Ethnicity	Native American
107	2,006	Service/Component	Navy
		Location	Overseas
		Paygrade	E5 to E6
		Race/Ethnicity	Asian & Pacific Islander
108	127	Service/Component	Navy
		Location	Overseas
		Paygrade	E5 to E6
		Race/Ethnicity	Other
109	3,120	Service/Component	Navy
		Location	Overseas
		Paygrade	E7 to E9
		Race/Ethnicity	non-Hispanic White
110	505	Service/Component	Navy
		Location	Overseas
		Paygrade	E7 to E9
		Race/Ethnicity	non-Hispanic Black
111	161	Service/Component	Navy
		Location	Overseas
		Paygrade	E7 to E9
		Race/Ethnicity	Hispanic (any race)
112	12	Service/Component	Navy
		Location	Overseas
		Paygrade	E7 to E9
		Race/Ethnicity	Native American
113	581	Service/Component	Navy
		Location	Overseas
		Paygrade	E7 to E9
		Race/Ethnicity	Asian & Pacific Islander
114	54	Service/Component	Navy
		Location	Overseas
		Paygrade	E7 to E9
		Race/Ethnicity	Other
115	7,590	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	non-Hispanic White
116	591	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	non-Hispanic Black
117	350	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Hispanic (any race)

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
118	46	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Native American
119	341	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Asian & Pacific Islander
120	48	Service/Component	Navy
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Other
121	51,727	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	non-Hispanic White
122	10,086	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	non-Hispanic Black
123	9,053	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Hispanic (any race)
124	804	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Native American
125	1,405	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Asian & Pacific Islander
126	874	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Other
127	22,702	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	non-Hispanic White
128	3,930	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	non-Hispanic Black
129	3,259	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	Hispanic (any race)
130	248	Service/Component	Marine Corps
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	Native American

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Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
131	590	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E4 Asian & Pacific Islander
132	387	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E4 Other
133	23,122	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E5 to E6 non-Hispanic White
134	8,624	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E5 to E6 non-Hispanic Black
135	3,133	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E5 to E6 Hispanic (any race)
136	231	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E5 to E6 Native American
137	639	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E5 to E6 Asian & Pacific Islander
138	373	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E5 to E6 Other
139	8,248	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E7 to E9 non-Hispanic White
140	3,363	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E7 to E9 non-Hispanic Black
141	1,073	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E7 to E9 Hispanic (any race)
142	66	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E7 to E9 Native American
143	215	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E7 to E9 Asian & Pacific Islander

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
144	125	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas E7 to E9 Other
145	15,700	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas W1 to W5 + O1 to O6 non-Hispanic White
146	1,076	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas W1 to W5 + O1 to O6 non-Hispanic Black
147	689	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas W1 to W5 + O1 to O6 Hispanic (any race)
148	107	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas W1 to W5 + O1 to O6 Native American
149	267	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas W1 to W5 + O1 to O6 Asian & Pacific Islander
150	72	Service/Component Location Paygrade Race/Ethnicity	Marine Corps US + Overseas W1 to W5 + O1 to O6 Other
151	47,790	Service/Component Location Paygrade Race/Ethnicity	Air Force US E1 to E3 non-Hispanic White
152	9,286	Service/Component Location Paygrade Race/Ethnicity	Air Force US E1 to E3 non-Hispanic Black
153	3,679	Service/Component Location Paygrade Race/Ethnicity	Air Force US E1 to E3 Hispanic (any race)
154	314	Service/Component Location Paygrade Race/Ethnicity	Air Force US E1 to E3 Native American
155	1,637	Service/Component Location Paygrade Race/Ethnicity	Air Force US E1 to E3 Asian & Pacific Islander
156	809	Service/Component Location Paygrade Race/Ethnicity	Air Force US E1 to E3 Other

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
157	51,083	Service/Component	Air Force
		Location	US
		Paygrade	E4
		Race/Ethnicity	non-Hispanic White
158	8,756	Service/Component	Air Force
		Location	US
		Paygrade	E4
		Race/Ethnicity	non-Hispanic Black
159	2,372	Service/Component	Air Force
		Location	US
		Paygrade	E4
		Race/Ethnicity	Hispanic (any race)
160	239	Service/Component	Air Force
		Location	US
		Paygrade	E4
		Race/Ethnicity	Native American
161	1,173	Service/Component	Air Force
		Location	US
		Paygrade	E4
		Race/Ethnicity	Asian & Pacific Islander
162	490	Service/Component	Air Force
		Location	US
		Paygrade	E4
		Race/Ethnicity	Other
163	69,568	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	non-Hispanic White
164	17,235	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	non-Hispanic Black
165	3,666	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Hispanic (any race)
166	488	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Native American
167	1,671	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Asian & Pacific Islander
168	801	Service/Component	Air Force
		Location	US
		Paygrade	E5 to E6
		Race/Ethnicity	Other
169	25,370	Service/Component	Air Force
		Location	US
		Paygrade	E7 to E9
		Race/Ethnicity	non-Hispanic White

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
170	6,320	Service/Component	Air Force
		Location	US
		Paygrade	E7 to E9
		Race/Ethnicity	non-Hispanic Black
171	1,378	Service/Component	Air Force
		Location	US
		Paygrade	E7 to E9
		Race/Ethnicity	Hispanic (any race)
172	352	Service/Component	Air Force
		Location	US
		Paygrade	E7 to E9
		Race/Ethnicity	Native American
173	621	Service/Component	Air Force
		Location	US
		Paygrade	E7 to E9
		Race/Ethnicity	Asian & Pacific Islander
174	256	Service/Component	Air Force
		Location	US
		Paygrade	E7 to E9
		Race/Ethnicity	Other
175	59,345	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	non-Hispanic White
176	3,734	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	non-Hispanic Black
177	1,312	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Hispanic (any race)
178	275	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Native American
179	1,163	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Asian & Pacific Islander
180	1,238	Service/Component	Air Force
		Location	US
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Other
181	6,133	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	non-Hispanic White
182	1,231	Service/Component	Air Force
		Location	Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	non-Hispanic Black

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
183	453	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E1 to E3 Hispanic (any race)
184	53	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E1 to E3 Native American
185	192	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E1 to E3 Asian & Pacific Islander
186	78	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E1 to E3 Other
187	12,952	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E4 non-Hispanic White
188	2,785	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E4 non-Hispanic Black
189	638	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E4 Hispanic (any race)
190	64	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E4 Native American
191	364	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E4 Asian & Pacific Islander
192	158	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E4 Other
193	15,808	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E5 to E6 non-Hispanic White
194	5,540	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E5 to E6 non-Hispanic Black
195	963	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E5 to E6 Hispanic (any race)

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
196	129	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E5 to E6 Native American
197	676	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E5 to E6 Asian & Pacific Islander
198	305	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E5 to E6 Other
199	5,030	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E7 to E9 non-Hispanic White
200	1,658	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E7 to E9 non-Hispanic Black
201	325	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E7 to E9 Hispanic (any race)
202	71	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E7 to E9 Native American
203	214	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E7 to E9 Asian & Pacific Islander
204	80	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas E7 to E9 Other
205	7,395	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 non-Hispanic White
206	541	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 non-Hispanic Black
207	215	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 Hispanic (any race)
208	26	Service/Component Location Paygrade Race/Ethnicity	Air Force Overseas W1 to W5 + O1 to O6 Native American

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
209	184	Service/Component	Air Force
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Asian & Pacific Islander
210	172	Service/Component	Air Force
		Location	Overseas
		Paygrade	W1 to W5 + O1 to O6
		Race/Ethnicity	Other
211	4,903	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	non-Hispanic White
212	403	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	non-Hispanic Black
213	600	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Hispanic (any race)
214	243	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Native American + Other
215	215	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E1 to E3
		Race/Ethnicity	Asian & Pacific Islander
216	5,145	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	non-Hispanic White
217	427	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	non-Hispanic Black
218	465	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	Hispanic (any race)
219	285	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	Native American + Other
220	151	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E4
		Race/Ethnicity	Asian & Pacific Islander
221	12,381	Service/Component	Coast Guard
		Location	US + Overseas
		Paygrade	E5 to E6 + E7 to E9
		Race/Ethnicity	non-Hispanic White

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
222	1,277	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas E5 to E6 + E7 to E9 non-Hispanic Black
223	711	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas E5 to E6 + E7 to E9 Hispanic (any race)
224	226	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas E5 to E6 + E7 to E9 Native American + Other
225	221	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas E5 to E6 + E7 to E9 Asian & Pacific Islander
226	6,493	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas W1 to W5 + O1 to O6 non-Hispanic White
227	215	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas W1 to W5 + O1 to O6 non-Hispanic Black
228	206	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas W1 to W5 + O1 to O6 Hispanic (any race)
229	39	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas W1 to W5 + O1 to O6 Native American + Other
230	188	Service/Component Location Paygrade Race/Ethnicity	Coast Guard US + Overseas W1 to W5 + O1 to O6 Asian & Pacific Islander
231	2,518	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E1 to E3 + E4 non-Hispanic White
232	668	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E1 to E3 + E4 non-Hispanic Black
233	355	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E1 to E3 + E4 Hispanic (any race)
234	30	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E1 to E3 + E4 Native American

