Designation: E2555 – 07 (Reapproved 2012)

An American National Standard

Standard Practice for Factors and Procedures for Applying the MIL-STD-105 Plans in Life and Reliability Inspection[1]

This standard is issued under the fixed designation E2555; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice presents a procedure and related tables of factors for adapting Practice E2234 (equivalent to MIL-STD-105) sampling plans to acceptance sampling inspection when the item quality of interest is life length or reliability. Factors are provided for three alternative criteria for lot evaluation: mean life, hazard rate, and reliable life. Inspection of the sample is by attributes with testing truncated at the end of some prearranged period of time. The Weibull distribution, together with the exponential distribution as a special case, is used as the underlying statistical model.

1.2 A system of units is not specified by this practice.

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]

E456 Terminology Relating to Quality and Statistics

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

2.2 *Other Documents:*

MIL-STD-105E Sampling Procedures and Tables for Inspection by Attributes[3]

3. Terminology

3.1 *Definitions:*

3.1.1 The terminology defined in Terminology E456 applies to this practice unless modified herein.

3.1.2 *acceptance quality level (AQL), n*—quality limit that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling. **E2234**

3.1.2.1 *Discussion*—This term is often referred to as the "acceptance quality limit."

3.1.2.2 *Discussion*—This definition supersedes that given in MIL-STD-105E.

3.1.2.3 *Discussion*—A sampling plan and an AQL are chosen in accordance with the risk assumed. Use of a value of AQL for a certain defect or group of defects indicates that the sampling plan will accept the great majority of the lots or batches provided the process average level of percent defective (or defects per hundred units) in these lots or batches are no greater than the designated value of AQL. Thus, the AQL is a designated value of percent defective (or defects per hundred units) for which lots will be accepted most of the time by the sampling procedure being used. The sampling plans provided herein are so arranged that the probability of acceptance at the designated AQL value depends upon the sample size, being generally higher for large samples than for small ones, for a given AQL. The AQL alone does not identify the chances of accepting or rejecting individual lots or batches but more directly relates to what might be expected from a series of lots or batches, provided the steps indicated in this refer to the operating characteristic curve of the plan to determine the relative risks.

3.1.3 *consumer's risk, n*—probability that a lot having specified rejectable quality level will be accepted under a defined sampling plan.

3.1.4 *double sampling plan, n*—a multiple sampling plan in which up to two samplings can be taken and evaluated to accept or reject a lot.

3.1.5 *limiting quality level (LQL), n*—quality level having a specified consumer's risk for a given sampling plan.

3.1.6 *lot, n*—a definite quantity of a product or material accumulated under conditions that are considered uniform for sampling purposes.

3.1.6.1 *Discussion*—The lot for sampling may differ from a collection of units designated as a batch for other purposes, for example, production, shipment, and so forth.

---

[1] This practice is under the jurisdiction of ASTM Committee E11 on Quality and Statistics and is the direct responsibility of Subcommittee E11.30 on Statistical Quality Control.

Current edition approved May 1, 2012. Published May 2012. Originally approved in 2007. Last previous version approved in 2007 as E2555 – 07. DOI: 10.1520/E2555-07R12.

[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] MIL-STD-105E is also commonly referred to as "MIL-STD-105." It is virtually identical in content to its predecessor, MIL-STD-105D. These documents are out of print.

3.1.7 *multiple sampling plan, n*—a sampling plan in which successive samples from a lot are drawn and after each sample is inspected a decision is made to accept the lot, reject the lot, or to take another sample, based on quality level of the combined samples.

3.1.7.1 *Discussion*—When the quality is much less or much more than the AQL, the decision can be made on the first sample, which is smaller than that of a single sampling plan with equivalent acceptance quality level. For samples that are close to the AQL in quality, additional samples are required and the total sample size will be larger than the corresponding single sampling plan.

3.1.8 *sample, n*—group of items, observations, test results, or portions of material taken from a large collection of items, observations, test results, or quantities of material that serves to provide information that may be used as a basis for making a decision concerning the larger collection. **E2234**

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *acceptance number, n*—the maximum number of failed items allowed in the sample for the lot to be accepted using a single or multiple sampling plan.

3.2.2 *hazard rate, n*—differential fraction of items failing at time t among those surviving up to time t, symbolized by $h(t)$.

3.2.2.1 *Discussion*—$h(t)$ is also referred to as the instantaneous failure rate at time t. It is related to the probability density and cumulative distribution functions by $h(t) = f(t)/(1 - F(t))$.

3.2.3 *mean life, n*—average time that items in the lot or population are expected to operate before failure.

3.2.3.1 *Discussion*—This metric is often referred to as mean time to failure (MTTF) or mean time before failure (MTBF).

3.2.4 *rejection number, n*—the minimum number of failed items in the sample that will cause the lot to be rejected under a given sampling plan.

3.2.5 *reliable life* (ρ_r), *n*—life beyond which some specified proportion, r, of the items in the lot or population will survive.

3.2.6 *test truncation time (t), n*—amount of time sampled items are allowed to be tested.

3.2.7 *Weibull distribution, n*—probability distribution having cumulative distribution:

$$\text{function } F(t) = 1 - \exp\left(-\left(\frac{t-\gamma}{\eta}\right)^{\beta}\right),\ t>\gamma \text{ and probability density}$$

$$\text{function } f(t) = \frac{\beta}{\eta}\left(\frac{t-\gamma}{\eta}\right)^{\beta-1}\exp\left(-\left(\frac{t-\gamma}{\eta}\right)^{\beta}\right)$$

3.2.7.1 *Discussion*—The Weibull distribution is widely used for modeling product life. It can take a wide variety of shapes and also the characteristics of other types of distributions based on the value of its parameters. γ is called the location, minimum life, or threshold parameter and defines the lower limit of the distribution (Fig. 1). η is called the scale or characteristic life parameter and is equal to the 63.2 percentile of the distribution, minus γ (Fig. 2). β is the shape parameter (Fig. 3). The exponential distribution is the special case where $\gamma = 0$ and $\beta = 1$.

4. Significance and Use

4.1 The procedure and tables presented in this practice are based on the use of the Weibull distribution in acceptance sampling inspection. Details of this work, together with tables

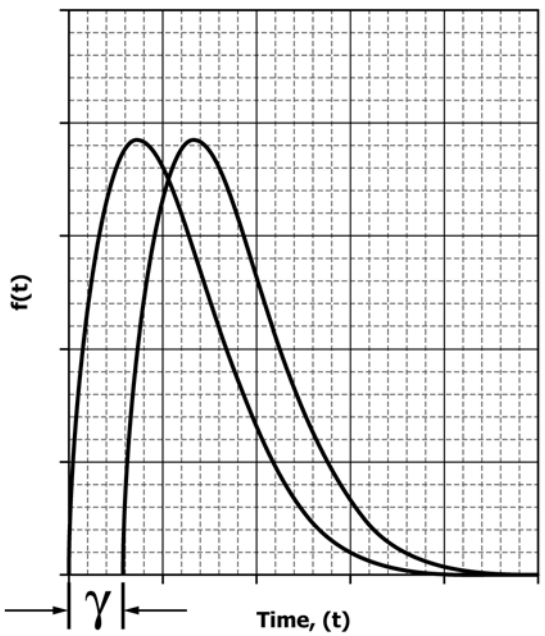

FIG. 1 Effect of the Parameter γ on the Weibull Probability Density Function, *f(t)*

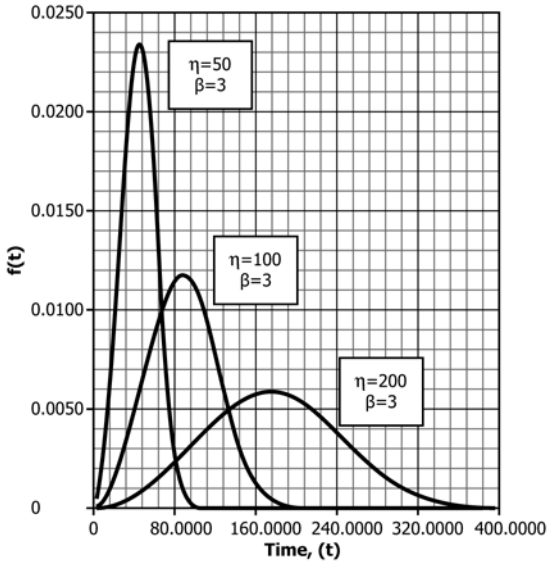

FIG. 2 Effect of the Parameter η on the Weibull Probability Density Function, *f(t)*

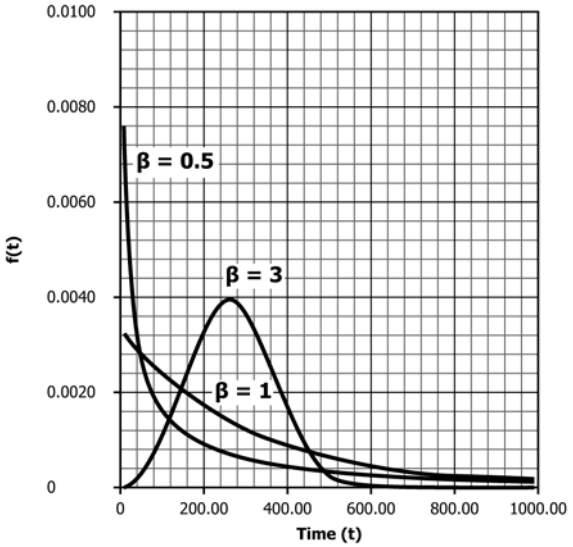

FIG. 3 Effect of the Parameter β on the Weibull Probability Density Function, *f(t)*

of sampling plans of other forms, have been published previously. See Refs (**1-3**).[4] Since the basic computations required have already been made, it has been quite easy to provide these new factors. No changes in method or details of application have been made over those described in the publications referenced above. For this reason, the text portion of this report has been briefly written. Readers interested in further details are referred to these previous publications. Other sources of material on the underlying theory and approach are also available (**4-7**).

4.2 The procedure to be used is essentially the same as the one normally used for attribute sampling inspection. The only difference is that sample items are tested for life or survival instead of for some other property. For single sampling, the following are the required steps:

4.2.1 Using the tables of factors provided in Annex A1, select a suitable sampling inspection plan from those tabulated in Practice E2234.

4.2.2 Draw at random a sample of items of the size specified by the selected Practice E2234 plan.

4.2.3 Place the sample of items on life test for the specified period of time, *t*.

4.2.4 Determine the number of sample items that failed during the test period.

[4] The boldface numbers in parentheses refer to the list of references at the end of this standard.

4.2.5 Compare the number of items that failed with the number allowed under the selected Practice E2234 plan.

4.2.6 If the number that failed is equal to or less than the acceptable number, accept the lot; if the number failing exceeds the acceptable number, reject the lot.

4.3 Both the sample sizes and the acceptance numbers used are those specified by Practice E2234 plans. It will be assumed in the section on examples that single sampling plans will be used. However, the matching double sampling and multiple sampling plans provided in MIL-STD-105 can be used if desired. The corresponding sample sizes and acceptance and rejection numbers are used in the usual way. The specified test truncation time, t, must be used for all samples.

4.4 The probability of acceptance for a lot under this procedure depends only on the probability of a sample item failing before the end of the test truncation time, t. For this reason, the actual life at failure need not be determined; only the number of items failing is of interest. Life requirements and test time specifications need not necessarily be measured in chronological terms such as minutes or hours. For example, the life measure may be cycles of operation, revolutions, or miles of travel.

4.5 The underlying life distribution assumed in this standard is the Weibull distribution (note that the exponential distribution is a special case of the Weibull). The Weibull model has three parameters. One parameter is a scale or characteristic life parameter. For these plans and procedures, the value for this parameter need not be known; the techniques used are independent of its magnitude. A second parameter is a location or "guaranteed life" parameter. In these plans and procedures, it is assumed that this parameter has a value of zero and that there is some risk of item failure right from the start of life. If this is not the case for some applications, a simple modification in procedure is available. The third parameter, and the one of importance, is the shape parameter, β.[5] The magnitude of the conversion factors used in the procedures described in this report depends directly on the value for this parameter. For this reason, the magnitude of the parameter shall be known through experience with the product or shall be estimated from past research, engineering, or inspection data. Estimation procedures are available and are outlined in Ref (**1**).

4.6 For the common case of random chance failures with the failure rate constant over time, rather than failures as a result of "infant mortality" or wearout, a value of 1 for the shape parameter shall be assumed. With this parameter value, the Weibull distribution reduces to the exponential. Tables of conversion factors are provided in Annex A1 for 15 selected shape parameter values ranging from ½ to 10, the range commonly encountered in industrial and technical practice. The value 1, used for the exponential case, is included. Factors for other required shape parameter values within this range may be obtained approximately by interpolation. A more complete discussion of the relationship between failure patterns and the Weibull parameters can be found in Refs (**1-3**).

[5] In some disciplines, the Weibull shape β parameter is referred to as the "Weibull slope."

4.7 One possible acceptance criterion is the mean life for items making up the lot (μ). Mean life conversion factors or values for the dimensionless ratio $100t/\mu$ have been determined to correspond to or replace all the p' or percent defective values associated with Practice E2234 plans. In this factor, t represents the specified test truncation time and μ the mean item life for the lot. For reliability or life-length applications, these factors are used in place of the corresponding p' values normally used in the use of Practice E2234 plans for attribute inspection of other item qualities. The use of these factors will be demonstrated by several examples (see Sections 5, 7, and 9).

