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Standard Guide for Contractor Self Assessment for U.S. Government Property Management Systems[1]

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INTRODUCTION

The purpose of this standard is to provide guidance for a Contractor Self Assessment (CSA) program that addresses the requirement of Federal Acquisition Regulation (FAR) 52.245-1 (Government Property) that contractors perform periodic reviews, surveillances, self assessments or audits. This guide is intended to assist contractors in developing a CSA program that provides reasonable assurance of the effectiveness of the contractor's government property management system to internal and external stakeholders. Use of this guide should enable contractors to objectively evaluate Government property management system risks, discover deficiencies, identify the root causes and implement corrective actions.

1. Scope

1.1 This guide is intended to be used by entities engaged in contracts with the Government of the United States of America.

1.2 This guide applies to the current version of the FAR Government Property clause 52.245-1 dated April 2012. Entities with earlier or subsequently dated requirements/contracts should address any contractual difference when applying this guide.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E2135 Terminology for Property and Asset Management

E2279 Practice for Establishing the Guiding Principles of Property Management

E2452 Practice for Equipment Management Process Maturity (EMPM) Model

E2234 Practice for Sampling a Stream of Product by Attributes Indexed by AQL

E2811 Practice for Management of Low Risk Property (LRP)

2.2 *Federal Acquisition Regulation (FAR):*[3]

52.245–1 Government Property (current version)

2.3 *Other Standards:*[4]

GAGAS Generally Accepted Government Auditing Standards (current version)

3. Terminology

3.1 *Definitions:* For definitions of additional terms, refer to Terminology E2135.

3.1.1 *classification of defects, n*—the enumeration of possible defects of the assessment sample classified according to their seriousness, that is, critical, major or minor defect.

3.1.2 *confidence level, n*—a statistical measure of the amount of reliability that a random statistical sample represents the entire population.

3.1.3 *contractor, n*—an entity that has entered into a contractual relationship with one or more agencies of the Government of the United States of America to provide goods or services.

3.1.4 *contractor self assessment (CSA), n*—An auditing, assessment, review or surveillance program implemented by a

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from U.S. General Services Administration (GSA), One Constitution Square, 1275 First Street, NE, Washington, DC 20417, http://acquisition.gov/far/index.html.

[4] Available from U.S. Government Accountability Office, 441 G Street, NW, Washington, DC 20548, http://www.gao.gov/yellowbook.

contractor to identify, evaluate and take corrective action on compliance and operational risks resulting from business practices for government property management.

3.1.5 *critical defect, n*—a significant and systemic defect that would have a material effect on contract performance or cause concern for the reliability of the information provided by the property management system.

3.1.6 *defect, n*—a condition in which a functional segment, a sample item or sample item element of a property control system contains one or more deficiencies. **E2135**

3.1.7 *federal acquisition regulation (FAR), n*—The primary regulation for use by Federal Executive Agencies in their acquisition of supplies and services with appropriated funds.

3.1.8 *government property management system, n*—the plans, processes, procedures, information systems, human and physical resources used to manage government property accountable to a contract.

3.1.9 *judgment sampling, v*—is the performance of nonrandom, non-probability sampling technique where the auditor selects items to be sampled based upon their knowledge and professional judgment.

3.1.10 *major defect, n*—a significant, but not systemic defect that may affect the control of government property, possibly increasing the risk to the Government.

3.1.11 *methodology, n*—a set or system of methods, principles and rules for regulating a given discipline.

3.1.12 *minor defect, n*—a defect that is administrative in nature, non-systemic and would have no material outcome for the control of Government property.

3.1.13 *population, n*—for purposes of auditing a contract property management system using statistical sampling a population may consist of a collection of assets, inventory, records, documents, locations, actions or transactions that have common characteristics for the process undergoing audit

3.1.14 *purposive sampling, v*—the act of selecting specific items for audit or review purposes based on prior knowledge of a situation, usually to identify causal factors or progress in rectification of a prior problem.

3.1.15 *sample, n*—a subset of a complete population that exhibits the same characteristics as the complete population and which is used in a statistical sample to estimate the overall population's characteristics.