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
235	99	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E1 to E3 + E4 Asian & Pacific Islander
236	21	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E1 to E3 + E4 Other
237	20,094	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E5 to E6 non-Hispanic White
238	4,686	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E5 to E6 non-Hispanic Black
239	1,658	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E5 to E6 Hispanic (any race)
240	225	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E5 to E6 Native American
241	618	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E5 to E6 Asian & Pacific Islander
242	222	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E5 to E6 Other
243	16,296	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E7 to E9 non-Hispanic White
244	2,061	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E7 to E9 non-Hispanic Black
245	962	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E7 to E9 Hispanic (any race)
246	187	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E7 to E9 Native American
247	352	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E7 to E9 Asian & Pacific Islander

Table A-5. (continued)

Stratum Number	Stratum Size	Dimensions	Levels
248	135	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas E7 to E9 Other
249	10,002	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas W1 to W5 + O1 to O6 non-Hispanic White
250	732	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas W1 to W5 + O1 to O6 non-Hispanic Black
251	369	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas W1 to W5 + O1 to O6 Hispanic (any race)
252	69	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas W1 to W5 + O1 to O6 Native American
253	231	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas W1 to W5 + O1 to O6 Asian & Pacific Islander
254	41	Service/Component Location Paygrade Race/Ethnicity	AGR/TARS US + Overseas W1 to W5 + O1 to O6 Other
255	9,334	Unknown	

Table A-6.
EOS Domain Definitions, Prevalence Rates and Variance Constraints

Domain Number	Domain Label	Domain Size[4]	Population Proportion	Prevalence	Precision Constraint
1	All Domains	1,564,329	0.994	0.5	0.02
2	Army	490,125	0.311	0.5	0.02
3	Navy	417,737	0.265	0.5	0.02
4	Marine Corps	172,188	0.109	0.5	0.02
5	Air Force	386,854	0.246	0.5	0.02
6	Coast Guard	34,794	0.022	0.5	0.03
7	AGR/TARS	62,631	0.040	0.5	0.03
8	US	1,306,941	0.831	0.5	0.02
9	Overseas	257,388	0.164	0.5	0.02
10	E1 to E3	362,945	0.231	0.5	0.02
11	E4	315,017	0.200	0.5	0.02
12	E5 to E6	469,402	0.298	0.5	0.02
13	E7 to E9	168,776	0.107	0.5	0.02
14	W1 to O6	248,189	0.158	0.5	0.02
15	non-Hispanic White	1,090,705	0.693	0.5	0.015
16	non-Hispanic Black	298,856	0.190	0.5	0.012
17	Hispanic (any race)	95,024	0.060	0.5	0.015
18	Native American	10,231	0.007	0.5	0.015
19	Asian & Pacific Islander	45,924	0.029	0.5	0.015
20	Other	23,589	0.015	0.5	0.025
21	Army non-Hispanic White	300,690	0.191	0.5	0.03
22	Army * non-Hispanic Black	132,843	0.084	0.5	0.03
23	Army * Hispanic (any race)	26,872	0.017	0.5	0.03
24	Army * Asian & Pacific Islander	11,233	0.007	0.5	0.03
25	Navy * non-Hispanic White	290,210	0.184	0.5	0.03
26	Navy * non-Hispanic Black	71,379	0.045	0.5	0.03
27	Navy * Hispanic (any race)	30,618	0.019	0.5	0.03
28	Navy * Asian & Pacific Islander	21,605	0.014	0.5	0.03
29	Marine Corps * non-Hispanic White	121,499	0.077	0.5	0.03
30	Marine Corps * non-Hispanic Black	27,079	0.017	0.5	0.03
31	Marine Corps * Hispanic (any race)	17,207	0.011	0.5	0.03
32	Marine Corps * Asian & Pacific Islander	3,116	0.002	0.5	0.03
33	Air Force * non-Hispanic White	300,474	0.191	0.5	0.03
34	Air Force * non-Hispanic Black	57,086	0.036	0.5	0.03
35	Air Force * Hispanic (any race)	15,001	0.010	0.5	0.03
36	Air Force * Asian & Pacific Islander	7,895	0.005	0.5	0.03
37	Coast Guard * non-Hispanic White	28,922	0.018	0.5	0.04
38	Coast Guard * non-Hispanic Black	2,322	0.001	0.5	0.04
39	Coast Guard * Hispanic (any race)	1,982	0.001	0.5	0.04
40	Coast Guard * Asian & Pacific Islander	775	0.000	0.5	0.04
41	AGR/TARS * non-Hispanic White	48,910	0.031	0.5	0.05
42	AGR/TARS * non-Hispanic Black	8,147	0.005	0.5	0.05
43	AGR/TARS * Hispanic (any race)	3,344	0.002	0.5	0.05
44	AGR/TARS * Asian & Pacific Islander	1,300	0.001	0.5	0.05
45	Male * non-Hispanic White	970,257	0.617	0.5	0.05
46	Male * non-Hispanic Black	236,617	0.150	0.5	0.05
47	Male * Hispanic (any race)	83,402	0.053	0.5	0.05
48	Male * Asian & Pacific Islander	40,271	0.026	0.5	0.05

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[4] The domain sizes exclude 9,334 persons classified into the unknown stratum.

Table A-6. (continued)

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
49	Female * non-Hispanic White	120,423	0.077	0.5	0.05
50	Female * non-Hispanic Black	62,235	0.040	0.5	0.05
51	Female * Hispanic (any race)	11,620	0.007	0.5	0.05
52	Female * Asian & Pacific Islander	5,653	0.004	0.5	0.05
53	Female * Native American & Other	5,117	0.003	0.5	
54	Army * E1 to E4 * non-Hispanic White	139,706	0.089	0.5	0.05
55	Army * E1 to E4 * non-Hispanic Black	55,347	0.035	0.5	0.05
56	Army * E1 to E4 * Hispanic (any race)	13,800	0.009	0.5	0.05
57	Army * E1 to E4 * Asian & Pacific Islander + Native American + Other	13,161	0.008	0.5	0.05
58	Army * E5 to E9 * non-Hispanic White	96,796	0.062	0.5	0.05
59	Army * E5 to E9 * non-Hispanic Black	68,287	0.043	0.5	0.05
60	Army * E5 to E9 * Hispanic (any race)	10,440	0.007	0.5	0.05
61	Army * E5 to E9 * Asian & Pacific Islander + Native American + Other	12,929	0.008	0.5	0.05
62	Army * W1 to O6 * non-Hispanic White	64,188	0.041	0.5	0.05
63	Army * W1 to O6 * non-Hispanic Black	9,209	0.006	0.5	0.05
64	Army * W1 to O6 * Hispanic (any race)	2,632	0.002	0.5	0.05
65	Army * W1 to O6 * Asian & Pacific Islander + Native American + Other	3,630	0.002	0.5	0.05
66	Navy * E1 to E4 * non-Hispanic White	115,545	0.073	0.5	0.05
67	Navy * E1 to E4 * non-Hispanic Black	37,550	0.024	0.5	0.05
68	Navy * E1 to E4 * Hispanic (any race)	18,875	0.012	0.5	0.05
69	Navy * E1 to E4 * Asian & Pacific Islander + Native American + Other	9,656	0.006	0.5	0.05
70	Navy * E5 to E9 * non-Hispanic White	125,530	0.080	0.5	0.05
71	Navy * E5 to E9 * non-Hispanic Black	30,592	0.019	0.5	0.05
72	Navy * E5 to E9 * Hispanic (any race)	9,835	0.006	0.5	0.05
73	Navy * E5 to E9 * Asian & Pacific Islander + Native American + Other	13,720	0.009	0.5	0.05
74	Navy * W1 to O6 * non-Hispanic White	49,135	0.031	0.5	0.05
75	Navy * W1 to O6 * non-Hispanic Black	3,237	0.002	0.5	0.05
76	Navy * W1 to O6 * Hispanic (any race)	1,908	0.001	0.5	0.05
77	Navy * W1 to O6 * Asian & Pacific Islander + Native American + Other	2,154	0.001	0.5	0.05
78	Marine Corps * E1 to E4 * non-Hispanic White	74,429	0.047	0.5	0.05
79	Marine Corps * E1 to E4 * non-Hispanic Black	14,016	0.009	0.5	0.05
80	Marine Corps * E1 to E4 * Hispanic (any race)	12,312	0.008	0.5	0.05
81	Marine Corps * E1 to E4 * Asian & Pacific Islander + Native American + Other.	4,308	0.003	0.5	0.05
82	Marine Corps * E5 to E9 * non-Hispanic White	31,370	0.020	0.5	0.05
83	Marine Corps * E5 to E9 * non-Hispanic Black	11,987	0.008	0.5	0.05
84	Marine Corps * E5 to E9 * Hispanic (any race)	4,206	0.003	0.5	0.05