4.8 Annex Table 1A lists, for each selected shape parameter value, $100t/\mu$ ratios for each of the Practice E2234 AQL [$p'(\%)$] values. With acceptance inspection plans selected in terms of these ratios, the probability of acceptance will be high for lots whose mean life meets the specified requirement. The actual probability of acceptance will vary from plan to plan and may be read from the associated operating characteristic curves supplied in MIL-STD-105. The curves are entered by using the corresponding $p'(\%)$ value. Annex Table 1B lists $100t/\mu$ ratios at the LQL for the quality level at which the consumer's risk is 0.10. Annex Table 1C lists corresponding $100t/\mu$ ratios for a consumer's risk of 0.05.

4.8.1 These ratios are to be used directly for the usual case for which the value for the Weibull location or threshold parameter (γ) can be assumed as zero. If γ is not zero but has some other known value, all that shall be done is to subtract the value for γ from t to get t_0 and from m to get m_0. These transformed values, t_0 and m_0, are then employed in the use of the tables and for all other computations. A solution in terms of m_0 and t_0 can then be converted back to actual or absolute values by adding the value for γ to each.

5. Examples, Mean Life Ratio

5.1 A Practice E2234 acceptance sampling inspection plan is to be applied to incoming lots of product for which the mean item life is the property of interest. An acceptable mean life of 2000 h has been specified, and under the plan, used lots with a mean life of this value or greater shall have a high probability of acceptance. A testing truncation time of t = 250 h has been specified. From past experience it has been determined that the Weibull distribution can be used as a life-length model and a shape parameter value of 2.5 and a location or threshold parameter value of 0 can be assumed. Single sampling is to be used. A sample of as many as 300 items or so can be tested at one time. An appropriate sampling inspection plan shall be selected. Also, the consumer's risk under use of the selected plan shall be determined.

5.1.1 Computation of the $100t/\mu$ ratio at the AQL gives $100t/\mu = 100 \times 250/2000 = 12.5$. Examination of the ratios in the column for a shape parameter of 2.5 in Annex Table 1A discloses a value of 12.4 for an AQL of 0.40 in $p'(\%)$ terms. A plan with this AQL is accordingly to be used. Reference now to Practice E2234 indicates for Sample Size Code Letter M the sample size is 315; this value will accordingly be used. Examination of the Master Table for Normal Inspection (Single Sampling) in Practice E2234 shows for Sample Size Code

Letter M and an AQL of 0.40, the acceptance number must be 3 and the rejection number 4.

5.1.2 The acceptance procedure will thus be to draw at random a sample of 315 items and submit them to life test for 250 h. At the end of that time, the number that has failed will be determined. If three items or less have failed, the lot will be accepted; if four or more have failed, it will be rejected.

5.1.3 The consumer's risk at a probability level of 0.10 can be determined by use of Annex Table 1B which gives $100t/\mu$ ratios at the LQL for the 0.10 risk value. For a shape parameter value of 2.5, a Sample Size Code Letter M, and an AQL of 0.40, the $100t/\mu$ ratio value is found to be 24. With $t = 250$, $100t/\mu = 24$ or $100 \times 250/\mu = 24$ which gives a value for μ of 1040. Thus, if the mean life for the items in the lot is 1040 h or less, the probability of acceptance will be 0.10 or less. If the lot quality for which the consumer's risk was 0.05 was desired instead, Annex Table 1C might be used which gives ratios at the LQL for this risk value.

5.2 A Practice E2234 plan with Sample Size Code Letter F and an AQL of 4.0 has been specified for a product for which life length in terms of cycles of operation is the quality of interest. Acceptance is to be in terms of a mean life evaluation. The Weibull distribution can be assumed to apply with a shape parameter value and a location parameter value of 0. Testing of sample items is to be truncated at 5000 cycles. The operating characteristics in terms of mean life for this plan are required.

5.2.1 Annex Table 1A lists ratios of $100t/\mu$ at selected AQLs and gives a $100t/\mu$ value of 0.62 for an AQL of 4.0 and a shape parameter value of ⅔. With $t = 5000$, $100t/\mu = 0.62$ or $100 \times 5000/\mu = 0.62$ which gives $\mu = 810\,000$. Therefore, if the mean item life for the lot is 810 000 or more, the probability of acceptance will be high. Annex Table 1C gives ratios $100t/\mu$ at the LQL for a consumer's risk of 0.05 and provides a $100t/\mu$ value of 14 for Code Letter F, an AQL of 4.0, and a shape parameter value of ⅔. Thus, $100 \times 5000/\mu = 14$ or $\mu = 36\,000$. If the mean item life for the lot is 36 000 cycles or less, the probability of acceptance will be 0.05 or less.

5.2.2 The sample size and acceptance number will be those specified by Practice E2234 for Code Letter F and an AQL of 4.0. For single sampling, the sample size will be 20 items and the acceptance number 2. For this example, as in all cases, the matched Practice E2234 double sampling and multiple sampling plans may be used instead. No additional changes in procedure are required. The specified test time, which in this case is 5000 cycles, shall be used for all samples.

5.3 Assume the Weibull distribution applies with a shape parameter value of $\beta = 3.33$ and a location or threshold parameter value, γ, of 3000 h. A Practice E2234 acceptance-inspection plan shall be selected under which the probability of acceptance will be low (0.05 or less) if mean item life is 8000 h or less. The sample size will be kept large to reduce the testing period time but it cannot exceed 250 items. To reduce further testing time, an acceptance number of 0 will be used. The required test truncation time must be determined; also, the AQL.

5.3.1 Reference to Practice E2234 indicates the Code Letter L with a sample size of 200 items shall be used. With this code letter and an acceptance number of 0, the AQL in Practice E2234 terms must be 0.065. Subtraction of the threshold parameter value, γ, of 3000 h from the required mean value, μ, of 8000 h gives as a converted value for the mean $\mu_0 = 8000 - 3000 = 5000$ h. This converted value must now be used in working with the tables of factors. Use of Annex Table 1C for $\beta = 3⅓$ Code Letter L, and an AQL of 0.065 gives a $100t/\mu$ value of 31 at the LQL (for $P(A) = 0.05$). With $\mu_0 = 5000$, $100t_0/\mu_0 = 100\ t_0/5000 = 31$ or $t_0 = 1550$ h. Conversion of this to absolute terms gives $t = t_0 + \gamma = 1550 + 3000 = 4550$ h as the required test truncation time.

5.3.2 From Annex Table 1A, the corresponding ratio at the AQL may be found. For an AQL of 0.065 and $b = 3⅓$ it is 12.3. Thus, $100\ t_0/\mu_0 = 12.3$ or $100 \times 1550/\mu_0 = 12.3$ or $\mu_0 = 12\,600$. Converting this to absolute terms gives $\mu = \mu_0 + \gamma = 12\,600 + 3000 = 15\,600$. Thus, the mean item life for a lot shall be 15 600 h or more for its probability of acceptance to be high.

6. Hazard Rate Conversion Factors

6.1 Another measure of lot quality is the hazard rate or instantaneous failure rate, $h(t)$, at some specified period of time, t. Hazard rate conversion factors or values for the dimensionless product $100t\{h(t)\}$ have been determined for all of the p' values that characterize the collection of Practice E2234 plans. As for the mean life plans, these products may be used in place of the corresponding p' values when using the Practice E2234 plans for life-length and reliability applications.

6.2 Annex Table 2A lists for each selected value for the shape parameter $100t\{h(t)\}$ products for each Practice E2234 AQL value. Annex Table 2B lists corresponding $100t\{h(t)\}$ products at the LQL for a consumer's risk of 0.10. Annex Table 2C lists products at the LQL for a consumer's risk of 0.05. Use of these tables of factors is similar to the method of use for the mean life ratios including the variation in method required when some nonzero value for the location or threshold parameter shall be assumed.

6.2.1 Note one point of difference. The products are for direct application only in cases in which the time t at which the hazard rate is specified or is to be evaluated is the same as the time t at which the life testing of sample items is to be truncated. However, a table of hazard rate ratios has been prepared, Annex Table 2D, to use in a simple modification of method that allows the test truncation time to differ from the time at which the hazard rate is specified. All that shall be done is to determine the hazard rate at the test truncation time which corresponds to the hazard rate at the specification time. Annex Table 2D provides ratios for making this conversion. It gives for various values of t_2/t_1 the corresponding values for the ratio $h(t_2)/h(t_1)$ for all the shape parameter values for which conversion values have been provided. If the test truncation time is shorter than the time for hazard rate specification, t_1 is used to represent the test truncation time and $h(t_1)$ the corresponding hazard rate at that time. In this case, t_2 represents the time of hazard rate specification and $h(t_2)$ the specified hazard rate. If the test truncation is longer instead, the meanings given Subscripts 1 and 2 are simply reversed.

7. Examples, Hazard Rate

7.1 An acceptance-inspection plan shall be selected from the Practice E2234 collection for an application for which the Weibull distribution applies and for which it may be assumed the shape parameter value is 1.67 and the location parameter value is 0. A hazard rate of no more than 0.0005/h at 1000 h of life can be tolerated so a plan under which the probability of acceptance will be low (0.10) if this rate will be exceeded at this life is required. The test truncation time is likewise to be 1000 h.

7.1.1 Computation of the $100t\{h(t)\}$ product gives $100 \times 1000 \times 0.0005 = 50$. Thus, apian shall be used for which this product is found at the LQL for which the consumer's risk is 0.10. Examination of the column for $\beta = 1.67$ in Annex Table 2B discloses several close possibilities. One is for a plan with Code Letter D and an AQL of 1.5 for which the product is 48; another is Code Letter F and an AQL of 4.0 for which the product is likewise 48; still another is Code Letter G and an AQL of 6.5 for which the product is 53. Any of these will provide fairly closely the required consumer's protection.

7.1.2 The last plan mentioned with its relatively large sample size and acceptance number will discriminate most sharply between good and bad lots and hence provide the most reasonable AQL. This will be achieved at the expense of a relatively large number of item hours of inspection, of course. With this choice (Code Letter G and an AQL of 6.5) the AQL can be easily determined. Reference to Annex Table 2A gives a value for $100t\{h(t)\}$ of 11.2 for an AQL of 6.5. Thus, $100 \times 1000\ h(t) = 11.2$ or $h(t) = 0.000\ 112$ at $t = 1000$; the "acceptable" hazard rate is therefore 0.000 112 (per hour). If, alternatively, Code Letter D and an AQL of 1.5 had been used, the "acceptable" hazard rate would be 0.000 025 2 (per hour) instead.

7.2 Suppose the selected sampling plan must have an acceptable hazard rate (a rate for which the probability of acceptance is high) of 0.0001 per hour at 500 h of life. However, the testing of sample items shall be truncated at 200 h. A value of $\beta = 0.67$ and a location parameter of 0 can be assumed. A Practice E2234 plan shall be selected.

7.2.1 In this case, use Annex Table 2D. Letting $t_2 = 500$ and $t_1 = 200$, $t_2/t_1 = 500/200 = 2.5$. Referencing Annex Table 2D with this ratio using the value $\beta = 0.67$ column shows $h(t_2)/h(t_1)$ to be 0.734. With $h(t_2) = 0.0001, 0.0001/h(t_1) = 0.734$ or $h(t_1) = 0.000\,136$. This failure rate number shall be used in selecting the plan. Thus, $100t\{h(t)\} = 100 \times 200 \times 0.000\ 136 = 2.72$ (note that the testing truncation time of 200 h is used as t at this point). Referencing Annex Table 2A examining the column for $\beta = 0.67$ shows that a Practice E2234 plan with an AQL of 4.0 % precisely meets this need.

8. Reliable Life Conversion Factors

8.1 A third possible reliability and life-length measure for the items in a lot or population is reliable life (ρ). Reliable life can be defined as the life beyond which some specified proportion of the items in the lot or population will survive. The letter r represents this specified proportion.

8.1.1 Tables of conversion factors have been prepared for two different proportions, $r = 0.90$ and $r = 0.99$. As for the mean life case, these reliable life conversion factors have been prepared in the form of values for the dimensionless ratio $100t/\rho$. Ratio values have been determined for all the $p'(\%)$ values associated with Practice E2234 plans. Annex Table 3A gives $100t/\rho$ values at each of the AQLs for $r = 0.90$; Annex Table 4A gives corresponding values for $r = 0.99$. Annex Table 3B gives ratio values at the LQL for a consumer's risk of 0.10 for $r = 0.90$; Annex Table 4B gives corresponding values for a consumer's risk of 0.10 and $r = 0.99$. Annex Table 3C gives ratio values at the LQL for a consumer's risk of 0.05 and $r = 0.90$; Annex Table 4C gives similar ratio values at a consumer's risk of 0.05 and $r = 0.99$. These conversion ratios are used in the same manner in which mean life ratios are used, including the manner for application when the location parameter is not zero. See Section 9 for an example.

9. Examples, Reliable Life

9.1 A sampling inspection plan shall be selected for a product for which item life in terms of feet of travel is the quality of interest. Experience indicates the Weibull distribution will serve well as a statistical model with a shape parameter value of approximately 1⅓ and a location parameter of 0. A lot will be considered "acceptable" if the reliable life is 40 000 ft and the probability of acceptance for such lots shall be high. For lots in which reliable life is 10 000 ft or less, the probability of acceptance shall be low, namely 0.05 or less. Reliable life is defined as the life beyond which 90 % of the items will survive; that is, r is to be 0.90. Testing of sample items is to be truncated at 5000 ft.

9.1.1 At the AQL, the $100t/\rho$ factor is $100 \times 5000/40\ 000 = 12.5$. Examination of Annex Table 3A shows that for $\beta = 1⅓$ the $100t/\rho$ ratio for an AQL of 0.65 is 12.4 which is quite close to the desired ratio. Accordingly, a plan with this AQL is to be adopted. At the unacceptable or LQL, the $100t/\rho_r$ factor is $100 \times 5000/10\ 000 = 50$. Referencing Annex Table 3C, which gives ratios at the LQL for $P(A) = 0.05$, shows that, for Code Letter L, an AQL of 0.65 (which is required for this application, as indicated above) and $\beta = 1⅓$ the corresponding ratio is 48, which is close to the desired value of 50. Thus, a Practice E2234 plan with Code Letter L and an AQL of 0.65 will meet the specified operating requirements. For single sampling, Practice E2234 shows the sample size to be 200 items and the acceptance number 3.