3.1.16 *statistical sampling, v*—the use of random statistical tests to estimate the characteristics of a complete population, with a minimum of bias.

4. Significance and Use

4.1 The intent of this guide is to provide a foundation for the minimum effective internal assessment of a contractor's Government property management system. A contractor may incorporate all or part of this guide in accordance with its established procedures and operating environment. Self assessment should be used to identify deficiencies, related increases to risk, and to serve as a method for obtaining correction to those deficiencies, independent of, and often in advance of, a Government audit, review or assessment. It should also be used to assist in determining the effective assignment of property management resources; and to serve as a method for promoting continuous improvement in property management practices. Self assessments, in and of themselves may not be sufficiently independent to address external or Government review, assessment, or audit requirements.

4.2 To the extent possible, a CSA program should provide a level of objectivity similar to that of a property management system analysis performed by a Government or other external auditor. Individuals who perform assessments should not be the same individuals who perform the functions being tested when sufficient resources are available. The contractor's official written procedures should identify functional positions responsible for performing the self assessment and address management controls used to maintain independence and prevent conflicts of interest whenever individuals who perform property functions also participate in CSA activities.

4.3 The results of the CSA alone do not determine adequacy or inadequacy of the contractor's Government property management system but should identify the level of risk presented by the contractor's business practices. The results of the CSA should be made available to external auditors or reviewers for potential inclusion in their audits or reports in accordance with contractual requirements and the contractor's procedures.

5. Resources

5.1 The performance of a CSA, at the prime contractor or subcontractor level, requires the budgeting for and application of adequate resources. The contractor should determine the individuals who will perform and manage the CSA process, considering the issue of audit independence requirements and the contractor's asset management procedures. The contractor should also determine any additional resource requirements, including budgeting for travel and per diem, access to information systems, and any unique expertise needed, for example, statistical applications. Those who will be held accountable for the results should manage and control the resources in accordance with Practice E2279.

6. Usage

6.1 *Procedures:*

6.1.1 Contractors should clearly describe and define their self-assessment program in their procedures. The procedures should address the following concepts:

6.1.2 The audit, assessment, review or surveillance methodology to be used should be defined. The methodologies may include:

6.1.2.1 Application of a Government agency's established property management system analysis criteria.

6.1.2.2 Application of Practice E2452.

6.1.2.3 Application of industry-leading practices and customary commercial practices as used by the contractor.

6.1.2.4 Application of any other assessment methodology, for example, Balanced Scorecard[5] or Maturity Model, for example, Capability Maturity Model Integration (CMMI).[6]

6.1.3 The processes and outcomes subject to review should be clearly defined. These may include the requirements enumerated in FAR 52.245-1, contractor-specific processes as applicable or other additional contractual requirements.

6.1.4 The parties responsible for performing the assessment should be identified. To the extent possible, contractors should have the assessment reviewed by an impartial party in order to ensure objectivity of the results.

6.1.5 The organizational scope of the assessment should be defined, that is, the business units, sites or other sub-divisions of the entity to which the assessment applies. Multiple assessments may be performed when processes or procedures are significantly different among business units or sites to constitute a separate property management system or when a higher level of risk has been identified.

6.1.6 The contractor's procedures should define a "defect" for the purposes of the assessment and the differences between minor, major and critical defects in the context of the contractor's business environment. Corrective action requirements for defects should be established.

6.1.7 The procedures should include a process and a schedule for reporting CSA results to management, Government property administrators, and other stakeholders.

6.2 *Risk Assessment at the Process and Entity Level:*

6.2.1 Contractors should apply a risk assessment in planning the CSA. Risk assessments should address potential future risks but may also include past incidents, that is, past performance areas.[7] Criteria for determining risk may include but are not limited to:

6.2.1.1 The property management system's procedures,

6.2.1.2 The property management system's impact on schedule or performance,

6.2.1.3 Internal controls,

6.2.1.4 Contractor experience.

6.2.2 Risk assessments may be grouped into one of three categories:

6.2.2.1 Low risk entities are those with mature procedures that undergo continuous improvement, there are no impacts on schedule or performance; internal controls produce positive high value results; contractor's management and employees are stable; no significant issues in previous CSAs or other internal or external audits.