Table A-6. (continued)

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
85	Marine Corps * E5 to E9 * Asian & Pacific Islander + Native American + Other	1,649	0.001	0.5	0.05
86	Marine Corps * W1 to O6 * non-Hispanic White	15,700	0.010	0.5	0.05
87	Marine Corps * W1 to O6 * non-Hispanic Black	1,076	0.001	0.5	0.05
88	Marine Corps * W1 to O6 * Hispanic (any race)	689	0.000	0.5	0.05
89	Marine Corps * W1 to O6 * Asian & Pacific Islander + Native American + Other	446	0.000	0.5	0.05
90	Air Force * E1 to E4 * non-Hispanic White	117,958	0.075	0.5	0.05
91	Air Force * E1 to E4 * non-Hispanic Black	22,058	0.014	0.5	0.05
92	Air Force * E1 to E4 * Hispanic (any race)	7,142	0.005	0.5	0.05
93	Air Force * E1 to E4 * Asian & Pacific Islander + Native American + Other	5,571	0.004	0.5	0.05
94	Air Force * E5 to E9 * non-Hispanic White	115,776	0.074	0.5	0.05
95	Air Force * E5 to E9 * non-Hispanic Black	30,753	0.020	0.5	0.05
96	Air Force * E5 to E9 * Hispanic (any race)	6,332	0.004	· 0.5	0.05
97	Air Force * E5 to E9 * Asian & Pacific Islander + Native American + Other	5,664	0.004	0.5	0.05
98	Air Force * W1 to O6 * non-Hispanic White	66,740	0.042	0.5	0.05
99	Air Force * W1 to O6 * non-Hispanic Black	4,275	0.003	0.5	0.05
100	Air Force * W1 to O6 * Hispanic (any race)	1,527	0.001	0.5	0.05
101	Air Force * W1 to O6 * Asian & Pacific Islander + Native American + Other	3,058	0.002	0.5	0.05
102	Coast Guard * E1 to E4 * non-Hispanic White	10,048	0.006	0.5	0.05
103	Coast Guard * E1 to E4 * non-Hispanic Black	830	0.001	0.5	0.05
104	Coast Guard * E1 to E4 * Hispanic (any race)	1,065	0.001	0.5	0.05
105	Coast Guard * E1 to E4 * Asian & Pacific Islander + Native American + Other	894	0.001	0.5	0.05
106	Coast Guard * E5 to E9 * non-Hispanic White	12,381	0.008	0.5	0.05
107	Coast Guard * E5 to E9 * non-Hispanic Black	1,277	0.001	0.5	0.05
108	Coast Guard * E5 to E9 * Hispanic (any race)	711	0.000	0.5	0.05

103

Table A-6. (continued)

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
109	Coast Guard * E5 to E9 * Asian & Pacific Islander + Native American + Other	447	0.000	0.5	0.05
110	Coast Guard * W1 to O6 * non-Hispanic White	6,493	0.004	0.5	0.08
111	Coast Guard * W1 to O6 * non-Hispanic Black	215	0.000	0.5	0.08
112	Coast Guard * W1 to O6 * Hispanic (any race)	206	0.000	0.5	0.08
113	Coast Guard * W1 to O6 * Asian & Pacific Islander + Native American + Other	227	0.000	0.5	0.08
114	E1 to E3 * non-Hispanic White	244,231	0.155	0.5	0.04
115	E1 to E3 * non-Hispanic Black	67,445	0.043	0.5	0.04
116	E1 to E3 * Hispanic (any race)	33,398	0.021	0.5	0.04
117	E4 * non-Hispanic White	215,973	0.137	0.5	0.04
118	E4 * non-Hispanic Black	63,024	0.040	0.5	0.04
119	E4 * Hispanic (any race)	20,151	0.013	0.5	0.04
120	E5 to E6 * non-Hispanic White	304,949	0.194	0.5	0.04
121	E5 to E6 * non-Hispanic Black	112,725	0.072	0.5	0.04
122	E5 to E6 * Hispanic (any race)	25,566	0.016	0.5	0.04
123	E5 to E6 * Asian & Pacific Islander + Native American + Other	26,162	0.017	0.5	
124	E7 to E9 * non-Hispanic White	113,294	0.072	0.5	0.04
125	E7 to E9 * non-Hispanic Black	36,918	0.023	0.5	0.04
126	E7 to E9 * Hispanic (any race)	8,578	0.005	0.5	0.04
127	W1 to O3 * non-Hispanic White	130,167	0.083	0.5	0.04
128	W1 to O3 * non-Hispanic Black	12,796	0.008	0.5	0.04
129	W1 to O3 * Hispanic (any race)	5,171	0.003	0.5	0.04
130	O4 to O6 * non-Hispanic White	82,091	0.052	0.5	0.04
131	O4 to O6 * non-Hispanic Black	5,948	0.004	0.5	0.04
132	O4 to O6 * Hispanic (any race)	2,160	0.001	0.5	0.04
133	E1 to E3 * Native American	3,224	0.002	0.5	0.04
134	E1 to E3 * Asian & Pacific Islander	10,536	0.007	0.5	0.04
135	E4 * Native American	2,098	0.001	0.5	0.04
136	E4 * Asian & Pacific Islander	8,604	0.005	0.5	0.04
137	E5 to E6 * Native American	2,642	0.002	0.5	0.04
138	E5 to E6 * Asian & Pacific Islander	15,294	0.010	0.5	0.04
139	E7 to E9 * Native American	1,128	0.001	0.5	0.04
140	E7 to E9 * Asian & Pacific Islander	5,758	0.004	0.5	0.04
141	W1 to O3 * Native American	752	0.000	0.5	0.04
142	W1 to O3 * Asian & Pacific Islander	4,134	0.003	0.5	0.04
143	O4 to O6 * Native American	387	0.000	0.5	0.04
144	O4 to O6 * Asian & Pacific Islander	1,598	0.001	0.5	0.04
145	Male * Native American	8,452	0.005	0.5	0.05
146	Female * Native American	1,779	0.001	0.5	0.05
147	Army * Native American	3,016	0.002	0.5	0.03
148	Navy * Native American	2,444	0.002	0.5	0.03
149	Marine Corps * Native American	1,456	0.001	0.5	0.03
150	Air Force * Native American	2,011	0.001	0.5	0.03
151	Coast Guard * Native American	793	0.001	0.5	0.04

Table A-6. (continued)

Domain Number	Domain Label	Domain Size	Population Proportion	Prevalence	Precision Constraint
152	AGR/TARS * Native American	511	0.000	0.5	0.05
153	US * non-Hispanic White	921,793	0.586	0.5	0.03
154	US * non-Hispanic Black	242,348	0.154	0.5	0.03
155	US * Hispanic (any race)	78,754	0.050	0.5	0.03
156	US * Asian & Pacific Islander	36,760	0.023	0.5	0.03
157	Overseas * non-Hispanic White	168,912	0.107	0.5	0.03
158	Overseas * non-Hispanic Black	56,508	0.036	0.5	0.03
159	Overseas * Hispanic (any race)	16,270	0.010	0.5	0.03
160	Overseas * Asian & Pacific Islander	9,164	0.006	0.5	0.03
161	US * Native American	8,627	0.005	0.5	0.03
162	US * Asian & Pacific Islander	36,760	0.023	0.5	0.03
163	Europe * non-Hispanic White	78,018	0.050	0.5	0.05
164	Europe * non-Hispanic Black	27,985	0.018	0.5	0.05
165	Europe * Hispanic (any race)	5,962	0.004	0.5	0.05
166	Europe * Native American	650	0.000	0.5	0.05
167	Europe * Asian & Pacific Islander	2,438	0.002	0.5	0.05
168	Asia & Pacific Islands * non-Hispanic White	62,486	0.040	0.5	0.05
169	Asia & Pacific Islands * non-Hispanic Black	21,442	0.014	0.5	0.05
170	Asia & Pacific Islands * Hispanic (any race)	6,294	0.004	0.5	0.05
171	Asia & Pacific Islands * Native American	661	0.000	0.5	0.05
172	Asia & Pacific Islands * Asian & Pacific Islander	5,250	0.003	0.5	0.05