10. Summary

10.1 This practice preserves the structure of TR-7 for use in applications in which that standard is prescribed or its use is desirable.

10.2 This practice provides tables and procedures for applying three different measures of reliability in which testing is performed without replacement.

10.2.1 *Mean Life,* μ—The expected life of the product.

10.2.2 *Hazard Rate, h(t)*—The instantaneous failure rate at some specified time, t.

10.2.3 *Reliable Life,* ρ_r—The life ρ beyond which some specified proportion r of the items in the population will survive.

10.3 *Procedure for Application:*

10.3.1 Using the tables of factors provided in Annex A1, select a suitable sampling inspection plan from those tabulated in Practice E2234 for normal inspection.

10.3.2 Draw at random a sample of items of the size specified by the selected Practice E2234 plan.

10.3.3 Place the sample of items on life test for the specified period of time, t.

10.3.4 Determine the number of sample items that failed during the test period.

10.3.5 Compare the number of items that failed with the number allowed under the selected Practice E2234 plan.

10.3.6 If the number that failed is equal to or less than the acceptance number, accept the lot; if the number failing exceeds the acceptance number, reject the lot.

10.4 *Selection—Mean Life:*

10.4.1 Specify:

10.4.1.1 Acceptable mean life, μ_0.

10.4.1.2 Unacceptable mean life, μ_1.

10.4.1.3 Test truncation time, t.

10.4.1.4 Weibull shape parameter, β.

10.4.2 Compute the dimensionless ratio $100t/\mu_0$ from the specified μ_0 and t and enter Annex Table 1A under β. Locate the nearest value of $100t/\mu_0$ to that calculated and read the corresponding AQL.

10.4.3 Compute the dimensionless ratio $100t/\mu_1$ from the specified μ_1 and t and enter Annex Table 1B under β. Locate the nearest value of $100t/\mu_1$ corresponding to the AQL obtained in 10.4.2 and read the sample size code letter (use Annex Table 1C if a limiting quality with 5 % probability of acceptance is desired).

10.4.4 Obtain the sample size and acceptance number for the test from the Practice E2234 normal inspection plan.

10.4.5 *Mean Life Example:*

10.4.5.1 Suppose $\mu_0 = 50$, $\mu_1 = 10$, $t = 5$, $\beta = 1$, then $100t/\mu_0 = 10$ giving an AQL of 10 from Annex Table 1A and $100t/\mu_1 = 50$ giving Code F from Table 1B.

10.4.5.2 Practice E2234 gives sample size 20. Accept on 5 for Code F, AQL = 10.

10.5 *Selection—Hazard Rate or Reliable Life:*

10.5.1 The selection of plans for a specified hazard rate or reliable life follows the procedure for mean life described in 10.4 using appropriate dimensionless ratios and the associated tables from Annex A1.

10.5.2 Hazard rate uses the product $100t\{h(t)\}$ with the Annex A1 tables of Section B.

10.5.3 Reliable life uses the dimensionless ratio $100t/\rho$ with the Annex A1 tables of Section C.

11. Keywords

11.1 exponential distribution; hazard rate; mean life; MIL-STD-105; reliability; reliable life; Weibull distribution

ANNEX

(Mandatory Information)

A1. TABLES OF CONVERSION FACTORS

TABLE 1A

100t/μ Ratios at the Acceptable Quality Level (normal inspection) for the ASTM E2234 Plans

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

AQL	Shape Parameter, β														
p'(%)	0.333	0.500	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
0.010	1.67E-11	5.00E-07	7.52E-05	1.00E-02	0.109	0.239	0.446	1.128	2.831	5.198	7.031	7.999	11.033	17.262	41.847
0.015	5.63E-11	1.13E-06	1.38E-04	1.50E-02	0.147	0.313	0.568	1.382	3.330	5.950	7.940	8.981	12.210	18.720	43.578
0.025	2.61E-10	3.13E-06	2.97E-04	2.50E-02	0.216	0.440	0.772	1.784	4.085	7.055	9.255	10.393	13.873	20.734	45.863
0.040	1.07E-09	8.00E-06	6.02E-04	4.00E-02	0.308	0.601	1.024	2.257	4.930	8.252	10.657	11.887	15.603	22.778	48.070
0.065	4.58E-09	2.11E-05	1.25E-03	6.50E-02	0.443	0.831	1.370	2.877	5.986	9.702	12.328	13.656	17.617	25.101	50.462
0.100	1.67E-08	5.01E-05	2.38E-03	0.100	0.612	1.108	1.774	3.569	7.113	11.200	14.030	15.445	19.622	27.360	52.684
0.150	5.64E-08	1.13E-04	4.38E-03	0.150	0.830	1.452	2.263	4.372	8.366	12.822	15.845	17.344	21.716	29.673	54.866
0.250	2.61E-07	3.13E-04	9.42E-03	0.250	1.218	2.042	3.076	5.645	10.265	15.205	18.472	20.072	24.677	32.868	57.744
0.400	1.07E-06	8.03E-04	1.91E-02	0.401	1.733	2.795	4.080	7.144	12.391	17.788	21.274	22.962	27.759	36.113	60.527
0.650	4.62E-06	2.13E-03	3.96E-02	0.652	2.497	3.867	5.464	9.112	15.055	20.922	24.619	26.388	31.352	39.806	63.547
1.000	1.69E-05	5.05E-03	7.58E-02	1.005	3.454	5.159	7.083	11.312	17.899	24.167	28.031	29.859	34.932	43.402	66.356
1.500	5.75E-05	1.14E-02	0.140	1.511	4.690	6.771	9.047	13.872	21.071	27.687	31.680	33.551	38.683	47.092	69.119
2.500	2.70E-04	3.20E-02	0.303	2.532	6.906	9.551	12.330	17.954	25.901	32.883	36.983	38.879	44.008	52.211	72.778
4.000	1.13E-03	8.33E-02	0.620	4.082	9.882	13.133	16.422	22.798	31.355	38.559	42.682	44.565	49.591	57.446	76.339
6.500	5.06E-03	0.226	1.311	6.721	14.362	18.311	22.149	29.253	38.275	45.530	49.569	51.388	56.174	63.469	80.242

TABLE 1A

100t/μ Ratios at the Acceptable Quality Level (normal inspection)
for the ASTM E2234 Plans

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

AQL	Shape Parameter, β														
p'(%)	0.333	0.500	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
10.000	1.95E-02	0.555	2.573	10.536	20.122	24.711	29.007	36.626	45.816	52.891	56.726	58.431	62.856	69.441	83.932

TABLE 1B

100t/μ Ratios at the Limiting Quality Level
for the ASTM E2234 Plans, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code	AQL	Shape Parameter, β														
Letter	(p%)	0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	25.433	66.274	92.927	115.129	120.933	121.682	121.789	121.073	119.240	117.369	116.235	115.707	114.281	112.025	106.605
B	4.000	7.536	29.455	50.583	76.753	89.223	92.861	95.489	98.856	101.388	102.531	102.922	103.050	103.265	103.299	102.369
C	2.500	1.628	10.604	23.509	46.052	60.826	66.059	70.282	76.573	82.650	86.478	88.298	89.056	90.885	93.267	97.271
C	10.000	11.235	38.440	61.762	87.681	98.590	101.478	103.429	105.659	106.932	107.183	107.115	107.045	106.759	106.086	103.741
D	1.500	0.397	4.142	11.616	28.782	42.756	48.289	53.012	60.537	68.485	73.938	76.686	77.865	80.809	84.899	92.805
D	6.500	2.361	13.587	28.313	52.129	66.752	71.750	75.709	81.469	86.852	90.126	91.644	92.267	93.745	95.608	98.484
D	10.000	7.688	29.850	51.091	77.265	89.669	93.274	95.871	99.185	101.658	102.759	103.128	103.247	103.437	103.437	102.437
E	1.000	9.26E-02	1.569	5.608	17.712	29.707	34.937	39.615	47.489	56.397	62.890	66.292	67.780	71.573	77.043	88.407
E	4.000	0.505	4.859	13.094	31.175	45.395	50.930	55.614	63.003	70.708	75.933	78.546	79.662	82.439	86.266	93.549
E	6.500	1.478	9.943	22.401	44.594	59.376	64.657	68.939	75.352	81.594	85.556	87.450	88.241	90.157	92.669	96.959
E	10.000	3.379	17.255	33.871	58.746	73.011	77.700	81.336	86.486	91.104	93.789	94.989	95.471	96.588	97.920	99.668
F	0.650	2.54E-02	0.663	2.939	11.513	21.505	26.215	30.592	38.287	47.470	54.478	58.255	59.930	64.265	70.683	84.679
F	2.500	0.133	1.992	6.709	19.962	32.495	37.836	42.562	50.415	59.160	65.448	68.714	70.136	73.745	78.908	89.471
F	4.000	0.369	3.940	11.189	28.073	41.963	47.492	52.224	59.786	67.805	73.325	76.114	77.312	80.306	84.476	92.574
F	6.500	0.795	6.577	16.430	36.267	50.850	56.335	60.899	67.954	75.120	79.860	82.193	83.182	85.617	88.916	94.975
F	10.000	2.566	14.362	29.516	53.596	68.156	73.089	76.980	82.608	87.821	90.964	92.410	93.001	94.398	96.140	98.758
G	0.400	6.21E-03	0.259	1.452	7.196	15.117	19.164	23.075	30.268	39.334	46.578	50.594	52.399	57.141	64.341	80.792
G	1.500	3.14E-02	0.763	3.266	12.352	22.670	27.474	31.911	39.657	48.825	55.770	59.498	61.147	65.405	71.684	85.277
G	2.500	8.46E-02	1.476	5.358	17.183	29.038	34.237	38.900	46.773	55.716	62.257	65.691	67.194	71.032	76.576	88.139
G	4.000	0.176	2.407	7.730	21.939	34.879	40.294	45.043	52.852	61.437	67.540	70.688	72.053	75.506	80.412	90.319
G	6.500	0.524	4.981	13.339	31.563	45.818	51.351	56.028	63.393	71.059	76.246	78.837	79.944	82.694	86.479	93.665
G	10.000	1.201	8.658	20.194	41.613	56.374	61.743	66.136	72.790	79.367	83.606	85.654	86.514	88.611	91.395	96.290
H	0.250	1.63E-03	0.106	0.743	4.605	10.817	14.232	17.654	24.215	32.904	40.140	44.254	46.126	51.108	58.847	77.265
H	1.000	8.09E-03	0.309	1.657	7.859	16.150	20.324	24.329	31.633	40.747	47.967	51.950	53.737	58.414	65.486	81.507
H	1.500	2.14E-02	0.590	2.694	10.865	20.592	25.223	29.548	37.194	46.384	53.437	57.252	58.947	63.342	69.869	84.191
H	2.500	4.36E-02	0.950	3.849	13.783	24.613	29.558	34.081	41.892	51.014	57.846	61.487	63.093	67.223	73.274	86.217
H	4.000	0.125	1.912	6.505	19.555	31.996	37.320	42.039	49.898	58.675	65.000	68.290	69.724	73.366	78.583	89.286
H	6.500	0.273	3.222	9.621	25.385	38.912	44.411	49.164	56.852	65.130	70.906	73.850	75.121	78.311	82.793	91.647
H	10.000	0.680	5.928	15.199	34.432	48.908	54.418	59.030	66.212	73.575	78.490	80.922	81.956	84.512	87.997	94.483
J	0.150	3.97E-04	4.14E-02	0.367	2.878	7.603	10.404	13.316	19.143	27.264	34.319	38.434	40.330	45.442	53.568	73.718
J	0.650	1.95E-03	0.120	0.814	4.893	11.320	14.819	18.308	24.960	33.711	40.959	45.066	46.932	51.889	59.565	77.735
J	1.000	5.10E-03	0.227	1.316	6.738	14.390	18.342	22.183	29.290	38.314	45.569	49.606	51.425	56.210	63.501	80.262
J	1.500	1.03E-02	0.362	1.868	8.513	17.147	21.436	25.523	32.922	42.070	49.262	53.211	54.977	59.593	66.541	82.161
J	2.500	2.86E-02	0.717	3.117	11.974	22.148	26.911	31.322	39.046	48.222	55.196	58.946	60.607	64.899	71.240	85.013
J	4.000	6.09E-02	1.186	4.547	15.403	26.752	31.830	36.430	44.285	53.332	60.029	63.571	65.128	69.116	74.920	87.180
J	6.500	0.145	2.119	7.025	20.584	33.251	38.618	43.353	51.194	59.891	66.120	69.349	70.753	74.312	79.393	89.745
J	10.000	0.354	3.832	10.956	27.682	41.525	47.051	51.787	59.369	67.426	72.984	75.795	77.003	80.026	84.240	92.444
K	0.100	1.04E-04	1.70E-02	0.188	1.842	5.440	7.726	10.188	15.315	22.807	29.575	33.618	35.502	40.645	48.994	70.500
K	0.400	5.08E-04	4.88E-02	0.415	3.124	8.086	10.989	13.988	19.945	28.174	35.270	39.392	41.287	46.384	54.454	74.325
K	0.650	1.32E-03	9.21E-02	0.669	4.292	10.261	13.580	16.925	23.378	31.991	39.210	43.330	45.209	50.217	58.025	76.724
K	1.000	2.64E-03	0.146	0.947	5.410	12.206	15.845	19.445	26.246	35.094	42.354	46.445	48.299	53.208	60.774	78.520
K	1.500	7.24E-03	0.287	1.568	7.573	15.707	19.828	23.793	31.052	40.147	47.378	51.376	53.170	57.875	65.002	81.205
K	2.500	1.52E-02	0.470	2.270	9.692	18.900	23.373	27.590	35.129	44.311	51.439	55.323	57.054	61.558	68.290	83.234
K	4.000	3.54E-02	0.825	3.465	12.849	23.351	28.206	32.675	40.447	49.602	56.509	60.206	61.840	66.054	72.252	85.614
K	6.500	8.31E-02	1.459	5.312	17.084	28.913	34.105	38.765	46.638	55.588	62.137	65.577	67.084	70.929	76.488	88.088
K	10.000	2.51E-01	3.050	9.234	24.700	38.122	43.608	48.363	56.079	64.420	70.262	73.247	74.535	11.111	82.341	91.396
L	0.065	2.54E-05	6.63E-03	9.29E-02	1.151	3.824	5.648	7.684	12.107	18.898	25.286	29.197	31.041	36.139	44.598	67.263
L	0.250	1.24E-04	1.90E-02	0.205	1.950	5.677	8.025	10.541	15.756	23.331	30.141	34.196	36.083	41.226	49.553	70.902
L	0.400	3.19E-04	3.58E-02	0.329	2.675	7.196	9.907	12.742	18.454	26.476	33.490	37.597	39.493	44.616	52.787	73.179
L	0.650	6.35E-04	5.66E-02	0.465	3.366	8.550	11.548	14.627	20.701	29.026	36.156	40.281	42.174	47.255	55.271	74.880
L	1.000	1.73E-03	0.110	0.766	4.696	10.977	14.419	17.863	24.453	33.163	40.403	44.515	46.386	51.360	59.079	77.417