6.2.2.2 Medium risk entities are those with changing procedures or system that needs validation; there has been impact to schedule or performance caused by property issues; contractor's management and employees have recently changed; a critical defect revealed through past CSA or other internal or external audits.

6.2.2.3 High risk entities are new contractors with no experience in asset management; contractors with new untested or undocumented procedures; contractors with numerous critical defects revealed through past CSAs or other internal or external audits.

6.2.3 The frequency of a CSA performance, either a complete CSA or the individual processes, should be based upon the risk assessment, that is, the higher the risk rating the more frequent the CSA performance, the lower the risk rating the less frequent the CSA performance.

6.2.3.1 Low risk entities should perform a CSA no less than once every three years.

6.2.3.2 Medium risk entities should perform a CSA no less than once every two years.

6.2.3.3 High risk entities should perform a CSA annually.

6.3 *Process Tests:*

6.3.1 Contractors should establish process tests that provide sufficient evidence to credibly evaluate the effectiveness and risk level of the property management system in terms of business system process segments and as a whole.

6.3.2 Process tests may evaluate compliance with specific contract terms and conditions or other business processes as required by the contractor's operating environment. Process tests should also evaluate the effectiveness of and level of adherence to the contractor's property management procedures.

6.3.3 Process tests may involve quantitative tests such as statistical sampling, metrics derived from Statistical Process Controls (SPC), or non-statistical tests such as judgment or purposive sampling. When applying statistical sampling the acceptance and rejection goals, acceptable ranges or other criteria for measuring risk levels should be established for each process test.

6.3.4 Contractors must include support documentation and evidence for each process test with the results of the self-assessment to demonstrate the integrity of the process.

6.4 *Populations for a Contractor Self Assessment:*

6.4.1 The proper definition and selection of a population or populations when using statistical sampling for testing the FAR property management processes is a critical component of performing a CSA. In statistics, sample data from a population are observed in order to make estimate attributes of the population from which they were selected.

6.4.2 Populations should be defined and selected based upon common characteristics of the process being reviewed (FAR 52.245-1(f)(1)(i) through (x)) and the criteria embedded within the process or outcome. These outcomes include Acquisition, Receiving, Records, Physical Inventory, Subcontractor Control, Reports, Relief of Stewardship Responsibility and Liability, Utilization, Maintenance and Property Closeout. Care should be taken to ensure that populations address not only the stated process or outcome but any sub-processes subsumed under or within the listed processes.

6.4.3 Populations may be based upon transactions or attributes.

6.4.3.1 A population based upon transactions is one where the population is driven by actions that have occurred over a set period of time, for example, all receiving of Government

[5] Kaplan, R. S. and Norton, D. P., *Balanced Scorecard*, Harvard Business Review Press, Cambridge, MA, 1996.

[6] Bush, M., and Dunaway, D., *CMMI Assessments: Motivating Positive Change*, Addison-Wesley Professional, Boston, MA, 2005.

[7] Defense Acquisition University, *"Risk Management Guide for DoD Acquisition,"* Sixth Edition, Version 1.0, August 2006, http://www.dau.mil/publications/publicationsDocs/RMG%206Ed%20Aug06.pdf.

property that has occurred over the past year, the maintenance of property over the past year – or whatever the timeframe defined within the CSA procedures.

6.4.3.2 Generally a transactional population should consist of and encompass transactions going back one year (365 days) or to the last CSA, whichever is less.

6.4.4 A population based upon attributes is one where the population does not lend itself to testing transactions but rather other characteristics, for example, storage locations, physical use locations, records of property, etc. These populations involve the testing of criteria that are not driven by acts or actions over a period of time. For example, under the process of storage the CSA is not concerned with the property moving into and out of a storage facility but rather the locations where all Government property is stored – so there are no transactions involved. In regard to the process of records, the population consists of records of all assets regardless of the actions performed on that record.