Table A-7.
EOS Estimated and Experienced Response Rates

Stratum Numbers	Description	Response Rate Design	Actual
1	Army * US * E1 to E3 * non-Hispanic White	0.362	0.346
2	Army * US * E1 to E3 * non-Hispanic Black	0.430	0.281
3	Army * US * E1 to E3 * Hispanic (any race)	0.483	0.377
4	Army * US * E1 to E3 * Native American	0.439	0.390
5	Army * US * E1 to E3 * Asian & Pacific Islander	0.596	0.426
6	Army * US * E1 to E3* Other	0.439	0.410
7	Army * US * E4 * non-Hispanic White	0.353	0.447
8	Army * US * E4 * non-Hispanic Black	0.436	0.327
9	Army * US * E4 * Hispanic (any race)	0.497	0.472
10	Army * US * E4 * Native American	0.397	0.433
11	Army * US * E4 *Asian & Pacific Islander	0.593	0.529
12	Army * US * E4 * Other	0.397	0.422
13	Army * US * E5 to E6 * non-Hispanic White	0.469	0.580
14	Army * US * E5 to E6 * non-Hispanic Black	0.538	0.494
15	Army * US * E5 to E6 * Hispanic (any race)	0.639	0.591
16	Army * US * E5 to E6 * Native American	0.524	0.574
17	Army * US * E5 to E6 * Asian & Pacific Islander	0.670	0.595
18	Army * US * E5 to E6 * Other	0.524	0.559
19	Army * US * E7 to E9 * non-Hispanic White	0.577	0.726
20	Army * US * E7 to E9 * non-Hispanic Black	0.656	0.671
21	Army * US * E7 to E9 *Hispanic (any race)	0.672	0.689
22	Army * US * E7 to E9 * Native American	0.625	0.678
23	Army * US * E7 to E9 * Asian & Pacific Islander	0.687	0.760
24	Army * US * E7 to E9 * Other	0.625	0.625
25	Army * US * W1 to O6 * non-Hispanic White	0.571	0.749
26	Army * US * W1 to O6 * non-Hispanic Black	0.609	0.665
27	Army * US * W1 to O6 * Hispanic (any race)	0.643	0.724
28	Army * US * W1 to O6 * Native American	0.582	0.744
29	Army * US * W1 to O6 * Asian & Pacific Islander	0.723	0.749
30	Army * US * W1 to O6 * Other	0.582	0.723
31	Army * Overseas * E1 to E3 * non-Hispanic White	0.327	0.313
32	Army * Overseas * E1 to E3 * non-Hispanic Black	0.355	0.279
33	Army * Overseas * E1 to E3 * Hispanic (any race)	0.453	0.378
34	Army * Overseas * E1 to E3 * Native American	0.366	0.365
35	Army * Overseas * E1 to E3 * Asian & Pacific Islander	0.577	0.467
36	Army * Overseas * E1 to E3 * Other	0.366	0.250
37	Army * Overseas * E4 * non-Hispanic White	0.272	0.415
38	Army * Overseas * E4 * non-Hispanic Black	0.315	0.283
39	Army * Overseas * E4 * Hispanic (any race)	0.420	0.455
40	Army * Overseas * E4 * Native American	0.278	0.459
41	Army * Overseas * E4 * Asian & Pacific Islander	0.527	0.487
42	Army * Overseas * E4 * Other	0.278	0.415
43	Army * Overseas * E5 to E6 * non-Hispanic White	0.375	0.592
44	Army * Overseas * E5 to E6 * non-Hispanic Black	0.403	0.485
45	Army * Overseas * E5 to E6 * Hispanic (any race)	0.549	0.554
46	Army * Overseas * E5 to E6 * Native American	0.392	0.528
47	Army * Overseas * E5 to E6 * Asian & Pacific Islander	0.591	0.594
48	Army * Overseas * E5 to E6 * Other	0.392	0.562
49	Army * Overseas * E7 to E9 * non-Hispanic White	0.447	0.708
50	Army * Overseas * E7 to E9 * non-Hispanic Black	0.485	0.651

Table A-7. (continued)

Stratum Numbers	Description	Response Rate Design	Response Rate Actual
51	Army * Overseas * E7 to E9 * Hispanic (any race)	0.546	0.795
52	Army * Overseas * E7 to E9 * Native American	0.457	0.683
53	Army * Overseas * E7 to E9 * Asian & Pacific Islander	0.572	0.721
54	Army * Overseas * E7 to E9 * Other	0.457	0.722
55	Army * Overseas * W1 to O6 * non-Hispanic White	0.523	0.720
56	Army * Overseas * W1 to O6 * non-Hispanic Black	0.520	0.649
57	Army * Overseas * W1 to O6 * Hispanic (any race)	0.599	0.761
58	Army * Overseas * W1 to O6 * Native American	0.496	0.682
59	Army * Overseas * W1 to O6 * Asian & Pacific Islander	0.690	0.737
60	Army * Overseas * W1 to O6 * Other	0.496	0.688
61	Navy * US * E1 to E3 * non-Hispanic White	0.408	0.388
62	Navy * US * E1 to E3 * non-Hispanic Black	0.465	0.281
63	Navy * US * E1 to E3 * Hispanic (any race)	0.473	0.359
64	Navy * US * E1 to E3 * Native American	0.711	0.395
65	Navy * US * E1 to E3 * Asian & Pacific Islander	0.581	0.450
66	Navy * US * E1 to E3 * Other	0.711	0.300
67	Navy * US * E4 * non-Hispanic White	0.480	0.495
68	Navy * US * E4 * non-Hispanic Black	0.552	0.379
69	Navy * US * E4 * Hispanic (any race)	0.567	0.485
70	Navy * US * E4 * Native American	0.749	0.445
71	Navy * US * E4 * Asian & Pacific Islander	0.658	0.613
72	Navy * US * E4 * Other	0.749	0.375
73	Navy * US * E5 to E6 * non-Hispanic White	0.613	0.571
74	Navy * US * E5 to E6 * non-Hispanic Black	0.670	0.479
75	Navy * US * E5 to E6 * Hispanic (any race)	0.726	0.584
76	Navy * US * E5 to E6 * Native American	0.893	0.577
77	Navy * US * E5 to E6 * Asian & Pacific Islander	0.753	0.616
78	Navy * US * E5 to E6 * Other	0.893	0.560
79	Navy * US * E7 to E9 * non-Hispanic White	0.720	0.723
80	Navy * US * E7 to E9 * non-Hispanic Black	0.787	0.622
81	Navy * US * E7 to E9 * Hispanic (any race)	0.758	0.662
82	Navy * US * E7 to E9 * Native American	0.993	0.711
83	Navy * US * E7 to E9 * Asian & Pacific Islander	0.768	0.753
84	Navy * US * E7 to E9 * Other	0.993	0.762
85	Navy * US * W1 to O6 * non-Hispanic White	0.674	0.759
86	Navy * US * W1 to O6 * non-Hispanic Black	0.700	0.641
87	Navy * US * W1 to O6 * Hispanic (any race)	0.690	0.702
88	Navy * US * W1 to O6 * Native American	0.911	0.738
89	Navy * US * W1 to O6 * Asian & Pacific Islander	0.765	0.749
90	Navy * US * W1 to O6 * Other	0.911	0.800
91	Navy * Overseas * E1 to E3 * non-Hispanic White	0.456	0.386
92	Navy * Overseas * E1 to E3 * non-Hispanic Black	0.472	0.247
93	Navy * Overseas * E1 to E3 * Hispanic (any race)	0.525	0.445
94	Navy * Overseas * E1 to E3 * Native American	0.721	0.333
95	Navy * Overseas * E1 to E3 * Asian & Pacific Islander	0.644	0.497
96	Navy * Overseas * E1 to E3 * Other	0.721	0.0
97	Navy * Overseas * E4 * non-Hispanic White	0.482	0.503
98	Navy * Overseas * E4 * non-Hispanic Black	0.512	0.431
99	Navy * Overseas * E4 * Hispanic (any race)	0.573	0.515
100	Navy * Overseas * E4 * Native American	0.713	0.576

Table A-7. (continued)