TABLE 1B

100t/μ Ratios at the Limiting Quality Level
for the ASTM E2234 Plans, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
L	1.500	3.58E-03	0.179	1.103	5.991	13.176	16.961	20.673	27.619	36.556	43.819	47.889	49.728	54.583	62.027	79.325
L	2.500	8.23E-03	0.312	1.671	7.903	16.218	20.400	24.411	31.722	40.838	48.057	52.038	53.823	58.497	65.560	81.553
L	4.000	1.89E-02	0.544	2.536	10.435	19.977	24.552	28.840	36.450	45.640	52.722	56.562	58.270	62.705	69.307	83.851
L	6.500	5.50E-02	1.109	4.323	14.892	26.083	31.122	35.699	43.544	52.617	59.357	62.931	64.503	68.535	74.416	86.887
M	0.040	6.51E-06	2.67E-03	4.70E-02	0.731	2.720	4.172	5.851	9.647	15.758	21.733	25.477	27.263	32.259	40.725	64.276
M	0.150	3.15E-05	7.65E-03	0.103	1.237	4.035	5.924	8.022	12.549	19.448	25.897	29.831	31.683	36.792	45.242	67.747
M	0.250	8.12E-05	1.44E-02	0.166	1.695	5.111	7.309	9.692	14.691	22.061	28.766	32.789	34.668	39.808	48.185	69.916
M	0.400	1.61E-04	2.27E-02	0.234	2.131	6.069	8.515	11.119	16.472	24.176	31.047	35.120	37.011	42.153	50.443	71.535
M	0.650	4.36E-04	4.40E-02	0.385	2.968	7.780	10.619	13.564	19.440	27.601	34.672	38.790	40.686	45.793	53.898	73.944
M	1.000	8.99E-04	7.14E-02	0.553	3.779	9.326	12.474	15.679	21.935	30.402	37.580	41.706	43.593	48.643	56.566	75.753
M	1.500	2.05E-03	0.124	0.834	4.970	11.454	14.975	18.481	25.157	33.924	41.174	45.279	47.143	52.093	59.753	77.857
M	2.500	4.65E-03	0.214	1.257	6.537	14.066	17.975	21.782	28.849	37.852	45.110	49.157	50.981	55.785	63.117	80.019
M	4.000	1.32E-02	0.429	2.120	9.260	18.265	22.674	26.846	34.338	43.511	50.664	54.572	56.316	60.861	67.671	82.856
N	0.025	1.63E-06	1.06E-03	2.35E-02	0.461	1.923	3.066	4.435	7.657	13.099	18.631	22.180	23.891	28.740	37.130	61.374
N	0.100	7.87E-06	3.03E-03	5.17E-02	0.779	2.852	4.352	6.078	9.957	16.162	22.197	25.965	27.760	32.774	41.243	64.684
N	0.150	2.02E-05	5.69E-03	8.29E-02	1.067	3.611	5.367	7.340	11.654	18.329	24.651	28.535	30.370	35.455	43.922	66.751
N	0.250	4.01E-05	8.98E-03	0.117	1.340	4.286	6.250	8.418	13.063	20.082	26.600	30.558	32.418	37.538	45.974	68.293
N	0.400	1.08E-04	1.74E-02	0.191	1.864	5.490	7.788	10.261	15.407	22.917	29.694	33.739	35.624	40.767	49.111	70.585
N	0.650	2.22E-04	2.81E-02	0.275	2.371	6.574	9.142	11.853	17.374	25.229	32.171	36.262	38.156	43.292	51.530	72.302
N	1.000	5.03E-04	4.84E-02	0.413	3.113	8.063	10.961	13.956	19.908	28.132	35.226	39.347	41.242	46.340	54.413	74.297
N	1.500	1.13E-03	8.34E-02	0.621	4.083	9.883	13.135	16.425	22.801	31.358	38.562	42.685	44.568	49.594	57.448	76.341
N	2.500	3.18E-03	0.166	1.040	5.759	12.791	16.519	20.188	27.078	35.982	43.245	47.324	49.169	54.046	61.538	79.012
P	0.015	3.97E-07	4.14E-04	1.16E-02	0.288	1.352	2.241	3.345	6.054	10.854	15.929	19.263	20.889	25.554	33.799	58.556
P	0.065	1.92E-06	1.18E-03	2.55E-02	0.487	2.004	3.181	4.583	7.871	13.390	18.975	22.548	24.269	29.138	37.540	61.712
P	0.100	4.93E-06	2.22E-03	4.09E-02	0.666	2.537	3.922	5.534	9.209	15.183	21.071	24.777	26.548	31.519	39.975	63.682
P	0.150	9.76E-06	3.50E-03	5.76E-02	0.837	3.010	4.565	6.345	10.321	16.633	22.734	26.530	28.335	33.367	41.840	65.150
P	0.250	2.62E-05	6.76E-03	9.43E-02	1.163	3.853	5.686	7.731	12.169	18.975	25.372	29.285	31.130	36.230	44.688	67.331
P	0.400	5.38E-05	1.09E-02	0.135	1.478	4.612	6.671	8.926	13.717	20.883	27.481	31.468	33.336	38.467	46.882	68.964
P	0.650	1.21E-04	1.88E-02	0.203	1.938	5.652	7.992	10.503	15.708	23.275	30.080	34.134	36.021	41.164	49.493	70.859
P	1.000	2.73E-04	3.22E-02	0.304	2.538	6.919	9.567	12.349	17.977	25.928	32.911	37.012	38.908	44.037	52.238	72.797
P	1.500	7.58E-04	6.37E-02	0.507	3.570	8.937	12.010	15.153	21.321	29.718	36.874	41.000	42.891	47.957	55.926	75.323
Q	0.010	1.04E-07	1.70E-04	5.95E-03	0.184	0.967	1.665	2.559	4.843	9.080	13.728	16.849	18.388	22.856	30.913	56.000
Q	0.040	5.03E-07	4.85E-04	1.31E-02	0.311	1.434	2.362	3.506	6.296	11.200	16.351	19.721	21.362	26.060	34.333	59.017
Q	0.065	1.29E-06	9.08E-04	2.09E-02	0.426	1.815	2.912	4.233	7.366	12.699	18.155	21.669	23.367	28.188	36.558	60.899
Q	0.100	2.55E-06	1.43E-03	2.94E-02	0.535	2.153	3.389	4.852	8.254	13.910	19.587	23.201	24.938	29.839	38.262	62.302
Q	0.150	6.85E-06	2.76E-03	4.82E-02	0.743	2.755	4.220	5.911	9.729	15.865	21.856	25.607	27.395	32.396	40.863	64.385
Q	0.250	1.40E-05	4.46E-03	6.90E-02	0.944	3.296	4.949	6.823	10.965	17.458	23.670	27.512	29.332	34.392	42.865	65.943
Q	0.400	3.16E-05	7.66E-03	0.104	1.237	4.037	5.926	8.025	12.552	19.452	25.902	29.836	31.688	36.797	45.247	67.751
Q	0.650	7.08E-05	1.31E-02	0.155	1.619	4.939	7.090	9.430	14.359	21.661	28.332	32.343	34.219	39.356	47.747	69.597
Q	1.000	1.96E-04	2.59E-02	0.258	2.274	6.371	8.891	11.560	17.015	24.812	31.726	35.811	37.704	42.842	51.101	72.001
R	0.025	1.23E-07	1.89E-04	6.45E-03	0.195	1.008	1.726	2.644	4.977	9.280	13.979	17.127	18.677	23.170	31.252	56.307
R	0.040	3.15E-07	3.54E-04	1.03E-02	0.266	1.275	2.128	3.192	5.822	10.521	15.521	18.818	20.429	25.061	33.276	58.102
R	0.065	6.23E-07	5.59E-04	1.45E-02	0.334	1.513	2.477	3.659	6.524	11.524	16.744	20.147	21.801	26.528	34.826	59.439
R	0.100	1.67E-06	1.08E-03	2.38E-02	0.464	1.935	3.083	4.456	7.689	13.142	18.682	22.234	23.947	28.799	37.191	61.424
R	0.150	3.42E-06	1.74E-03	3.41E-02	0.590	2.315	3.615	5.143	8.664	14.460	20.230	23.886	25.638	30.571	39.011	62.909
R	0.250	7.68E-06	2.98E-03	5.11E-02	0.772	2.835	4.328	6.047	9.916	16.108	22.135	25.901	27.694	32.705	41.175	64.630
R	0.400	1.72E-05	5.10E-03	7.63E-02	1.010	3.466	5.176	7.104	11.340	17.934	24.206	28.072	29.901	34.975	43.445	66.388
R	0.650	4.74E-05	1.00E-02	0.127	1.417	4.468	6.486	8.703	13.430	20.533	27.097	31.071	32.936	38.062	46.487	68.673

TABLE 1C

100t/μ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	56.010	112.180	137.903	149.787	147.319	145.016	142.620	138.099	132.476	128.130	125.783	124.743	122.053	118.079	109.448
B	4.000	16.596	49.858	75.065	99.858	108.690	110.668	111.822	112.758	112.642	111.932	111.377	111.097	110.287	108.881	105.099
C	2.500	3.585	17.949	34.887	59.915	74.098	78.727	82.303	87.342	91.825	94.407	95.552	96.010	97.065	98.307	99.865
C	10.000	20.487	57.375	83.403	107.122	114.568	115.972	116.634	116.787	115.851	114.582	113.748	113.349	112.240	110.421	105.839