6.4.4.1 Processes may have more than one population:

(1) The process of Acquisition under FAR 52.245-1(f)(1) applies to the acquisition of both Government Furnished Property (GFP) and Contractor Acquired Property (CAP). The criteria testing the acquisition of GFP and CAP may be different; therefore the populations for these two items may be different.

(2) Populations may be segregated within a process by classification of Government property, that is, Material, Special Test Equipment, Special Tooling, Equipment or other classifications as required or allowed by other Government agencies.

(3) Populations may be segregated by the sensitivity of the Government property, for example, precious metals, nuclear materials, arms, ammunition and explosives, Communications Security Equipment (COMSEC), etc.

(4) Populations may be stratified either by dollar value or the criticality of items using a "A, B, C" type methodology or based on the criteria in Practice E2811.

6.4.5 Populations may be used to test multiple processes when the populations lend themselves to this use. For example:

6.4.5.1 The population used for testing the process of Records (FAR 52.245-1(f)(1)(iii)), segregated by property classification – in this case Equipment, Special Test Equipment and Special Tooling, may be used to test the process of Utilization (FAR 52.245-1(f)(1)(viii)).

6.4.5.2 The population used for testing Receiving would be inappropriate for testing the process of Consumption, as the process of Consumption is only applicable to the property classification of material which is consumable, while the population of Receiving deals with all classes of Government property, Material being one class of property, but Government property also includes Special Test Equipment, Special Tooling, and Equipment which are non-consumable items.

6.5 *Sampling:*

6.5.1 There are multiple forms of sampling that may be used in performing a contractor self assessment. These include but are not limited to statistical sampling, judgment and purposive sampling. Statistical sampling involves the use of random statistical tests to estimate the characteristics of a complete population with a minimum of bias. Judgment sampling is the performance of nonrandom, non-probability sampling technique where the auditor selects items to be sampled based upon their knowledge and professional judgment. Sample items are selected from a population where the items may not lend themselves to random statistical sampling. Where a statistical sample can be defended against bias, a judgment sample may not carry the same defense against bias. Purposive sampling is the act of selecting specific items for audit or review purposes based on prior knowledge of a situation, usually to identify causal factors or progress in rectification of a prior problem. In contrast with statistical sampling, purposive sampling is inherently biased.

6.5.2 Contractors must define the statistical sampling plan to be used. The contractor must determine the appropriate sample size needed to conclude that the proportion of defects discovered in a random sample properly represents the proportion of defects in the entire population. To do so, the sampling plan must clearly define the population to be tested as well as the acceptable sampling error, population proportion, and the desired confidence level.

6.5.3 The Defense Contract Management Agency (DCMA) of the United States Department of Defense uses established double sampling plans based on 90 %, 95 % and 97 % confidence levels. Practice E2234 also provides a variety of other statistical sampling plans. The Acceptable Quality Level (AQL) 6.5 end-confidence levels of Practice E2234 produces results comparable to the DCMA 90 % confidence level (90 % confidence of rejecting lots having 10 % or more defectives).

6.5.4 The confidence level or AQL used for sampling should be determined by the contractor's or the Government's acceptance of process risk, contract terms and conditions, and proposed or operational performance metrics. The DCMA Standard Operating Procedure on CSA indicates that 90 % confidence level or AQL 6.5 is suitable for transaction testing of most property management processes.[8] Processes requiring a high degree of accuracy, such as those involving sensitive property, may be suited to the use of a higher confidence level or lower AQL.