Stratum Numbers	Description	Response Rate Design	Response Rate Actual
101	Navy * Overseas * E4 * Asian & Pacific Islander	0.675	0.696
102	Navy * Overseas * E4 * Other	0.713	0.667
103	Navy * Overseas * E5 to E6 * non-Hispanic White	0.601	0.656
104	Navy * Overseas * E5 to E6 * non-Hispanic Black	0.617	0.555
105	Navy * Overseas * E5 to E6 * Hispanic (any race)	0.718	0.633
106	Navy * Overseas * E5 to E6 * Native American	0.843	0.643
107	Navy * Overseas * E5 to E6 * Asian & Pacific Islander	0.756	0.719
108	Navy * Overseas * E5 to E6 * Other	0.843	0.769
109	Navy * Overseas * E7 to E9 * non-Hispanic White	0.672	0.743
110	Navy * Overseas * E7 to E9 * non-Hispanic Black	0.699	0.615
111	Navy * Overseas * E7 to E9 * Hispanic (any race)	0.714	0.824
112	Navy * Overseas * E7 to E9 * Native American	0.907	0.750
113	Navy * Overseas * E7 to E9 * Asian & Pacific Islander	0.735	0.822
114	Navy * Overseas * E7 to E9 * Other	0.907	0.833
115	Navy * Overseas * W1 to O6 * non-Hispanic White	0.709	0.845
116	Navy * Overseas * W1 to O6 * non-Hispanic Black	0.694	0.643
117	Navy * Overseas * W1 to O6 * Hispanic (any race)	0.728	0.734
118	Navy * Overseas * W1 to O6 * Native American	0.907	0.826
119	Navy * Overseas * W1 to O6 * Asian & Pacific Islander	0.814	0.787
120	Navy * Overseas * W1 to O6 * Other	0.907	0.750
121	Marine Corps * US + Overseas * E1 to E3 * non-Hispanic White	0.437	0.341
122	Marine Corps * US + Overseas * E1 to E3 * non-Hispanic Black	0.461	0.248
123	Marine Corps * US + Overseas * E1 to E3 * Hispanic (any race)	0.482	0.308
124	Marine Corps * US + Overseas * E1 to E3 * Native American	0.560	0.342
125	Marine Corps * US + Overseas * E1 to E3 * Asian & Pacific Islander	0.545	0.403
126	Marine Corps * US + Overseas * E1 to E3 * Other	0.560	0.343
127	Marine Corps * US + Overseas * E4 * non-Hispanic White	0.407	0.463
128	Marine Corps * US + Overseas * E4 * non-Hispanic Black	0.446	0.371
129	Marine Corps * US + Overseas * E4 * Hispanic (any race)	0.474	0.421
130	Marine Corps * US + Overseas * E4 * Native American	0.496	0.468
131	Marine Corps * US + Overseas * E4 * Asian & Pacific Islander	0.520	0.489
132	Marine Corps * US + Overseas * E4 * Other	0.496	0.580
133	Marine Corps * US + Overseas * E5 to E6 * non-Hispanic White	0.549	0.576
134	Marine Corps * US + Overseas * E5 to E6 * non-Hispanic Black	0.573	0.433
135	Marine Corps * US + Overseas * E5 to E6 * Hispanic (any race)	0.642	0.531
136	Marine Corps * US + Overseas * E5 to E6 * Native American	0.650	0.506
137	Marine Corps * US + Overseas * E5 to E6 * Asian & Pacific Islander	0.624	0.548
138	Marine Corps * US + Overseas * E5 to E6 * Other	0.650	0.574
139	Marine Corps * US + Overseas * E7 to E9 * non-Hispanic White	0.641	0.650
140	Marine Corps * US + Overseas * E7 to E9 * non-Hispanic Black	0.675	0.638
141	Marine Corps * US + Overseas * E7 to E9 * Hispanic (any race)	0.659	0.641
142	Marine Corps * US + Overseas * E7 to E9 * Native American	0.734	0.727
143	Marine Corps * US + Overseas * E7 to E9 * Asian & Pacific Islander	0.624	0.667
144	Marine Corps * US + Overseas * E7 to E9 * Other	0.734	0.818
145	Marine Corps * US + Overseas * W1 to O6 * non-Hispanic White	0.630	0.768
146	Marine Corps * US + Overseas * W1 to O6 * non-Hispanic Black	0.623	0.652
147	Marine Corps * US + Overseas * W1 to O6 * Hispanic (any race)	0.625	0.687

Table A-7. (continued)

Stratum Numbers	Description	Response Rate Design	Response Rate Actual
148	Marine Corps * US + Overseas * W1 to O6 * Native American	0.687	0.570
149	Marine Corps * US + Overseas * W1 to O6 * Asian & Pacific Islander	0.656	0.674
150	Marine Corps * US + Overseas * W1 to O6 * Other	0.687	0.682
151	Air Force * US * E1 to E3 * non-Hispanic White	0.565	0.557
152	Air Force * US * E1 to E3 * non-Hispanic Black	0.617	0.444
153	Air Force * US * E1 to E3 * Hispanic (any race)	0.626	0.500
154	Air Force * US * E1 to E3 * Native American	0.671	0.508
155	Air Force * US * E1 to E3 * Asian & Pacific Islander	0.703	0.592
156	Air Force * US * E1 to E3 * Other	0.671	0.591
157	Air Force * US * E4 * non-Hispanic White	0.547	0.493
158	Air Force * US * E4 * non-Hispanic Black	0.613	0.458
159	Air Force * US * E4 * Hispanic (any race)	0.630	0.485
160	Air Force * US * E4 * Native American	0.619	0.478
161	Air Force * US * E4 * Asian & Pacific Islander	0.690	0.558
162	Air Force * US * E4 * Other	0.619	0.702
163	Air Force * US * E5 to E6 * non-Hispanic White	0.655	0.639
164	Air Force * US * E5 to E6 * non-Hispanic Black	0.707	0.581
165	Air Force * US * E5 to E6 * Hispanic (any race)	0.764	0.630
166	Air Force * US * E5 to E6 * Native American	0.738	0.589
167	Air Force * US * E5 to E6 * Asian & Pacific Islander	0.760	0.706
168	Air Force * US * E5 to E6 * Other	0.738	0.704
169	Air Force * US * E7 to E9 * non-Hispanic White	0.691	0.681
170	Air Force * US * E7 to E9 * non-Hispanic Black	0.753	0.663
171	Air Force * US * E7 to E9 * Hispanic (any race)	0.725	0.645
172	Air Force * US * E7 to E9 * Native American	0.767	0.672
173	Air Force * US * E7 to E9 * Asian & Pacific Islander	0.704	0.685
174	Air Force * US * E7 to E9 * Other	0.767	0.731
175	Air Force * US * W1 to O6 * non-Hispanic White	0.649	0.753
176	Air Force * US * W1 to O6 * non-Hispanic Black	0.669	0.696
177	Air Force * US * W1 to O6 * Hispanic (any race)	0.660	0.734
178	Air Force * US * W1 to O6 * Native American	0.688	0.756
179	Air Force * US * W1 to O6 * Asian & Pacific Islander	0.705	0.776
180	Air Force * US * W1 to O6 * Other	0.688	0.758
181	Air Force * Overseas * E1 to E3 * non-Hispanic White	0.567	0.465
182	Air Force * Overseas * E1 to E3 * non-Hispanic Black	0.577	0.449
183	Air Force * Overseas * E1 to E3 * Hispanic (any race)	0.632	0.510
184	Air Force * Overseas * E1 to E3 * Native American	0.634	0.509
185	Air Force * Overseas * E1 to E3 * Asian & Pacific Islander	0.720	0.653
186	Air Force * Overseas * E1 to E3 * Other	0.634	0.444
187	Air Force * Overseas * E4 * non-Hispanic White	0.503	0.566
188	Air Force * Overseas * E4 * non-Hispanic Black	0.528	0.438
189	Air Force * Overseas * E4 * Hispanic (any race)	0.590	0.510
190	Air Force * Overseas * E4 * Native American	0.537	0.516
191	Air Force * Overseas * E4 * Asian & Pacific Islander	0.661	0.627
192	Air Force * Overseas * E4 * Other	0.537	0.550
193	Air Force * Overseas * E5 to E6 * non-Hispanic White	0.597	0.666
194	Air Force * Overseas * E5 to E6 * non-Hispanic Black	0.608	0.578
195	Air Force * Overseas * E5 to E6 * Hispanic (any race)	0.711	0.663
196	Air Force * Overseas * E5 to E6 * Native American	0.643	0.698

Table A-7. (continued)

Stratum Numbers	Description	Response Rate Design	Response Rate Actual
197	Air Force * Overseas * E5 to E6 * Asian & Pacific Islander	0.717	0.765
198	Air Force * Overseas * E5 to E6 * Other	0.643	0.765
199	Air Force * Overseas * E7 to E9 * non-Hispanic White	0.597	0.705
200	Air Force * Overseas * E7 to E9 * non-Hispanic Black	0.618	0.692
201	Air Force * Overseas * E7 to E9 * Hispanic (any race)	0.635	0.761
202	Air Force * Overseas * E7 to E9 * Native American	0.635	0.676
203	Air Force * Overseas * E7 to E9 * Asian & Pacific Islander	0.625	0.800
204	Air Force * Overseas * E7 to E9 * Other	0.635	0.667
205	Air Force * Overseas * W1 to O6 * non-Hispanic White	0.637	0.741
206	Air Force * Overseas * W1 to O6 * non-Hispanic Black	0.617	0.745
207	Air Force * Overseas * W1 to O6 * Hispanic (any race)	0.653	0.788
208	Air Force * Overseas * W1 to O6 * Native American	0.639	0.846
209	Air Force * Overseas * W1 to O6 * Asian & Pacific Islander	0.708	0.750
210	Air Force * Overseas * W1 to O6 * Other	0.639	0.700
211	Coast Guard * US + Overseas * E1 to E3 * non-Hispanic White	0.562	0.358
212	Coast Guard * US + Overseas * E1 to E3 * non-Hispanic Black	0.601	0.332
213	Coast Guard * US + Overseas * E1 to E3 * Hispanic (any race)	0.465	0.364
214	Coast Guard * US + Overseas * E1 to E3 * Native American + Other	0.405	0.373
215	Coast Guard * US + Overseas * E1 to E3 * Asian & Pacific Islander	0.586	0.353
216	Coast Guard * US + Overseas * E4 * non-Hispanic White	0.533	0.462
217	Coast Guard * US + Overseas * E4 * non-Hispanic Black	0.590	0.342
218	Coast Guard * US + Overseas * E4 * Hispanic (any race)	0.469	0.492
219	Coast Guard * US + Overseas * E4 * Native American + Other	0.356	0.439
220	Coast Guard * US + Overseas * E4 * Asian & Pacific Islander	0.571	0.444
221	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * non-Hispanic White	0.651	0.798
222	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * non-Hispanic Black	0.689	0.735
223	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * Hispanic (any race)	0.616	0.791
224	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * Native American + Other	0.497	0.742
225	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * Asian & Pacific Islander	0.647	0.777
226	Coast Guard * US + Overseas * W1 to O6 * non-Hispanic White	0.649	0.645
227	Coast Guard * US + Overseas * W1 to O6 * non-Hispanic Black	0.662	0.497
228	Coast Guard * US + Overseas * W1 to O6 * Hispanic (any race)	0.630	0.613
229	Coast Guard * US + Overseas * W1 to O6 * Native American + Other	0.556	0.642
230	Coast Guard * US + Overseas * W1 to O6 * Asian & Pacific Islander	0.714	0.597
231	AGR/TARS * US + Overseas * E1 to E3 + E4 * non-Hispanic White	0.618	0.616
232	AGR/TARS * US + Overseas * E1 to E3 + E4 * non-Hispanic Black	0.614	0.514
233	AGR/TARS * US + Overseas * E1 to E3 + E4 * Hispanic (any race)	0.653	0.626
234	AGR/TARS * US + Overseas * E1 to E3 + E4 * Native American	0.419	0.680
235	AGR/TARS * US + Overseas * E1 to E3 + E4 * Asian & Pacific Islander	0.630	0.723