TABLE 1C

100t/μ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
D	1.500	0.875	7.011	17.238	37.447	52.085	57.550	62.079	69.050	76.087	80.717	82.986	83.946	86.304	89.487	95.280
D	6.500	4.291	20.235	38.169	63.616	77.505	81.937	85.317	89.999	94.053	96.312	97.286	97.669	98.530	99.493	100.465
D	10.000	12.789	41.908	65.896	91.551	101.836	104.443	106.144	107.966	108.796	108.738	108.512	108.374	107.918	107.007	104.190
E	1.000	0.204	2.655	8.322	23.044	36.189	41.637	46.391	54.167	62.657	68.656	71.738	73.072	76.440	81.206	90.764
E	4.000	0.917	7.231	17.642	38.029	52.692	58.145	62.657	69.585	76.559	81.133	83.371	84.317	86.638	89.764	95.427
E	6.500	2.450	13.929	28.845	52.780	67.376	72.346	76.274	81.976	87.284	90.500	91.986	92.594	94.036	95.845	98.607
E	10.000	5.299	23.290	42.415	68.250	81.702	85.869	88.994	93.220	96.736	98.596	99.360	99.651	100.278	100.902	101.174
F	0.650	5.60E-02	1.122	4.361	14.979	26.197	31.243	35.825	43.671	52.740	59.472	63.041	64.610	68.635	74.503	86.937
F	2.500	0.241	2.964	9.038	24.348	37.714	43.193	47.949	55.679	64.052	69.927	72.932	74.231	77.499	82.105	91.265
F	4.000	0.611	5.516	14.400	33.215	47.605	53.128	57.769	65.031	72.524	77.554	80.053	81.118	83.755	87.366	94.144
F	6.500	1.244	8.866	20.555	42.108	56.876	62.232	66.607	73.221	79.743	83.936	85.959	86.807	88.873	91.612	96.404
F	10.000	3.747	18.486	35.667	60.804	74.921	79.504	83.034	87.987	92.368	94.871	95.975	96.415	97.423	98.597	100.012
G	0.400	1.37E-02	0.438	2.155	9.362	18.415	22.839	27.022	34.525	43.701	50.848	54.750	56.491	61.026	67.818	82.946
G	1.500	5.70E-02	1.135	4.399	15.065	26.310	31.363	35.948	43.796	52.861	59.586	63.149	64.716	68.734	74.588	86.987
G	2.500	0.140	2.066	6.894	20.327	32.939	38.296	43.027	50.874	59.591	65.844	69.088	70.500	74.079	79.194	89.633
G	4.000	0.275	3.242	9.667	25.466	39.005	44.504	49.257	56.942	65.212	70.981	73.921	75.189	78.373	82.845	91.676
G	6.500	0.764	6.404	16.105	35.788	50.345	55.837	60.414	67.503	74.721	79.507	81.865	82.866	85.332	88.680	94.849
G	10.000	1.676	10.814	23.857	46.505	61.275	66.492	70.697	76.950	82.975	86.761	88.559	89.306	91.108	93.450	97.367
H	0.250	3.58E-03	0.179	1.103	5.991	13.177	16.961	20.674	27.620	36.556	43.820	47.889	49.728	54.584	62.027	79.325
H	1.000	1.47E-02	0.459	2.232	9.585	18.743	23.200	27.406	34.934	44.114	51.249	55.138	56.873	61.387	68.139	83.141
H	1.500	3.54E-02	0.826	3.466	12.853	23.357	28.212	32.682	40.454	49.608	56.515	60.212	61.846	66.059	72.257	85.617
H	2.500	6.82E-02	1.280	4.813	15.998	27.523	32.644	37.268	45.132	54.147	60.792	64.298	65.837	69.774	75.490	87.512
H	4.000	0.182	2.457	7.852	22.169	35.153	40.575	45.325	53.128	61.694	67.775	70.909	72.268	75.703	80.580	90.413
H	6.500	0.380	4.022	11.361	28.360	42.285	47.816	52.544	60.091	68.082	73.575	76.347	77.537	80.511	84.649	92.668
H	10.000	0.909	7.190	17.566	37.921	52.579	58.034	62.550	69.485	76.471	81.056	83.300	84.248	86.576	89.712	95.400
J	0.150	8.75E-04	7.01E-02	0.545	3.745	9.262	12.399	15.594	21.835	30.291	37.465	41.591	43.479	48.532	56.462	75.683
J	0.650	3.54E-03	0.178	1.097	5.967	13.137	16.916	20.624	27.564	36.497	43.761	47.832	49.671	54.529	61.978	79.294
J	1.000	8.44E-03	0.318	1.693	7.970	16.322	20.516	24.535	31.856	40.977	48.193	52.170	53.953	58.621	65.671	81.622
J	1.500	1.61E-02	0.488	2.336	9.880	19.174	23.674	27.909	35.467	44.653	51.770	55.642	57.367	61.854	68.553	83.394
J	2.500	4.17E-02	0.921	3.762	13.573	24.332	29.257	33.769	41.572	50.702	57.551	61.205	62.817	66.966	73.049	86.085
J	4.000	8.49E-02	1.480	5.369	17.206	29.068	34.268	38.932	46.805	55.747	62.285	65.718	67.221	71.056	76.597	88.151
J	6.500	0.194	2.569	8.117	22.665	35.741	41.179	45.932	53.720	62.243	68.277	71.382	72.727	76.123	80.937	90.614
J	10.000	0.455	4.532	12.427	30.107	44.223	49.760	54.462	61.914	69.729	75.055	77.728	78.873	81.723	85.666	93.224
K	0.100	2.29E-04	2.87E-02	0.279	2.397	6.627	9.208	11.930	17.468	25.339	32.287	36.380	38.274	43.409	51.641	72.380
K	0.400	9.22E-04	7.26E-02	0.560	3.810	9.384	12.543	15.757	22.026	30.503	37.683	41.809	43.696	48.744	56.659	75.815
K	0.650	2.18E-03	0.129	0.861	5.078	11.638	15.189	18.719	25.426	34.214	41.468	45.570	47.431	52.371	60.008	78.023
K	1.000	4.13E-03	0.197	1.184	6.279	13.648	17.499	21.263	28.275	37.248	44.510	48.567	50.399	55.227	62.612	79.698
K	1.500	1.05E-02	0.368	1.892	8.584	17.256	21.556	25.652	33.060	42.211	49.400	53.344	55.109	59.718	66.653	82.230
K	2.500	2.11E-02	0.586	2.680	10.826	20.536	25.162	29.484	37.127	46.317	53.373	57.190	58.887	63.285	69.819	84.160
K	4.000	4.72E-02	1.001	4.003	14.147	25.099	30.075	34.618	42.441	51.548	58.351	61.970	63.564	67.662	73.656	86.442
K	6.500	1.07E-01	1.726	6.023	18.577	30.789	36.065	40.765	48.635	57.483	63.898	67.247	68.710	72.431	77.781	88.830
K	10.000	3.10E-01	3.513	10.265	26.505	40.193	45.708	50.454	58.093	66.264	71.934	74.813	76.053	79.161	83.511	92.043
L	0.065	5.60E-05	1.12E-02	0.138	1.498	4.659	6.731	8.999	13.810	20.996	27.605	31.595	33.465	38.596	47.008	69.057
L	0.250	2.24E-04	2.83E-02	0.276	2.378	6.589	9.160	11.874	17.400	25.259	32.203	36.294	38.189	43.324	51.560	72.323
L	0.400	5.28E-04	5.00E-02	0.423	3.164	8.162	11.081	14.094	20.071	28.316	35.418	39.540	41.435	46.530	54.591	74.418
L	0.650	9.93E-04	7.63E-02	0.581	3.906	9.560	12.753	15.994	22.302	30.807	37.997	42.122	44.007	49.048	56.942	76.004
L	1.000	2.51E-03	0.142	0.924	5.324	12.059	15.676	19.258	26.035	34.868	42.127	46.221	48.077	52.994	60.578	78.393
L	1.500	5.00E-03	0.224	1.302	6.692	14.316	18.259	22.092	29.191	38.210	45.466	49.505	51.325	56.114	63.415	80.208
L	2.500	1.10E-02	0.379	1.931	8.701	17.432	21.752	25.861	33.285	42.441	49.623	53.562	55.323	59.920	66.834	82.341
L	4.000	2.43E-02	0.644	2.875	11.347	21.272	25.963	30.327	38.010	47.195	54.215	58.002	59.682	64.032	70.478	84.556
L	6.500	6.80E-02	1.277	4.805	15.979	27.499	32.618	37.241	45.105	54.121	60.768	64.275	65.814	69.753	75.472	87.501
M	0.040	1.43E-05	4.52E-03	6.98E-02	0.951	3.314	4.972	6.852	11.004	17.508	23.726	27.570	29.391	34.453	42.926	65.990
M	0.150	5.72E-05	1.14E-02	0.139	1.508	4.683	6.763	9.037	13.858	21.055	27.669	31.662	33.532	38.664	47.074	69.105
M	0.250	1.34E-04	2.01E-02	0.214	2.005	5.798	8.176	10.719	15.978	23.594	30.423	34.484	36.372	41.515	49.831	71.100
M	0.400	2.52E-04	3.06E-02	0.293	2.473	6.786	9.403	12.158	17.746	25.660	32.628	36.725	38.620	43.752	51.968	72.608
M	0.650	6.35E-04	5.66E-02	0.464	3.364	8.547	11.544	14.623	20.697	29.021	36.151	40.276	42.169	47.250	55.266	74.877
M	1.000	1.25E-03	8.91E-02	0.652	4.221	10.133	13.429	16.756	23.183	31.778	38.991	43.113	44.993	50.008	57.831	76.595
M	1.500	2.73E-03	0.150	0.963	5.472	12.311	15.967	19.580	26.396	35.255	42.516	46.605	48.457	53.361	60.913	78.610
M	2.500	5.98E-03	0.253	1.425	7.108	14.978	19.007	22.905	30.083	39.142	46.387	50.408	52.216	56.965	64.183	80.692
M	4.000	1.63E-02	0.494	2.356	9.936	19.256	23.764	28.005	35.568	44.754	51.868	55.737	57.461	61.942	68.631	83.441
N	0.025	3.58E-06	1.79E-03	3.49E-02	0.599	2.343	3.654	5.193	8.734	14.553	20.339	24.002	25.757	30.695	39.137	63.010
N	0.100	1.43E-05	4.51E-03	6.96E-02	0.950	3.310	4.968	6.846	10.996	17.498	23.715	27.559	29.380	34.441	42.914	65.981
N	0.150	3.35E-05	7.96E-03	0.107	1.262	4.096	6.003	8.118	12.674	19.603	26.070	30.010	31.864	36.976	45.422	67.882
N	0.250	6.27E-05	1.21E-02	0.146	1.555	4.792	6.902	9.205	14.073	21.315	27.954	31.955	33.827	38.962	47.364	69.318
N	0.400	1.57E-04	2.23E-02	0.231	2.113	6.031	8.467	11.063	16.403	24.095	30.960	35.032	36.923	42.064	50.358	71.475

TABLE 1C

100t/μ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
N	0.650	3.10E-04	3.51E-02	0.324	2.648	7.143	9.842	12.667	18.363	26.371	33.379	37.486	39.382	44.506	52.683	73.106
N	1.000	6.71E-04	5.87E-02	0.477	3.427	8.666	11.687	14.786	20.888	29.235	36.374	40.499	42.392	47.468	55.470	75.015
N	1.500	1.46E-03	9.86E-02	0.704	4.440	10.524	13.889	17.271	23.776	32.426	39.653	43.771	45.647	50.643	58.419	76.983
N	2.500	3.93E-03	0.191	1.155	6.179	13.485	17.313	21.060	28.049	37.010	44.272	48.334	50.168	55.006	62.411	79.570
P	0.015	8.75E-07	7.01E-04	1.72E-02	0.374	1.647	2.671	3.917	6.905	12.059	17.390	20.845	22.520	27.292	35.625	60.117
P	0.065	3.48E-06	1.76E-03	3.44E-02	0.593	2.326	3.631	5.163	8.692	14.497	20.274	23.932	25.685	30.620	39.061	62.949
P	0.100	8.15E-06	3.10E-03	5.26E-02	0.788	2.878	4.386	6.121	10.016	16.239	22.284	26.057	27.854	32.870	41.341	64.760
P	0.150	1.53E-05	4.71E-03	7.20E-02	0.971	3.366	5.042	6.938	11.119	17.654	23.891	27.743	29.567	34.633	43.105	66.128
P	0.250	3.82E-05	8.69E-03	0.114	1.318	4.233	6.182	8.335	12.956	19.950	26.454	30.407	32.265	37.383	45.822	68.180
P	0.400	7.50E-05	1.36E-02	0.160	1.651	5.011	7.182	9.539	14.498	21.828	28.514	32.530	34.407	39.546	47.931	69.731
P	0.650	1.62E-04	2.28E-02	0.234	2.134	6.074	8.522	11.127	16.482	24.188	31.060	35.133	37.024	42.166	50.455	71.544
P	1.000	3.50E-04	3.81E-02	0.345	2.760	7.368	10.117	12.985	18.746	26.811	33.843	37.954	39.850	44.968	53.120	73.409
P	1.500	9.37E-04	7.34E-02	0.564	3.831	9.421	12.588	15.807	22.085	30.567	37.750	41.876	43.762	48.809	56.719	75.855
Q	0.010	2.29E-07	2.87E-04	8.83E-03	0.240	1.179	1.984	2.997	5.524	10.088	14.986	18.233	19.824	24.411	32.583	57.493
Q	0.040	9.12E-07	7.21E-04	1.76E-02	0.380	1.664	2.696	3.949	6.953	12.126	17.470	20.931	22.609	27.386	35.724	60.200
Q	0.065	2.13E-06	1.27E-03	2.69E-02	0.504	2.058	3.257	4.682	8.011	13.581	19.201	22.789	24.516	29.397	37.807	61.931
Q	0.100	3.99E-06	1.93E-03	3.68E-02	0.621	2.407	3.743	5.306	8.892	14.764	20.584	24.261	26.022	30.971	39.419	63.237
Q	0.150	9.98E-06	3.55E-03	5.82E-02	0.843	3.026	4.587	6.373	10.359	16.681	22.789	26.588	28.394	33.427	41.900	65.197
Q	0.250	1.96E-05	5.56E-03	8.15E-02	1.055	3.581	5.328	7.291	11.589	18.248	24.559	28.440	30.274	35.357	43.824	66.677
Q	0.400	4.22E-05	9.28E-03	0.120	1.362	4.339	6.319	8.501	13.171	20.215	26.746	30.710	32.571	37.693	46.125	68.406
Q	0.650	9.10E-05	1.55E-02	0.176	1.761	5.259	7.497	9.916	14.973	22.399	29.134	33.166	35.047	40.189	48.553	70.183
Q	1.000	2.42E-04	2.98E-02	0.287	2.440	6.717	9.318	12.059	17.625	25.520	32.480	36.575	38.470	43.603	51.826	72.509
R	0.025	2.23E-07	2.81E-04	8.69E-03	0.237	1.170	1.970	2.979	5.496	10.047	14.936	18.178	19.767	24.349	32.518	57.435
R	0.040	5.21E-07	4.96E-04	1.33E-02	0.315	1.447	2.380	3.531	6.332	11.252	16.415	19.790	21.433	26.136	34.413	59.086
R	0.065	9.73E-07	7.53E-04	1.82E-02	0.388	1.691	2.735	4.001	7.028	12.231	17.596	21.068	22.749	27.535	35.879	60.331
R	0.100	2.43E-06	1.39E-03	2.87E-02	0.526	2.126	3.352	4.804	8.186	13.818	19.479	23.086	24.820	29.716	38.135	62.199
R	0.150	4.76E-06	2.17E-03	4.02E-02	0.659	2.515	3.892	5.496	9.157	15.114	20.991	24.692	26.462	31.429	39.884	63.609
R	0.250	1.02E-05	3.61E-03	5.90E-02	0.850	3.047	4.615	6.407	10.405	16.740	22.856	26.659	28.466	33.502	41.975	65.255
R	0.400	2.21E-05	6.03E-03	8.66E-02	1.098	3.691	5.473	7.470	11.825	18.545	24.891	28.786	30.625	35.715	44.179	66.946
R	0.650	5.85E-05	1.16E-02	0.141	1.520	4.710	6.797	9.078	13.912	21.120	27.740	31.735	33.605	38.738	47.146	69.158