6.5.5 Contractors should base the decision as to whether to use a single or double sampling plan for a given process test given the tradeoff between the administrative difficulty and the average sample sizes of the plans. A single sampling plan will typically involve larger sample sizes and avoid the need to select a second sample in the event of a small number of defects, but may lead to the rejection of that sample as defective with fewer defects. Single sampling plans may be best suited for process tests that involve a relatively high degree of manual effort, such as floor to record sampling of assets. A double sampling plan will typically involve smaller sample sizes at the outset, but will require the selection and review of a second sample if a small number of defects are identified in the first sample. Double sampling plans may be best suited for process tests that involve a relatively low level of manual effort, such as document reviews or data reviews

[8] United States Department of Defense, Defense Contract Management Agency, "Instruction – Contract Property Management," DCMA-INST 124, Available online: http://www.dcma.mil/policy/124/DCMA-INST-124.pdf, February 2013.

conducted from a computer workstation. Given the smaller sampling sizes, double sampling plans may also be ideal for process tests where the contractor has a high degree of confidence that relatively few defects will be encountered after considering past experience and previous self-assessment data. In any event, contractors are encouraged to select the sampling plan that best provides an objective measure of the process while minimizing the cost and administrative burden of conducting the process test.

6.5.6 Samples should be randomly generated using automated random sampling tools. The same sample populations may be used for multiple process tests if those populations provide the necessary data required to conduct each test. Sample sizes can be determined by using the tables in the appendices of this guide for either single or double sampling.

6.6 *Process Tests:*

6.6.1 Contractors should establish process tests that provide sufficient evidence to credibly evaluate the effectiveness and risk level of the property management system in terms of process segments and as a whole. Process tests may involve quantitative tests such as metrics based on statistical sampling, or qualitative tests such as judgment or purposive sampling. Goals, acceptable ranges, or other criteria for measuring risk levels should be established for each process test. Regardless of the testing methods used, contractors should include support documentation and evidence with the results of the self-assessment to demonstrate the integrity of the process.

6.6.2 Contractors subject to the requirements of FAR 52.245-1 should test the processes in this section as applicable to ensure compliance with the basic requirements of this clause. Contractors may choose to test other internal business requirements or contract terms and conditions, and proposed or operational performance metrics.

6.6.2.1 *Acquisition*—The process test(s) should ensure that contractor-acquired property is required by the contract (per the statement of work or other contractual authorization), properly charged to the contract, and authorized by the contract.

6.6.2.2 *Receiving*—The process test(s) should ensure that receipts of Government property are promptly and accurately recorded in the Government property management system, and managed appropriately when discrepancies incident to shipment occur. The process of Receiving has embedded in it the sub-process of Identification. Process test(s) for identification should ensure that Government property is properly physically identified as government property. Identification may be tested either as part of the receiving process for new items or it may be tested under the process of records to ensure that existing items of Government property in the contractor's possession for extended periods of time, retain their physical identification.

6.6.2.3 *Records*—The process test(s) should ensure that records of Government property are created and maintained accurately and in accordance with contract requirements. Particular attention should be given to tests of item existence (do the items on record actually exist in the form and quantity recorded) and record completeness (are all items that are required to be recorded actually recorded.)

6.6.2.4 *Physical Inventory*—The process test(s) should ensure that physical inventories are performed and recorded and that results are disclosed to internal and external stakeholders.

6.6.2.5 *Subcontractor Control*—The process test(s) should ensure that furnished property is clearly identified in the subcontract and that contract terms and conditions are appropriately flowed down to subcontractors and that contractors are performing periodic reviews to determine the adequacy and risk of the subcontractor's property management system.

6.6.2.6 *Reports*—The process test(s) should ensure that reports of Government property are created, are accurate, and are provided to stakeholders according to contract requirements.

6.6.2.7 *Relief of Stewardship Responsibility and Liability*—The process test(s) should ensure that property loss is reported as required by the contract and that disposition of excess and surplus Government property by the contractor is authorized, performed in a timely manner and promptly recorded.

6.6.2.8 *Utilization*—The process test(s) should ensure that Government property is used only as authorized under the contract, properly consumed in the performance of the contract, properly moved and stored, and promptly disclosed to the Government when property is excess to contract performance. The process of utilization has embedded in it four distinct sub-processes: Utilization, Consumption, Storage and Movement of Government property. All four sub-processes have different populations. As such, contractors should carefully define and frame the appropriate population to properly reflect the specific actions associated with each sub-process to ensure the results of samples are a reasonably accurate representation of the entire population.

6.6.2.9 *Maintenance*—The process test(s) should ensure that the contractor is performing normal and routine preventative maintenance and repair on Government property and notifying the Government of the need to perform capital-type rehabilitation (based on the contractor's disclosed practices.)