Table A-7. (continued)

Stratum Numbers	Description	Response Rate Design	Actual
236	AGR/TARS * US + Overseas * E1 to E3 + E4 * Other	0.419	0.533
237	AGR/TARS * US + Overseas * E5 to E6 * non-Hispanic White	0.700	0.818
238	AGR/TARS * US + Overseas * E5 to E6 * non-Hispanic Black	0.695	0.669
239	AGR/TARS * US + Overseas * E5 to E6 * Hispanic (any race)	0.735	0.757
240	AGR/TARS * US + Overseas * E5 to E6 * Native American	0.501	0.770
241	AGR/TARS * US + Overseas * E5 to E6 * Asian & Pacific Islander	0.711	0.770
242	AGR/TARS * US + Overseas * E5 to E6 * Other	0.501	0.833
243	AGR/TARS * US + Overseas * E7 to E9 * non-Hispanic White	0.751	0.846
244	AGR/TARS * US + Overseas * E7 to E9 * non-Hispanic Black	0.747	0.748
245	AGR/TARS * US + Overseas * E7 to E9 * Hispanic (any race)	0.787	0.799
246	AGR/TARS * US + Overseas * E7 to E9 * Native American	0.553	0.841
247	AGR/TARS * US + Overseas * E7 to E9 * Asian & Pacific Islander	0.763	0.810
248	AGR/TARS * US + Overseas * E7 to E9 * Other	0.553	0.600
249	AGR/TARS * US + Overseas * W1 to O6 * non-Hispanic White	0.755	0.385
250	AGR/TARS * US + Overseas * W1 to O6 * non-Hispanic Black	0.751	0.304
251	AGR/TARS * US + Overseas * W1 to O6 * Hispanic (any race)	0.790	0.404
252	AGR/TARS * US + Overseas * W1 to O6 * Native American	0.556	0.400
253	AGR/TARS * US + Overseas * W1 to O6 * Asian & Pacific Islander	0.767	0.625
254	AGR/TARS * US + Overseas * W1 to O6 * Other	0.556	0.600
255	Unknown	0.580	0.605

Table A-8.
EOS Original and Redesigned Sample Allocation

Stratum Number	Description	Original Design		Redesign	
		Allocation	Sample Size	Allocation	Sample Size
1	Army * US * E1 to E3 * non-Hispanic White	185	511	184	532
2	Army * US * E1 to E3 * non-Hispanic Black	323	751	301	1071
3	Army * US * E1 to E3 * Hispanic (any race)	264	547	358	684
4	Army * US * E1 to E3 * Native American	190	433	176	451
5	Army * US * E1 to E3 * Asian & Pacific Islander	193	324	181	425
6	Army * US * E1 to E3 * Other	110	251	104	254
7	Army * US * E4 * non-Hispanic White	241	683	259	543
8	Army * US * E4 * non-Hispanic Black	392	899	387	1183
9	Army * US * E4 * Hispanic (any race)	218	439	232	492
10	Army * US * E4 * Native American	161	406	163	376
11	Army * US * E4 * Asian & Pacific Islander	202	342	209	395
12	Army * US * E4 * Other	176	443	177	419
13	Army * US * E5 to E6 * non-Hispanic White	165	352	182	314
14	Army * US * E5 to E6 * non-Hispanic Black	659	1225	719	1455
15	Army * US * E5 to E6 * Hispanic (any race)	197	308	209	354
16	Army * US * E5 to E6 * Native American	176	336	180	314
17	Army * US * E5 to E6 * Asian & Pacific Islander	169	252	175	294
18	Army * US * E5 to E6 * Other	285	544	288	515
19	Army * US * E7 to E9 * non-Hispanic White	200	347	208	287
20	Army * US * E7 to E9 * non-Hispanic Black	329	502	366	545
21	Army * US * E7 to E9 * Hispanic (any race)	149	222	149	216
22	Army * US * E7 to E9 * Native American	95	152	92	136
23	Army * US * E7 to E9 * Asian & Pacific Islander	83	121	88	116
24	Army * US * E7 to E9 * Other	119	192	118	189
25	Army * US * W1 to O6 * non-Hispanic White	510	893	538	718
26	Army * US * W1 to O6 * non-Hispanic Black	1172	1924	1212	1823
27	Army * US * W1 to O6 * Hispanic (any race)	851	1323	878	1213
28	Army * US * W1 to O6 * Native American	274	305	294	305
29	Army * US * W1 to O6 * Asian & Pacific Islander	918	1270	923	1232
30	Army * US * W1 to O6 * Other	69	119	74	102
31	Army * Overseas * E1 to E3 * non-Hispanic White	93	284	85	272
32	Army * Overseas * E1 to E3 * non-Hispanic Black	102	287	93	333
33	Army * Overseas * E1 to E3 * Hispanic (any race)	134	296	135	357
34	Army * Overseas * E1 to E3 * Native American	70	126	66	126
35	Army * Overseas * E1 to E3 * Asian & Pacific Islander	130	225	120	257
36	Army * Overseas * E1 to E3 * Other	19	52	16	64
37	Army * Overseas * E4 * non-Hispanic White	135	496	150	361
38	Army * Overseas * E4 * non-Hispanic Black	178	565	175	618
39	Army * Overseas * E4 * Hispanic (any race)	156	374	177	389
40	Army * Overseas * E4 * Native American	87	205	104	205
41	Army * Overseas * E4 * Asian & Pacific Islander	196	372	191	392
42	Army * Overseas * E4 * Other	49	176	57	137
43	Army * Overseas * E5 to E6 * non-Hispanic White	127	341	144	243
44	Army * Overseas * E5 to E6 * non-Hispanic Black	306	759	343	707
45	Army * Overseas * E5 to E6 * Hispanic (any race)	182	332	200	361
46	Army * Overseas * E5 to E6 * Native American	97	180	104	180
47	Army * Overseas * E5 to E6 * Asian & Pacific Islander	189	320	191	322
48	Army * Overseas * E5 to E6 * Other	84	217	97	173

Table A-8. (continued)