TABLE 2A

100h/(t) Products at the Acceptable Quality Level (normal inspection)
for the MIL-STD-105D Plans

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

AQL p'(%)	Shape Parameter, β														
	0.333	0.500	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
0.010	3.33E-03	5.00E-03	6.67E-03	1.00E-02	1.33E-02	1.50E-02	1.67E-02	2.00E-02	2.50E-02	3.00E-02	3.33E-02	3.50E-02	4.00E-02	5.00E-02	0.100
0.015	5.00E-03	7.50E-03	1.00E-02	1.50E-02	2.00E-02	2.25E-02	2.50E-02	3.00E-02	3.75E-02	4.50E-02	5.00E-02	5.25E-02	6.00E-02	7.50E-02	0.150
0.025	8.33E-03	1.25E-02	1.67E-02	2.50E-02	3.33E-02	3.75E-02	4.17E-02	5.00E-02	6.25E-02	7.50E-02	8.33E-02	8.75E-02	0.100	0.125	0.250
0.040	1.33E-02	2.00E-02	2.67E-02	4.00E-02	5.33E-02	6.00E-02	6.67E-02	8.00E-02	0.100	0.120	0.133	0.140	0.160	0.200	0.400
0.065	2.17E-02	3.25E-02	4.33E-02	6.50E-02	0.087	9.75E-02	0.108	0.130	0.163	0.195	0.217	0.228	0.260	0.325	0.650
0.100	3.34E-02	5.00E-02	6.67E-02	0.100	0.133	0.150	0.167	0.200	0.250	0.300	0.334	0.350	0.400	0.500	1.001
0.150	5.00E-02	7.51E-02	0.100	0.150	0.200	0.225	0.250	0.300	0.375	0.450	0.500	0.525	0.600	0.751	1.501
0.250	8.34E-02	0.125	0.167	0.250	0.334	0.375	0.417	0.501	0.626	0.751	0.834	0.876	1.001	1.252	2.503
0.400	0.134	0.200	0.267	0.401	0.534	0.601	0.668	0.802	1.002	1.202	1.336	1.403	1.603	2.004	4.008
0.650	0.217	0.326	0.435	0.652	0.869	0.978	1.087	1.304	1.630	1.956	2.174	2.282	2.608	3.261	6.521
1.000	0.335	0.503	0.670	1.005	1.340	1.508	1.675	2.010	2.513	3.015	3.350	3.518	4.020	5.025	10.050
1.500	0.504	0.756	1.008	1.511	2.015	2.267	2.519	3.023	3.778	4.534	5.038	5.290	6.045	7.557	15.114
2.500	0.844	1.266	1.688	2.532	3.376	3.798	4.220	5.064	6.329	7.595	8.439	8.861	10.127	12.659	25.318
4.000	1.361	2.041	2.721	4.082	5.443	6.123	6.804	8.164	10.205	12.247	13.607	14.288	16.329	20.411	40.822
6.500	2.240	3.360	4.481	6.721	8.961	10.081	11.201	13.442	16.802	20.163	22.403	23.523	26.883	33.604	67.209
10.000	3.512	5.268	7.024	10.536	14.048	15.804	17.560	21.072	26.340	31.608	35.120	36.876	42.144	52.680	105.361

TABLE 2B

100h(t) Products at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	38.376	57.565	76.753	115.129	153.506	172.694	191.882	230.258	287.823	345.388	383.764	402.952	460.517	575.646	1151.292
B	4.000	25.584	38.377	51.169	76.753	102.337	115.130	127.922	153.506	191.883	230.259	255.843	268.636	307.012	383.765	767.530
C	2.500	15.351	23.026	30.701	46.052	61.402	69.077	76.753	92.103	115.129	138.155	153.505	161.181	184.207	230.258	460.516
C	10.000	29.227	43.840	58.454	87.681	116.908	131.521	146.135	175.362	219.202	263.043	292.270	306.883	350.724	438.405	876.809
D	1.500	9.594	14.391	19.188	28.782	38.376	43.173	47.970	57.565	71.956	86.347	95.941	100.738	115.129	143.911	287.823
D	6.500	17.376	26.064	34.753	52.129	69.505	78.193	86.882	104.258	130.322	156.387	173.763	182.451	208.516	260.645	521.290
D	10.000	25.755	38.633	51.510	77.265	103.021	115.898	128.776	154.531	193.164	231.796	257.552	270.429	309.062	386.327	772.655
E	1.000	5.904	8.856	11.808	17.712	23.616	26.568	29.520	35.425	44.281	53.137	59.041	61.993	70.849	88.561	177.123
E	4.000	10.392	15.588	20.783	31.175	41.567	46.763	51.959	62.350	77.938	93.525	103.917	109.113	124.700	155.876	311.751
E	6.500	14.865	22.297	29.729	44.594	59.458	66.891	74.323	89.188	111.484	133.781	148.646	156.078	178.375	222.969	445.938
E	10.000	19.582	29.373	39.164	58.746	78.328	88.119	97.910	117.492	146.865	176.238	195.820	205.611	234.984	293.730	587.459
F	0.650	3.838	5.756	7.675	11.513	15.351	17.269	19.188	23.026	28.782	34.539	38.376	40.295	46.052	57.564	115.129
F	2.500	6.654	9.981	13.308	19.962	26.616	29.943	33.271	39.925	49.906	59.887	66.541	69.868	79.849	99.812	199.623
F	4.000	9.358	14.036	18.715	28.073	37.430	42.109	46.788	56.145	70.182	84.218	93.576	98.254	112.291	140.363	280.727
F	6.500	12.089	18.134	24.178	36.267	48.356	54.401	60.446	72.535	90.668	108.802	120.891	126.936	145.069	181.337	362.673
F	10.000	17.865	26.798	35.730	53.596	71.461	80.394	89.326	107.191	133.989	160.787	178.652	187.585	214.383	267.978	535.957
G	0.400	2.399	3.598	4.797	7.196	9.594	10.793	11.993	14.391	17.989	21.587	23.985	25.184	28.782	35.978	71.956
G	1.500	4.117	6.176	8.235	12.352	16.469	18.528	20.586	24.704	30.880	37.056	41.173	43.232	49.408	61.759	123.519
G	2.500	5.728	8.591	11.455	17.183	22.910	25.774	28.638	34.365	42.957	51.548	57.275	60.139	68.730	85.913	171.826
G	4.000	7.313	10.969	14.626	21.939	29.252	32.908	36.564	43.877	54.847	65.816	73.129	76.785	87.755	109.693	219.387
G	6.500	10.521	15.781	21.042	31.563	42.084	47.344	52.605	63.126	78.907	94.689	105.209	110.470	126.251	157.814	315.628
G	10.000	13.871	20.807	27.742	41.613	55.484	62.420	69.356	83.227	104.033	124.840	138.711	145.647	166.453	208.067	416.133
H	0.250	1.535	2.303	3.070	4.605	6.140	6.908	7.675	9.210	11.513	13.816	15.351	16.118	18.421	23.026	46.052
H	1.000	2.620	3.929	5.239	7.859	10.479	11.788	13.098	15.718	19.647	23.577	26.197	27.506	31.436	39.295	78.590
H	1.500	3.622	5.433	7.244	10.865	14.487	16.298	18.109	21.731	27.163	32.596	36.218	38.029	43.462	54.327	108.654
H	2.500	4.594	6.892	9.189	13.783	18.378	20.675	22.972	27.567	34.458	41.350	45.945	48.242	55.133	68.917	137.834
H	4.000	6.518	9.778	13.037	19.555	26.073	29.333	32.592	39.110	48.888	58.665	65.184	68.443	78.220	97.775	195.551
H	6.500	8.462	12.693	16.923	25.385	33.847	38.078	42.308	50.770	63.463	76.155	84.617	88.848	101.540	126.925	253.850
H	10.000	11.477	17.216	22.955	34.432	45.909	51.648	57.387	68.864	86.080	103.296	114.773	120.512	137.728	172.160	344.319
J	0.150	0.959	1.439	1.919	2.878	3.838	4.317	4.797	5.756	7.196	8.635	9.594	10.074	11.513	14.391	28.782
J	0.650	1.631	2.446	3.262	4.893	6.524	7.339	8.155	9.786	12.232	14.679	16.310	17.125	19.572	24.465	48.929
J	1.000	2.246	3.369	4.492	6.738	8.984	10.107	11.230	13.476	16.845	20.214	22.460	23.583	26.952	33.690	67.380
J	1.500	2.838	4.256	5.675	8.513	11.350	12.769	14.188	17.025	21.281	25.538	28.375	29.794	34.050	42.563	85.126
J	2.500	3.991	5.987	7.983	11.974	15.965	17.961	19.957	23.948	29.935	35.922	39.914	41.909	47.896	59.870	119.741
J	4.000	5.134	7.701	10.269	15.403	20.537	23.104	25.671	30.806	38.507	46.208	51.343	53.910	61.611	77.014	154.028
J	6.500	6.861	10.292	13.723	20.584	27.445	30.876	34.307	41.168	51.460	61.752	68.614	72.044	82.336	102.920	205.841
J	10.000	9.227	13.841	18.455	27.682	36.910	41.524	46.137	55.365	69.206	83.047	92.275	96.888	110.730	138.412	276.824
K	0.100	0.614	0.921	1.228	1.842	2.456	2.763	3.070	3.684	4.605	5.526	6.140	6.447	7.368	9.210	18.421
K	0.400	1.041	1.562	2.083	3.124	4.166	4.686	5.207	6.249	7.811	9.373	10.414	10.935	12.497	15.622	31.243
K	0.650	1.431	2.146	2.862	4.292	5.723	6.439	7.154	8.585	10.731	12.877	14.308	15.023	17.170	21.462	42.924
K	1.000	1.803	2.705	3.607	5.410	7.213	8.115	9.017	10.820	13.525	16.230	18.033	18.935	21.640	27.050	54.100
K	1.500	2.524	3.786	5.049	7.573	10.097	11.359	12.621	15.146	18.932	22.719	25.243	26.505	30.291	37.864	75.729
K	2.500	3.231	4.846	6.461	9.692	12.923	14.538	16.153	19.384	24.230	29.076	32.307	33.922	38.768	48.460	96.920
K	4.000	4.283	6.425	8.566	12.849	17.132	19.274	21.415	25.698	32.123	38.547	42.830	44.972	51.396	64.245	128.490
K	6.500	5.695	8.542	11.389	17.084	22.778	25.625	28.473	34.167	42.709	51.251	56.945	59.792	68.334	85.418	170.835
K	10.000	8.233	12.350	16.466	24.700	32.933	37.050	41.166	49.399	61.749	74.099	82.332	86.449	98.799	123.498	246.997
L	0.065	0.384	0.576	0.768	1.151	1.535	1.727	1.919	2.303	2.878	3.454	3.838	4.030	4.605	5.756	11.513
L	0.250	0.650	0.975	1.300	1.950	2.600	2.925	3.250	3.900	4.874	5.849	6.499	6.824	7.799	9.749	19.498
L	0.400	0.892	1.337	1.783	2.675	3.566	4.012	4.458	5.349	6.686	8.024	8.915	9.361	10.698	13.373	26.746
L	0.650	1.122	1.683	2.244	3.366	4.488	5.049	5.610	6.732	8.414	10.097	11.219	11.780	13.463	16.829	33.658
L	1.000	1.565	2.348	3.131	4.696	6.262	7.045	7.827	9.393	11.741	14.089	15.655	16.438	18.786	23.482	46.964
L	1.500	1.997	2.996	3.994	5.991	7.988	8.987	9.985	11.982	14.978	17.974	19.971	20.969	23.965	29.956	59.912
L	2.500	2.634	3.952	5.269	7.903	10.538	11.855	13.172	15.806	19.758	23.710	26.344	27.661	31.613	39.516	79.032
L	4.000	3.478	5.217	6.957	10.435	13.913	15.652	17.392	20.870	26.087	31.305	34.783	36.522	41.740	52.175	104.349
L	6.500	4.964	7.446	9.928	14.892	19.855	22.337	24.819	29.783	37.229	44.675	49.638	52.120	59.566	74.458	148.915
M	0.040	0.244	0.365	0.487	0.731	0.975	1.096	1.218	1.462	1.827	2.193	2.437	2.558	2.924	3.655	7.310
M	0.150	0.412	0.618	0.825	1.237	1.649	1.855	2.061	2.474	3.092	3.710	4.123	4.329	4.947	6.184	12.368
M	0.250	0.565	0.848	1.130	1.695	2.260	2.543	2.825	3.390	4.238	5.085	5.650	5.933	6.780	8.475	16.950
M	0.400	0.710	1.066	1.421	2.131	2.841	3.197	3.552	4.262	5.328	6.393	7.104	7.459	8.524	10.655	21.311
M	0.650	0.989	1.484	1.979	2.968	3.957	4.452	4.947	5.936	7.420	8.904	9.893	10.388	11.872	14.840	29.680
M	1.000	1.260	1.890	2.519	3.779	5.039	5.669	6.298	7.558	9.448	11.337	12.597	13.227	15.116	18.895	37.790
M	1.500	1.657	2.485	3.314	4.970	6.627	7.456	8.284	9.941	12.426	14.911	16.568	17.397	19.882	24.852	49.705
M	2.500	2.179	3.268	4.358	6.537	8.715	9.805	10.894	13.073	16.341	19.610	21.788	22.878	26.146	32.683	65.365
M	4.000	3.087	4.630	6.174	9.260	12.347	13.891	15.434	18.521	23.151	27.781	30.868	32.411	37.042	46.302	92.604
N	0.025	0.154	0.230	0.307	0.461	0.614	0.691	0.768	0.921	1.151	1.382	1.535	1.612	1.842	2.303	4.605