6.6.2.10 *Contract Closeout*—The process test(s) should ensure that the contractor is reporting, investigating and closing all loss cases, physically inventorying all property (as required) and disposing of excess and surplus property per Government instructions prior to contract closeout.

6.7 *Evaluation of Samples and Sample Items from a CSA:*

6.7.1 Contractors should analyze defects from both a quantitative and qualitative perspective. Contractors should analyze the sample, sample items and sample item elements for the processes being assessed.

6.7.2 *Quantitative Analysis*—The statistical sampling tables contained in this document and the AQL 6.5 tables provide quantitative acceptance and rejection rates. These quantitative acceptance and rejection rates provide a framework to accept a sample, that is, determine a process is adequate, or reject a sample, that is, determine a process is inadequate.

6.7.3 *Qualitative Analysis*—A qualitative assessment should be used in concert with a quantitative analysis, that is, it is not just that the number of defects meets or exceeds the rejection rate in the tables but that these defects are also significant or have adverse material effects on the process. For example, under the DCMA Statistical Sampling tables with a population

of 500 and a sample size of 34, a review of records of Government material may yield quantitative results of 4 or 6 or even 8 defects. Quantitatively this number of defects would lead to a rejection of the sample and the process being deemed inadequate. A Qualitative review of these same 4 or 6 or 8 defects determines that these are low value common hardware with a cumulative acquisition cost of $2.48 cents out of a total population value of $500 000. As such, there is no significance or materiality to find this process inadequate.

6.7.4 The CSA program should recognize the concept of significance, defined in GAGAS as the relative importance of a matter within the context in which it is being considered, including quantitative and qualitative factors. In the context of a Government property management system these factors include the magnitude of a defect in relation to the overall system, the nature and effect of a defect, the relevance of a defect, the needs and interests of internal and external stakeholders, and the impact of the defect on overall contract performance. Significant risks or issues are generally those that would have a material impact on contract performance or cause concern for the reliability of the information provided by the system. Immediate attention would be required by the contractor to preclude the withdrawal of the Government's approval of the contractor's property management system. Contractors should work with their Government counterparts to determine and agree upon significance as it pertains to the specific contract requirements and business operations subject to the audit, assessment, surveillance or review.

6.8 *Corrective Actions and Plans:*

6.8.1 Contractors should take corrective action to resolve issues and mitigate risks as they become known in the course of the CSA. The cost and administrative burden of corrective actions should be commensurate with the significance of the impact or risk they present to the Government and the contractor's operation.

6.8.2 Significant risks or critical or major defects identified through the CSA process should be addressed through a formal written corrective action plan. This plan should identify the steps to be taken to identify and analyze the root cause, mitigate the risk, or correct the defect, the resources required, and the specific timeline for implementation. The corrective action plan should be presented to internal and external stakeholders as part of the CSA reporting process and may be subject to approval and final acceptance by those stakeholders.

6.8.3 Minor risks or defects identified through the CSA process should be corrected immediately with any necessary record or control corrections by the lowest effective responsible level of contractor personnel.

7. Keywords

7.1 assessment; asset; audit; contractor self assessment; government property; risk management; sampling

APPENDIX

(Nonmandatory Information)

X1. STATISTICAL SAMPLING PLANS

TABLE X1.1 Practice E2234 Single Sampling Plan–AQL 6.5 %

Lot Size	Single Sample Size	Accept if Defects are Equal to or Less Than	Reject if Defects are Equal to or Exceed
2 to 3	All	0	1
4 to 15	3	0	1
16 to 50	8	1	2
51 to 90	13	2	3
91 to 150	20	3	4
151 to 280	32	5	6
281 to 500	50	7	8
501 to 1200	80	10	11
1201 to 3200	125	14	15
3201 and up	200	21	22