Stratum Number	Description	Original Design		Redesign	
		Allocation	Sample Size	Allocation	Sample Size
49	Army * Overseas * E7 to E9 * non-Hispanic White	57	130	65	92
50	Army * Overseas * E7 to E9 * non-Hispanic Black	121	249	140	215
51	Army * Overseas * E7 to E9 * Hispanic (any race)	88	161	110	138
52	Army * Overseas * E7 to E9 * Native American	40	60	44	60
53	Army * Overseas * E7 to E9 * Asian & Pacific Islander	74	129	81	112
54	Army * Overseas * E7 to E9 * Other	33	72	39	54
55	Army * Overseas * W1 to O6 * non-Hispanic White	146	279	156	217
56	Army * Overseas * W1 to O6 * non-Hispanic Black	243	467	266	410
57	Army * Overseas * W1 to O6 * Hispanic (any race)	236	394	258	339
58	Army * Overseas * W1 to O6 * Native American	86	85	94	85
59	Army * Overseas * W1 to O6 * Asian & Pacific Islander	249	361	254	345
60	Army * Overseas * W1 to O6 * Other	16	32	18	26
61	Navy * US * E1 to E3 * non-Hispanic White	247	605	245	631
62	Navy * US * E1 to E3 * non-Hispanic Black	341	733	307	1093
63	Navy * US * E1 to E3 * Hispanic (any race)	520	1099	502	1398
64	Navy * US * E1 to E3 * Native American	336	473	332	841
65	Navy * US * E1 to E3 * Asian & Pacific Islander	364	627	352	782
66	Navy * US * E1 to E3 * Other	14	20	9	30
67	Navy * US * E4 * non-Hispanic White	191	398	181	366
68	Navy * US * E4 * non-Hispanic Black	246	446	235	620
69	Navy * US * E4 * Hispanic (any race)	240	423	245	505
70	Navy * US * E4 * Native American	143	191	146	328
71	Navy * US * E4 * Asian & Pacific Islander	201	305	211	344
72	Navy * US * E4 * Other	6	8	5	13
73	Navy * US * E5 to E6 * non-Hispanic White	283	462	277	485
74	Navy * US * E5 to E6 * non-Hispanic Black	454	678	446	931
75	Navy * US * E5 to E6 * Hispanic (any race)	293	404	294	503
76	Navy * US * E5 to E6 * Native American	209	234	224	388
77	Navy * US * E5 to E6 * Asian & Pacific Islander	337	448	337	547
78	Navy * US * E5 to E6 * Other	45	50	37	66
79	Navy * US * E7 to E9 * non-Hispanic White	257	357	243	336
80	Navy * US * E7 to E9 * non-Hispanic Black	77	98	78	125
81	Navy * US * E7 to E9 * Hispanic (any race)	56	74	52	79
82	Navy * US * E7 to E9 * Native American	75	76	75	105
83	Navy * US * E7 to E9 * Asian & Pacific Islander	199	259	193	256
84	Navy * US * E7 to E9 * Other	21	21	19	25
85	Navy * US * W1 to O6 * non-Hispanic White	456	677	452	596
86	Navy * US * W1 to O6 * non-Hispanic Black	406	580	391	610
87	Navy * US * W1 to O6 * Hispanic (any race)	651	943	646	920
88	Navy * US * W1 to O6 * Native American	233	187	216	187
89	Navy * US * W1 to O6 * Asian & Pacific Islander	837	1094	822	1097
90	Navy * US * W1 to O6 * Other	14	15	13	16
91	Navy * Overseas * E1 to E3 * non-Hispanic White	86	189	75	194
92	Navy * Overseas * E1 to E3 * non-Hispanic Black	71	150	54	219
93	Navy * Overseas * E1 to E3 * Hispanic (any race)	173	330	175	393
94	Navy * Overseas * E1 to E3 * Native American	71	90	52	90
95	Navy * Overseas * E1 to E3 * Asian & Pacific Islander	96	149	88	177

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Table A-8. (continued)

Stratum Number	Description	Original Design		Redesign	
		Allocation	Sample Size	Allocation	Sample Size
96	Navy * Overseas * E1 to E3 * Other	2	3	2	8
97	Navy * Overseas * E4 * non-Hispanic White	71	147	67	133
98	Navy * Overseas * E4 * non-Hispanic Black	52	102	50	116
99	Navy * Overseas * E4 * Hispanic (any race)	118	206	124	241
100	Navy * Overseas * E4 * Native American	50	66	48	66
101	Navy * Overseas * E4 * Asian & Pacific Islander	91	135	94	135
102	Navy * Overseas * E4 * Other	2	3	2	3
103	Navy * Overseas * E5 to E6 * non-Hispanic White	129	215	125	191
104	Navy * Overseas * E5 to E6 * non-Hispanic Black	118	191	117	211
105	Navy * Overseas * E5 to E6 * Hispanic (any race)	178	248	186	294
106	Navy * Overseas * E5 to E6 * Native American	74	84	67	84
107	Navy * Overseas * E5 to E6 * Asian & Pacific Islander	266	352	265	369
108	Navy * Overseas * E5 to E6 * Other	10	13	10	13
109	Navy * Overseas * E7 to E9 * non-Hispanic White	47	70	46	62
110	Navy * Overseas * E7 to E9 * non-Hispanic Black	18	26	18	29
111	Navy * Overseas * E7 to E9 * Hispanic (any race)	24	34	28	34
112	Navy * Overseas * E7 to E9 * Native American	13	12	12	12
113	Navy * Overseas * E7 to E9 * Asian & Pacific Islander	107	146	112	136
114	Navy * Overseas * E7 to E9 * Other	5	6	5	6
115	Navy * Overseas * W1 to O6 * non-Hispanic White	110	155	110	130
116	Navy * Overseas * W1 to O6 * non-Hispanic Black	78	112	75	117
117	Navy * Overseas * W1 to O6 * Hispanic (any race)	137	188	137	187
118	Navy * Overseas * W1 to O6 * Native American	56	46	55	46
119	Navy * Overseas * W1 to O6 * Asian & Pacific Islander	210	258	206	262
120	Navy * Overseas * W1 to O6 * Other	4	4	4	5
121	Marine Corps * US + Overseas * E1 to E3 * non-Hispanic White	463	1059	445	1305
122	Marine Corps * US + Overseas * E1 to E3 * non-Hispanic Black	365	794	328	1323
123	Marine Corps * US + Overseas * E1 to E3 * Hispanic (any race)	714	1481	638	2071
124	Marine Corps * US + Overseas * E1 to E3 * Native American	568	804	535	804
125	Marine Corps * US + Overseas * E1 to E3 * Asian & Pacific Islander	446	818	426	1057
126	Marine Corps * US + Overseas * E1 to E3 * Other	59	105	47	137
127	Marine Corps * US + Overseas * E4 * non-Hispanic White	212	521	235	508
128	Marine Corps * US + Overseas * E4 * non-Hispanic Black	142	318	155	418
129	Marine Corps * US + Overseas * E4 * Hispanic (any race)	268	565	278	660
130	Marine Corps * US + Overseas * E4 * Native American	172	248	194	248
131	Marine Corps * US + Overseas * E4 * Asian & Pacific Islander	184	354	195	399
132	Marine Corps * US + Overseas * E4 * Other	25	50	27	47

Table A-8. (continued)

Stratum Number	Description	Original Design		Redesign	
		Allocation	Sample Size	Allocation	Sample Size
133	Marine Corps * US + Overseas * E5 to E6 * non-Hispanic White	265	483	267	464
134	Marine Corps * US + Overseas * E5 to E6 * non-Hispanic Black	340	593	360	831
135	Marine Corps * US + Overseas * E5 to E6 * Hispanic (any race)	276	431	274	516
136	Marine Corps * US + Overseas * E5 to E6 * Native American	169	231	180	231
137	Marine Corps * US + Overseas * E5 to E6 * Asian & Pacific Islander	222	356	228	416
138	Marine Corps * US + Overseas * E5 to E6 * Other	44	68	42	73
139	Marine Corps * US + Overseas * E7 to E9 * non-Hispanic White	126	197	123	189
140	Marine Corps * US + Overseas * E7 to E9 * non-Hispanic Black	147	218	170	266
141	Marine Corps * US + Overseas * E7 to E9 * Hispanic (any race)	110	167	115	179
142	Marine Corps * US + Overseas * E7 to E9 * Native American	56	66	64	66
143	Marine Corps * US + Overseas * E7 to E9 * Asian & Pacific Islander	77	123	85	127
144	Marine Corps * US + Overseas * E7 to E9 * Other	16	22	17	21
145	Marine Corps * US + Overseas * W1 to O6 * non-Hispanic White	385	611	385	501
146	Marine Corps * US + Overseas * W1 to O6 * non-Hispanic Black	385	618	385	590
147	Marine Corps * US + Overseas * W1 to O6 * Hispanic (any race)	385	616	385	560
148	Marine Corps * US + Overseas * W1 to O6 * Native American	131	107	128	107
149	Marine Corps * US + Overseas * W1 to O6 * Asian & Pacific Islander	230	267	233	267
150	Marine Corps * US + Overseas * W1 to O6 * Other	45	66	45	66
151	Air Force * US * E1 to E3 * non-Hispanic White	255	451	257	461
152	Air Force * US * E1 to E3 * non-Hispanic Black	178	288	175	394
153	Air Force * US * E1 to E3 * Hispanic (any race)	229	366	227	454
154	Air Force * US * E1 to E3 * Native American	132	197	130	256
155	Air Force * US * E1 to E3 * Asian & Pacific Islander	200	284	202	341
156	Air Force * US * E1 to E3 * Other	59	88	55	93
157	Air Force * US * E4 * non-Hispanic White	304	556	278	564
158	Air Force * US * E4 * non-Hispanic Black	170	277	169	369
159	Air Force * US * E4 * Hispanic (any race)	148	235	144	297
160	Air Force * US * E4 * Native American	97	157	97	203
161	Air Force * US * E4 * Asian & Pacific Islander	131	190	130	233
162	Air Force * US * E4 * Other	35	57	36	51
163	Air Force * US * E5 to E6 * non-Hispanic White	292	446	292	457
164	Air Force * US * E5 to E6 * non-Hispanic Black	348	492	364	627
165	Air Force * US * E5 to E6 * Hispanic (any race)	188	246	191	303
166	Air Force * US * E5 to E6 * Native American	212	287	215	365
167	Air Force * US * E5 to E6 * Asian & Pacific Islander	150	197	158	224
168	Air Force * US * E5 to E6 * Other	60	81	58	82