TABLE 2B

100h(t) Products at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
N	0.100	0.260	0.389	0.519	0.779	1.038	1.168	1.298	1.557	1.947	2.336	2.596	2.726	3.115	3.894	7.787
N	0.150	0.356	0.533	0.711	1.067	1.422	1.600	1.778	2.133	2.667	3.200	3.555	3.733	4.266	5.333	10.666
N	0.250	0.447	0.670	0.893	1.340	1.787	2.010	2.234	2.680	3.350	4.021	4.467	4.691	5.361	6.701	13.402
N	0.400	0.621	0.932	1.243	1.864	2.486	2.796	3.107	3.729	4.661	5.593	6.214	6.525	7.457	9.321	18.643
N	0.650	0.790	1.185	1.581	2.371	3.161	3.556	3.951	4.742	5.927	7.113	7.903	8.298	9.483	11.854	23.708
N	1.000	1.038	1.556	2.075	3.113	4.150	4.669	5.188	6.225	7.782	9.338	10.375	10.894	12.450	15.563	31.126
N	1.500	1.361	2.042	2.722	4.083	5.444	6.125	6.805	8.166	10.208	12.249	13.610	14.291	16.332	20.416	40.831
N	2.500	1.920	2.879	3.839	5.759	7.678	8.638	9.598	11.518	14.397	17.277	19.196	20.156	23.035	28.794	57.588
P	0.015	9.59E-02	0.144	0.192	0.288	0.384	0.432	0.480	0.576	0.720	0.863	0.959	1.007	1.151	1.439	2.878
P	0.065	0.162	0.243	0.324	0.487	0.649	0.730	0.811	0.973	1.216	1.460	1.622	1.703	1.946	2.433	4.865
P	0.100	0.222	0.333	0.444	0.666	0.888	0.999	1.110	1.332	1.665	1.998	2.220	2.331	2.664	3.331	6.661
P	0.150	0.279	0.418	0.558	0.837	1.116	1.255	1.394	1.673	2.092	2.510	2.789	2.928	3.347	4.183	8.367
P	0.250	0.388	0.581	0.775	1.163	1.551	1.744	1.938	2.326	2.907	3.489	3.877	4.070	4.652	5.815	11.630
P	0.400	0.493	0.739	0.985	1.478	1.970	2.217	2.463	2.956	3.695	4.434	4.926	5.172	5.911	7.389	14.778
P	0.650	0.646	0.969	1.292	1.938	2.584	2.907	3.230	3.876	4.845	5.814	6.460	6.783	7.752	9.690	19.380
P	1.000	0.846	1.269	1.692	2.538	3.384	3.807	4.230	5.077	6.346	7.615	8.461	8.884	10.153	12.691	25.383
P	1.500	1.190	1.785	2.380	3.570	4.760	5.355	5.950	7.140	8.925	10.710	11.900	12.496	14.281	17.851	35.701
Q	0.010	6.14E-02	9.21E-02	0.123	0.184	0.246	0.276	0.307	0.368	0.461	0.553	0.614	0.645	0.737	0.921	1.842
Q	0.040	0.104	0.156	0.208	0.311	0.415	0.467	0.519	0.623	0.778	0.934	1.038	1.090	1.245	1.557	3.113
Q	0.065	0.142	0.213	0.284	0.426	0.568	0.639	0.710	0.852	1.065	1.278	1.420	1.491	1.704	2.131	4.261
Q	0.100	0.178	0.268	0.357	0.535	0.713	0.803	0.892	1.070	1.338	1.605	1.784	1.873	2.140	2.676	5.351
Q	0.150	0.248	0.372	0.496	0.743	0.991	1.115	1.239	1.487	1.859	2.230	2.478	2.602	2.974	3.717	7.435
Q	0.250	0.315	0.472	0.630	0.944	1.259	1.416	1.574	1.889	2.361	2.833	3.148	3.305	3.777	4.722	9.443
Q	0.400	0.412	0.619	0.825	1.237	1.650	1.856	2.062	2.475	3.094	3.712	4.125	4.331	4.950	6.187	12.375
Q	0.650	0.540	0.810	1.080	1.619	2.159	2.429	2.699	3.239	4.048	4.858	5.398	5.668	6.477	8.097	16.193
Q	1.000	0.758	1.137	1.516	2.274	3.032	3.411	3.790	4.548	5.685	6.822	7.580	7.959	9.096	11.370	22.739
R	0.025	6.48E-02	9.73E-02	0.130	0.195	0.259	0.292	0.324	0.389	0.486	0.584	0.648	0.681	0.778	0.973	1.945
R	0.040	8.87E-02	0.133	0.177	0.266	0.355	0.399	0.444	0.532	0.666	0.799	0.887	0.932	1.065	1.331	2.662
R	0.065	0.111	0.167	0.223	0.334	0.446	0.501	0.557	0.669	0.836	1.003	1.114	1.170	1.337	1.671	3.343
R	0.100	0.155	0.232	0.310	0.464	0.619	0.696	0.774	0.929	1.161	1.393	1.548	1.625	1.857	2.322	4.643
R	0.150	0.197	0.295	0.393	0.590	0.786	0.884	0.983	1.179	1.474	1.769	1.965	2.064	2.358	2.948	5.896
R	0.250	0.257	0.386	0.515	0.772	1.030	1.158	1.287	1.545	1.931	2.317	2.574	2.703	3.089	3.861	7.723
R	0.400	0.337	0.505	0.673	1.010	1.347	1.515	1.683	2.020	2.525	3.030	3.366	3.535	4.040	5.050	10.099
R	0.650	0.472	0.708	0.944	1.417	1.889	2.125	2.361	2.833	3.542	4.250	4.722	4.958	5.667	7.083	14.167

TABLE 2C

100t/μ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	49.929	74.893	99.858	149.787	199.715	224.680	249.644	299.573	374.467	449.360	499.289	524.253	599.146	748.933	1497.866
B	4.000	33.286	49.929	66.572	99.858	133.144	149.787	166.430	199.715	249.644	299.573	332.859	349.502	399.431	499.289	998.577
C	2.500	19.972	29.957	39.943	59.915	79.886	89.872	99.858	119.829	149.787	179.744	199.715	209.701	239.659	299.573	599.146
C	10.000	35.707	53.561	71.414	107.122	142.829	160.682	178.536	214.243	267.804	321.365	357.072	374.926	428.486	535.608	1071.216
D	1.500	12.482	18.723	24.964	37.447	49.929	56.170	62.411	74.893	93.617	112.340	124.822	131.063	149.787	187.233	374.467
D	6.500	21.205	31.808	42.411	63.616	84.821	95.424	106.027	127.232	159.040	190.848	212.054	222.656	254.464	318.080	636.161
D	10.000	30.517	45.776	61.034	91.551	122.068	137.327	152.585	183.102	228.878	274.653	305.171	320.429	366.205	457.756	915.512
E	1.000	7.681	11.522	15.363	23.044	30.725	34.566	38.407	46.088	57.610	69.132	76.814	80.654	92.176	115.220	230.441
E	4.000	12.676	19.015	25.353	38.029	50.706	57.044	63.382	76.059	95.073	114.088	126.764	133.102	152.117	190.146	380.293
E	6.500	17.593	26.390	35.187	52.780	70.373	79.170	87.966	105.560	131.950	158.340	175.933	184.730	211.120	263.899	527.799
E	10.000	22.750	34.125	45.500	68.250	91.000	102.375	113.750	136.500	170.626	204.751	227.501	238.876	273.001	341.251	682.502
F	0.650	4.993	7.489	9.986	14.979	19.972	22.468	24.964	29.957	37.447	44.936	49.929	52.425	59.915	74.893	149.787
F	2.500	8.116	12.174	16.232	24.348	32.464	36.522	40.580	48.696	60.870	73.045	81.161	85.219	97.393	121.741	243.482
F	4.000	11.072	16.607	22.143	33.215	44.286	49.822	55.358	66.430	83.037	99.644	110.716	116.252	132.859	166.074	332.148
F	6.500	14.036	21.054	28.072	42.108	56.144	63.162	70.180	84.216	105.271	126.325	140.361	147.379	168.433	210.541	421.082
F	10.000	20.268	30.402	40.536	60.804	81.072	91.206	101.340	121.608	152.010	182.412	202.680	212.814	243.216	304.020	608.039
G	0.400	3.121	4.681	6.241	9.362	12.482	14.042	15.603	18.723	23.404	28.085	31.206	32.766	37.447	46.808	93.617
G	1.500	5.022	7.532	10.043	15.065	20.086	22.597	25.108	30.130	37.662	45.195	50.216	52.727	60.259	75.324	150.648