TABLE X1.2 Practice E2234 Double Sampling Plan–AQL 6.5 %

Lot Size	Sample Size 1	Accept if Defects in Sample 1 are Equal to or Less Than	Reject if Defects in Sample 1 are Equal to or Exceed	Continue with Sample 2 if Defects in Sample 1 are	Sample Size 2	Accept if Sum of Defects in Samples 1 and 2 are Equal to or Less Than	Reject if Defects in Samples 1 and 2 are Equal to or Exceed
2 to 3	All	0	1				
4 to 15	3	0	1				
16 to 50	5	0	2	1	5	1	2
51 to 90	8	0	3	1 to 2	8	3	4
91 to 150	13	1	4	2 to 3	13	4	5
151 to 280	20	2	5	3 to 4	20	6	7
281 to 500	32	3	7	4 to 6	32	8	9
501 to 1200	50	5	9	6 to 8	50	12	13
1201 to 3200	80	7	11	8 to 10	80	18	19
3201 and up	125	11	16	12 to 15	125	26	27

TABLE X1.3 United States Department of Defense 97 % Confidence Double Sampling Plan

Lot Range	Sample Size 1	Accept if Defects in Sample 1 are Equal to or Less Than	Reject if Defects in Sample 1 are Equal to or Exceed	Continue with Sample 2 if Defects in Sample 1 are	Sample Size 2	Accept if Sum of Defects in Samples 1 and 2 are Equal to or Less Than	Reject if Defects in Samples 1 and 2 are Equal to or Exceed
1 to 25	All	0	1				
26 to 50	25	0	1				
51 to 90	28	0	2	1	28	1	2
91 to 150	33	0	3	1 or 2	33	2	3
151 to 400	41	0	4	1, 2 or 3	41	3	4
401 to 10 000	43	0	4	1, 2 or 3	43	3	4
10 001 to 35 000	50	0	5	1, 2, 3 or 4	50	4	5
35 001 to 100 000	56	0	6	1, 2, 3, 4 or 5	56	5	6
100 001 and up	63	0	7	1, 2, 3, 4, 5 or 6	63	6	7

TABLE X1.4 United States Department of Defense 95 % Confidence Double Sampling Plan

Lot Range	Sample Size 1	Accept if Defects in Sample 1 are Equal to or Less Than	Reject if Defects in Sample 1 are Equal to or Exceed	Continue with Sample 2 if Defects in Sample 1 are	Sample Size 2	Accept if Sum of Defects in Samples 1 and 2 are Equal to or Less Than	Reject if Defects in Samples 1 and 2 are Equal to or Exceed
1 to 22	All	0	1				
23 to 50	22	0	1				
51 to 90	25	0	2	1	25	1	2
91 to 150	30	0	3	1 or 2	30	2	3
151 to 400	37	0	4	1, 2 or 3	37	3	4
401 to 10 000	39	0	4	1, 2 or 3	39	3	4
10 001 to 35 000	45	0	5	1, 2, 3 or 4	45	4	5
35 001 to 100 000	52	0	6	1, 2, 3, 4 or 5	52	5	6
100 001 and up	58	0	7	1, 2, 3, 4, 5 or 6	58	6	7

TABLE X1.5 United States Department of Defense 90 % Confidence Double Sampling Plan

Lot Range	Sample Size 1	Accept if Defects in Sample 1 are Equal to or Less Than	Reject if Defects in Sample 1 are Equal to or Exceed	Continue with Sample 2 if Defects in Sample 1 are	Sample Size 2	Accept if Sum of Defects in Samples 1 and 2 are Equal to or Less Than	Reject if Defects in Samples 1 and 2 are Equal to or Exceed
1 to 18	All	0	1				
19 to 50	18	0	1				
51 to 90	21	0	2	1	21	1	2
91 to 150	25	0	3	1 or 2	25	2	3
151 to 400	32	0	4	1, 2 or 3	32	3	4
401 to 10 000	34	0	4	1, 2 or 3	34	3	4
10 001 to 35 000	40	0	5	1, 2, 3 or 4	40	4	5
35 001 to 100 000	46	0	6	1, 2, 3, 4 or 5	46	5	6
100 001 and up	52	0	7	1, 2, 3, 4, 5 or 6	52	6	7