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Table A-8. (continued)

Stratum Number	Description	Original Design Allocation	Original Design Sample Size	Redesign Allocation	Redesign Sample Size
169	Air Force * US * E7 to E9 * non-Hispanic White	256	370	242	355
170	Air Force * US * E7 to E9 * non-Hispanic Black	144	193	152	229
171	Air Force * US * E7 to E9 * Hispanic (any race)	88	121	85	132
172	Air Force * US * E7 to E9 * Native American	187	244	186	277
173	Air Force * US * E7 to E9 * Asian & Pacific Islander	63	89	64	93
174	Air Force * US * E7 to E9 * Other	20	26	19	26
175	Air Force * US * W1 to O6 * non-Hispanic White	646	995	649	862
176	Air Force * US * W1 to O6 * non-Hispanic Black	686	1025	696	1000
177	Air Force * US * W1 to O6 * Hispanic (any race)	672	1018	690	940
178	Air Force * US * W1 to O6 * Native American	338	275	346	275
179	Air Force * US * W1 to O6 * Asian & Pacific Islander	773	1096	796	1026
180	Air Force * US * W1 to O6 * Other	90	132	93	123
181	Air Force * Overseas * E1 to E3 * non-Hispanic White	72	127	62	133
182	Air Force * Overseas * E1 to E3 * non-Hispanic Black	40	69	37	82
183	Air Force * Overseas * E1 to E3 * Hispanic (any race)	66	104	66	129
184	Air Force * Overseas * E1 to E3 * Native American	43	53	39	53
185	Air Force * Overseas * E1 to E3 * Asian & Pacific Islander	54	75	53	81
186	Air Force * Overseas * E1 to E3 * Other	6	9	5	11
187	Air Force * Overseas * E4 * non-Hispanic White	153	304	150	265
188	Air Force * Overseas * E4 * non-Hispanic Black	89	169	83	189
189	Air Force * Overseas * E4 * Hispanic (any race)	90	153	92	180
190	Air Force * Overseas * E4 * Native American	47	64	46	64
191	Air Force * Overseas * E4 * Asian & Pacific Islander	94	142	94	150
192	Air Force * Overseas * E4 * Other	11	20	11	20
193	Air Force * Overseas * E5 to E6 * non-Hispanic White	182	305	177	266
194	Air Force * Overseas * E5 to E6 * non-Hispanic Black	180	296	180	311
195	Air Force * Overseas * E5 to E6 * Hispanic (any race)	135	190	144	217
196	Air Force * Overseas * E5 to E6 * Native American	104	129	106	129
197	Air Force * Overseas * E5 to E6 * Asian & Pacific Islander	162	226	168	220
198	Air Force * Overseas * E5 to E6 * Other	22	34	23	30
199	Air Force * Overseas * E7 to E9 * non-Hispanic White	73	122	73	104
200	Air Force * Overseas * E7 to E9 * non-Hispanic Black	56	91	59	85
201	Air Force * Overseas * E7 to E9 * Hispanic (any race)	44	71	52	68
202	Air Force * Overseas * E7 to E9 * Native American	61	71	61	71
203	Air Force * Overseas * E7 to E9 * Asian & Pacific Islander	53	85	58	72
204	Air Force * Overseas * E7 to E9 * Other	6	9	6	9
205	Air Force * Overseas * W1 to O6 * non-Hispanic White	106	166	105	142

Table A-8. (continued)

Stratum Number	Description	Original Design Allocation	Original Design Sample Size	Redesign Allocation	Redesign Sample Size
206	Air Force * Overseas * W1 to O6 * non-Hispanic Black	97	157	104	140
207	Air Force * Overseas * W1 to O6 * Hispanic (any race)	120	184	128	162
208	Air Force * Overseas * W1 to O6 * Native American	35	26	38	26
209	Air Force * Overseas * W1 to O6 * Asian & Pacific Islander	134	184	136	181
210	Air Force * Overseas * W1 to O6 * Other	13	20	13	19
211	Coast Guard * US + Overseas * E1 to E3 * non-Hispanic White	190	338	178	497
212	Coast Guard * US + Overseas * E1 to E3 * non-Hispanic Black	188	313	186	403
213	Coast Guard * US + Overseas * E1 to E3 * Hispanic (any race)	217	467	206	566
214	Coast Guard * US + Overseas * E1 to E3 * Native American + Other	88	217	83	223
215	Coast Guard * US + Overseas * E1 to E3 * Asian & Pacific Islander	150	215	138	215
216	Coast Guard * US + Overseas * E4 * non-Hispanic White	195	366	209	452
217	Coast Guard * US + Overseas * E4 * non-Hispanic Black	198	336	200	427
218	Coast Guard * US + Overseas * E4 * Hispanic (any race)	168	360	182	370
219	Coast Guard * US + Overseas * E4 * Native American + Other	94	264	101	230
220	Coast Guard * US + Overseas * E4 * Asian & Pacific Islander	104	151	107	151
221	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * non-Hispanic White	385	591	385	482
222	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * non-Hispanic Black	385	559	385	524
223	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * Hispanic (any race)	385	625	385	487
224	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * Native American + Other	171	226	165	222
225	Coast Guard * US + Overseas * E5 to E6 + E7 to E9 * Asian & Pacific Islander	225	221	235	221
226	Coast Guard * US + Overseas * W1 to O6 * non-Hispanic White	151	233	151	234
227	Coast Guard * US + Overseas * W1 to O6 * non-Hispanic Black	151	215	151	215
228	Coast Guard * US + Overseas * W1 to O6 * Hispanic (any race)	151	206	151	206
229	Coast Guard * US + Overseas * W1 to O6 * Native American + Other	17	31	17	26
230	Coast Guard * US + Overseas * W1 to O6 * Asian & Pacific Islander	143	188	151	188
231	AGR/TARS * US + Overseas * E1 to E3 + E4 * non-Hispanic White	32	52	33	54

Table A-8. (continued)

Stratum Number	Description	Original Design Allocation	Original Design Sample Size	Redesign Allocation	Redesign Sample Size
232	AGR/TARS * US + Overseas * E1 to E3 + E4 * non-Hispanic Black	28	46	27	53
233	AGR/TARS * US + Overseas * E1 to E3 + E4 * Hispanic (any race)	37	57	37	59
234	AGR/TARS * US + Overseas * E1 to E3 + E4 * Native American	13	30	14	21
235	AGR/TARS * US + Overseas * E1 to E3 + E4 * Asian & Pacific Islander	25	40	26	36
236	AGR/TARS * US + Overseas * E1 to E3 + E4 * Other	2	5	2	4
237	AGR/TARS * US + Overseas * E5 to E6 * non-Hispanic White	248	354	273	334
238	AGR/TARS * US + Overseas * E5 to E6 * non-Hispanic Black	204	294	206	308
239	AGR/TARS * US + Overseas * E5 to E6 * Hispanic (any race)	169	230	172	227
240	AGR/TARS * US + Overseas * E5 to E6 * Native American	103	206	104	135
241	AGR/TARS * US + Overseas * E5 to E6 * Asian & Pacific Islander	159	224	160	208
242	AGR/TARS * US + Overseas * E5 to E6 * Other	15	30	18	22
243	AGR/TARS * US + Overseas * E7 to E9 * non-Hispanic White	255	340	268	317
244	AGR/TARS * US + Overseas * E7 to E9 * non-Hispanic Black	95	127	97	130
245	AGR/TARS * US + Overseas * E7 to E9 * Hispanic (any race)	107	136	106	133
246	AGR/TARS * US + Overseas * E7 to E9 * Native American	101	183	102	121
247	AGR/TARS * US + Overseas * E7 to E9 * Asian & Pacific Islander	96	126	96	119
248	AGR/TARS * US + Overseas * E7 to E9 * Other	10	18	10	17
249	AGR/TARS * US + Overseas * W1 to O6 * non-Hispanic White	172	228	127	330
250	AGR/TARS * US + Overseas * W1 to O6 * non-Hispanic Black	155	206	105	345
251	AGR/TARS * US + Overseas * W1 to O6 * Hispanic (any race)	224	284	166	369
252	AGR/TARS * US + Overseas * W1 to O6 * Native American	86	69	71	69
253	AGR/TARS * US + Overseas * W1 to O6 * Asian & Pacific Islander	192	231	174	231
254	AGR/TARS * US + Overseas * W1 to O6 * Other	3	5	3	5
255	Unknown	271	463	272	502

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Appendix B

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