TABLE 2C

100t/μ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
G	2.500	6.776	10.164	13.551	20.327	27.103	30.491	33.879	40.654	50.818	60.981	67.757	71.145	81.309	101.636	203.271
G	4.000	8.489	12.733	16.977	25.466	33.954	38.198	42.443	50.931	63.664	76.397	84.885	89.129	101.862	127.328	254.655
G	6.500	11.929	17.894	23.858	35.788	47.717	53.682	59.646	71.575	89.469	107.363	119.292	125.257	143.151	178.939	357.877
G	10.000	15.502	23.253	31.004	46.505	62.007	69.758	77.509	93.011	116.263	139.516	155.018	162.769	186.021	232.527	465.053
H	0.250	1.997	2.996	3.994	5.991	7.989	8.987	9.986	11.983	14.979	17.974	19.972	20.970	23.966	29.957	59.915
H	1.000	3.195	4.792	6.390	9.585	12.780	14.377	15.975	19.170	23.962	28.754	31.949	33.547	38.339	47.924	95.848
H	1.500	4.284	6.427	8.569	12.853	17.138	19.280	21.422	25.706	32.133	38.559	42.844	44.986	51.413	64.266	128.532
H	2.500	5.333	7.999	10.665	15.998	21.330	23.997	26.663	31.996	39.995	47.993	53.326	55.992	63.991	79.989	159.978
H	4.000	7.390	11.084	14.779	22.169	29.558	33.253	36.948	44.337	55.421	66.506	73.895	77.590	88.674	110.843	221.685
H	6.500	9.453	14.180	18.907	28.360	37.814	42.540	47.267	56.721	70.901	85.081	94.534	99.261	113.441	141.802	283.603
H	10.000	12.640	18.960	25.280	37.921	50.561	56.881	63.201	75.841	94.802	113.762	126.402	132.723	151.683	189.604	379.207
J	0.150	1.248	1.872	2.496	3.745	4.993	5.617	6.241	7.489	9.362	11.234	12.482	13.106	14.979	18.723	37.447
J	0.650	1.989	2.984	3.978	5.967	7.957	8.951	9.946	11.935	14.919	17.902	19.892	20.886	23.870	29.837	59.675
J	1.000	2.657	3.985	5.314	7.970	10.627	11.956	13.284	15.941	19.926	23.911	26.568	27.897	31.882	39.852	79.705
J	1.500	3.293	4.940	6.587	9.880	13.173	14.820	16.466	19.760	24.700	29.639	32.933	34.579	39.519	49.399	98.798
J	2.500	4.524	6.787	9.049	13.573	18.098	20.360	22.622	27.147	33.934	40.720	45.245	47.507	54.294	67.867	135.735
J	4.000	5.735	8.603	11.471	17.206	22.941	25.809	28.677	34.412	43.015	51.618	57.353	60.221	68.824	86.030	172.060
J	6.500	7.555	11.333	15.110	22.665	30.220	33.998	37.775	45.330	56.663	67.995	75.550	79.328	90.660	113.325	226.650
J	10.000	10.036	15.053	20.071	30.107	40.142	45.160	50.178	60.213	75.267	90.320	100.356	105.373	120.427	150.534	301.067
K	0.100	0.799	1.198	1.598	2.397	3.195	3.595	3.994	4.793	5.991	7.190	7.989	8.388	9.586	11.983	23.966
K	0.400	1.270	1.905	2.540	3.810	5.081	5.716	6.351	7.621	9.526	11.431	12.701	13.336	15.242	19.052	38.104
K	0.650	1.693	2.539	3.385	5.078	6.770	7.616	8.463	10.155	12.694	15.233	16.925	17.771	20.310	25.388	50.775
K	1.000	2.093	3.139	4.186	6.279	8.372	9.418	10.465	12.558	15.697	18.837	20.930	21.976	25.116	31.395	62.789
K	1.500	2.861	4.292	5.723	8.584	11.446	12.876	14.307	17.168	21.460	25.752	28.614	30.045	34.337	42.921	85.842
K	2.500	3.609	5.413	7.217	10.826	14.435	16.239	18.044	21.652	27.066	32.479	36.087	37.892	43.305	54.131	108.262
K	4.000	4.716	7.074	9.431	14.147	18.863	21.221	23.578	28.294	35.368	42.441	47.157	49.515	56.588	70.735	141.470
K	6.500	6.192	9.289	12.385	18.577	24.770	27.866	30.962	37.155	46.443	55.732	61.925	65.021	74.309	92.887	185.774
K	10.000	8.835	13.253	17.670	26.505	35.340	39.758	44.175	53.011	66.263	79.516	88.351	92.768	106.021	132.526	265.053
L	0.065	0.499	0.749	0.999	1.498	1.997	2.247	2.496	2.996	3.745	4.494	4.993	5.243	5.991	7.489	14.979
L	0.250	0.793	1.189	1.585	2.378	3.171	3.567	3.963	4.756	5.945	7.134	7.926	8.323	9.512	11.890	23.779
L	0.400	1.055	1.582	2.109	3.164	4.218	4.746	5.273	6.328	7.909	9.491	10.546	11.073	12.655	15.819	31.638
L	0.650	1.302	1.953	2.604	3.906	5.208	5.859	6.510	7.813	9.766	11.719	13.021	13.672	15.625	19.531	39.063
L	1.000	1.775	2.662	3.549	5.324	7.098	7.985	8.873	10.647	13.309	15.971	17.745	18.632	21.294	26.618	53.236
L	1.500	2.231	3.346	4.462	6.692	8.923	10.038	11.154	13.385	16.731	20.077	22.308	23.423	26.769	33.461	66.923
L	2.500	2.900	4.351	5.801	8.701	11.602	13.052	14.502	17.403	21.753	26.104	29.004	30.455	34.805	43.507	87.013
L	4.000	3.782	5.673	7.565	11.347	15.129	17.020	18.911	22.694	28.367	34.041	37.823	39.714	45.387	56.734	113.469
L	6.500	5.326	7.989	10.653	15.979	21.305	23.968	26.631	31.958	39.947	47.936	53.263	55.926	63.915	79.894	159.788
M	0.040	0.317	0.476	0.634	0.951	1.268	1.427	1.585	1.902	2.378	2.853	3.170	3.329	3.804	4.755	9.510
M	0.150	0.503	0.754	1.006	1.508	2.011	2.263	2.514	3.017	3.771	4.525	5.028	5.279	6.034	7.542	15.084
M	0.250	0.668	1.003	1.337	2.005	2.673	3.008	3.342	4.010	5.013	6.015	6.683	7.018	8.020	10.025	20.050
M	0.400	0.824	1.237	1.649	2.473	3.298	3.710	4.122	4.947	6.183	7.420	8.244	8.657	9.893	12.366	24.733
M	0.650	1.121	1.682	2.243	3.364	4.486	5.046	5.607	6.729	8.411	10.093	11.214	11.775	13.457	16.822	33.643
M	1.000	1.407	2.111	2.814	4.221	5.628	6.332	7.035	8.442	10.553	12.664	14.071	14.774	16.885	21.106	42.212
M	1.500	1.824	2.736	3.648	5.472	7.297	8.209	9.121	10.945	13.681	16.417	18.241	19.153	21.890	27.362	54.724
M	2.500	2.369	3.554	4.738	7.108	9.477	10.661	11.846	14.215	17.769	21.323	23.692	24.877	28.431	35.538	71.076
M	4.000	3.312	4.968	6.624	9.936	13.248	14.904	16.560	19.872	24.840	29.808	33.121	34.777	39.745	49.681	99.362
N	0.025	0.200	0.300	0.399	0.599	0.799	0.899	0.999	1.198	1.498	1.797	1.997	2.097	2.397	2.996	5.991
N	0.100	0.317	0.475	0.633	0.950	1.266	1.425	1.583	1.899	2.374	2.849	3.166	3.324	3.799	4.749	9.497
N	0.150	0.421	0.631	0.841	1.262	1.682	1.893	2.103	2.523	3.154	3.785	4.206	4.416	5.047	6.308	12.617
N	0.250	0.518	0.778	1.037	1.555	2.074	2.333	2.592	3.111	3.889	4.666	5.185	5.444	6.222	7.777	15.554
N	0.400	0.704	1.057	1.409	2.113	2.818	3.170	3.522	4.226	5.283	6.340	7.044	7.396	8.453	10.566	21.132
N	0.650	0.883	1.324	1.765	2.648	3.531	3.972	4.414	5.296	6.621	7.945	8.827	9.269	10.593	13.241	26.482
N	1.000	1.142	1.713	2.285	3.427	4.569	5.140	5.711	6.854	8.567	10.281	11.423	11.994	13.707	17.134	34.269
N	1.500	1.480	2.220	2.960	4.440	5.920	6.660	7.400	8.880	11.100	13.320	14.799	15.539	17.759	22.199	44.398
N	2.500	2.060	3.090	4.119	6.179	8.239	9.269	10.298	12.358	15.448	18.537	20.597	21.627	24.716	30.895	61.790
P	0.015	0.125	0.187	0.250	0.374	0.499	0.562	0.624	0.749	0.936	1.123	1.248	1.311	1.498	1.872	3.745
P	0.065	0.198	0.297	0.396	0.593	0.791	0.890	0.989	1.187	1.483	1.780	1.978	2.077	2.373	2.967	5.934
P	0.100	0.263	0.394	0.525	0.788	1.051	1.182	1.313	1.576	1.970	2.364	2.627	2.758	3.152	3.940	7.880
P	0.150	0.324	0.486	0.647	0.971	1.295	1.457	1.618	1.942	2.428	2.913	3.237	3.399	3.884	4.855	9.710
P	0.250	0.439	0.659	0.879	1.318	1.758	1.977	2.197	2.637	3.296	3.955	4.394	4.614	5.273	6.591	13.183
P	0.400	0.550	0.825	1.101	1.651	2.201	2.476	2.751	3.302	4.127	4.952	5.503	5.778	6.603	8.254	16.508
P	0.650	0.711	1.067	1.422	2.134	2.845	3.200	3.556	4.267	5.334	6.401	7.112	7.468	8.535	10.668	21.337
P	1.000	0.920	1.380	1.840	2.760	3.680	4.140	4.600	5.520	6.900	8.280	9.200	9.660	11.040	13.800	27.601
P	1.500	1.277	1.915	2.554	3.831	5.107	5.746	6.384	7.661	9.577	11.492	12.769	13.407	15.322	19.153	38.306
Q	0.010	7.99E-02	0.120	0.160	0.240	0.320	0.359	0.399	0.479	0.599	0.719	0.799	0.839	0.959	1.198	2.397

TABLE 2C

100t/μ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
Q	0.040	0.127	0.190	0.253	0.380	0.506	0.569	0.633	0.759	0.949	1.139	1.266	1.329	1.519	1.898	3.797
Q	0.065	0.168	0.252	0.336	0.504	0.672	0.756	0.840	1.008	1.260	1.512	1.680	1.764	2.016	2.520	5.041
Q	0.100	0.207	0.311	0.414	0.621	0.828	0.932	1.035	1.242	1.553	1.863	2.070	2.174	2.484	3.105	6.210
Q	0.150	0.281	0.421	0.562	0.843	1.124	1.264	1.405	1.685	2.107	2.528	2.809	2.950	3.371	4.214	8.427
Q	0.250	0.352	0.527	0.703	1.055	1.406	1.582	1.758	2.110	2.637	3.164	3.516	3.692	4.219	5.274	10.548
Q	0.400	0.454	0.681	0.908	1.362	1.817	2.044	2.271	2.725	3.406	4.087	4.541	4.769	5.450	6.812	13.624
Q	0.650	0.587	0.880	1.174	1.761	2.348	2.641	2.935	3.522	4.402	5.282	5.869	6.163	7.043	8.804	17.608
Q	1.000	0.813	1.220	1.627	2.440	3.253	3.660	4.066	4.880	6.099	7.319	8.133	8.539	9.759	12.199	24.398
R	0.025	0.079	0.119	0.158	0.237	0.316	0.356	0.395	0.475	0.593	0.712	0.791	0.830	0.949	1.186	2.373
R	0.040	0.105	0.157	0.210	0.315	0.420	0.472	0.525	0.630	0.787	0.945	1.050	1.102	1.260	1.575	3.149
R	0.065	0.129	0.194	0.259	0.388	0.517	0.582	0.647	0.776	0.970	1.164	1.293	1.358	1.552	1.940	3.880
R	0.100	0.175	0.263	0.351	0.526	0.702	0.789	0.877	1.053	1.316	1.579	1.754	1.842	2.105	2.632	5.263
R	0.150	0.220	0.329	0.439	0.659	0.878	0.988	1.098	1.317	1.646	1.976	2.195	2.305	2.634	3.293	6.586
R	0.250	0.283	0.425	0.567	0.850	1.134	1.275	1.417	1.700	2.126	2.551	2.834	2.976	3.401	4.251	8.502
R	0.400	0.366	0.549	0.732	1.098	1.464	1.647	1.830	2.196	2.745	3.295	3.661	3.844	4.393	5.491	10.982
R	0.650	0.507	0.760	1.013	1.520	2.027	2.280	2.533	3.040	3.800	4.560	5.067	5.320	6.080	7.600	15.200

TABLE 2D

Table of Hazard Rate Ratios for t_2/t_1
$h(t_2)/h(t_1)$

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

t_2/t_1	Shape Parameter, β														
	0.333	0.500	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
1.25	0.862	0.894	0.928	1.000	1.077	1.118	1.160	1.250	1.398	1.563	1.683	1.747	1.953	2.441	7.451
1.50	0.763	0.816	0.874	1.000	1.145	1.225	1.310	1.500	1.837	2.250	2.576	2.756	3.375	5.063	38.443
1.75	0.689	0.756	0.830	1.000	1.205	1.323	1.452	1.750	2.315	3.063	3.691	4.051	5.359	9.379	153.937
2.00	0.630	0.707	0.794	1.000	1.260	1.414	1.587	2.000	2.828	4.000	5.040	5.657	8.000	16.000	512.000
2.25	0.582	0.667	0.763	1.000	1.310	1.500	1.717	2.250	3.375	5.063	6.634	7.594	11.391	25.629	1,477.892
2.50	0.543	0.632	0.737	1.000	1.357	1.581	1.842	2.500	3.953	6.250	8.483	9.882	15.625	39.063	3,814.697
2.75	0.509	0.603	0.714	1.000	1.401	1.658	1.963	2.750	4.560	7.563	10.595	12.541	20.797	57.191	8,994.857
3.00	0.481	0.577	0.693	1.000	1.442	1.732	2.080	3.000	5.196	9.000	12.980	15.588	27.000	81.000	19,683.000
3.25	0.456	0.555	0.675	1.000	1.481	1.803	2.194	3.250	5.859	10.563	15.646	19.042	34.328	111.566	40,452.955
3.50	0.434	0.535	0.659	1.000	1.518	1.871	2.305	3.500	6.548	12.250	18.599	22.918	42.875	150.063	78,815.639
3.75	0.414	0.516	0.644	1.000	1.554	1.936	2.414	3.750	7.262	14.063	21.848	27.232	52.734	197.754	146,649.778
4.00	0.397	0.500	0.630	1.000	1.587	2.000	2.520	4.000	8.000	16.000	25.398	32.000	64.000	256.000	262,144.000
4.25	0.381	0.485	0.617	1.000	1.620	2.062	2.624	4.250	8.762	18.063	29.258	37.237	76.766	326.254	452,376.848
4.50	0.367	0.471	0.606	1.000	1.651	2.121	2.726	4.500	9.546	20.250	33.432	42.957	91.125	410.063	756,680.643
4.75	0.354	0.459	0.595	1.000	1.681	2.179	2.826	4.750	10.352	22.563	37.927	49.174	107.172	509.066	1,230,955.878
5.00	0.342	0.447	0.585	1.000	1.710	2.236	2.924	5.000	11.180	25.000	42.749	55.902	125.000	625.000	1,953,125.000

TABLE 3A

100t/ρ Ratios at the Acceptable Quality Level (normal inspection)
for the MIL-STD-105D Plans, r = 0.90

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

AQL	Shape Parameter, β														
p'(%)	0.333	0.500	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
0.010	8.55E-08	9.01E-05	2.92E-03	9.49E-02	0.541	0.966	1.536	3.081	6.179	9.828	12.394	13.689	17.552	24.858	49.858
0.015	2.89E-07	2.03E-04	5.37E-03	0.142	0.733	1.266	1.959	3.773	7.267	11.250	13.997	15.371	19.425	26.958	51.921
0.025	1.34E-06	5.63E-04	1.16E-02	0.237	1.075	1.779	2.662	4.871	8.915	13.338	16.315	17.786	22.071	29.858	54.643
0.040	5.48E-06	1.44E-03	2.34E-02	0.380	1.530	2.434	3.529	6.162	10.759	15.601	18.786	20.343	24.824	32.802	57.273
0.065	2.35E-05	3.81E-03	4.85E-02	0.617	2.202	3.364	4.723	7.856	13.066	18.343	21.733	23.371	28.028	36.147	60.123
0.100	8.56E-05	9.02E-03	9.25E-02	0.950	3.042	4.484	6.117	9.745	15.524	21.176	24.732	26.433	31.217	39.401	62.770
0.150	2.89E-04	2.03E-02	0.170	1.425	4.124	5.877	7.803	11.936	18.260	24.243	27.933	29.682	34.549	42.731	65.369
0.250	1.34E-03	5.64E-02	0.366	2.376	6.051	8.264	10.604	15.414	22.404	28.748	32.564	34.351	39.260	47.333	68.799
0.400	5.50E-03	0.145	0.742	3.804	8.614	11.311	14.065	19.504	27.046	33.632	37.504	39.297	44.163	52.006	72.115
0.650	2.37E-02	0.383	1.540	6.189	12.409	15.647	18.836	24.879	32.859	39.556	43.401	45.160	49.878	57.323	75.712
1.000	8.68E-02	0.910	2.946	9.539	17.164	20.877	24.418	30.885	39.066	45.691	49.414	51.101	55.575	62.503	79.059
1.500	0.295	2.058	5.433	14.345	23.309	27.403	31.190	37.874	45.991	52.348	55.848	57.419	61.542	67.817	82.351
2.500	1.388	5.774	11.779	24.030	34.321	38.651	42.506	49.020	56.533	62.170	65.197	66.538	70.014	75.188	86.711
4.000	5.816	15.012	24.117	38.745	49.109	53.147	56.615	62.246	68.436	72.902	75.243	76.269	78.896	82.726	90.954
6.500	25.956	40.691	50.947	63.789	71.377	74.102	76.357	79.868	83.541	86.083	87.382	87.946	89.369	91.401	95.604
10.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000

TABLE 3B

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.90, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code	AQL	Shape Parameter, β														
Letter	(p%)	0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	130,473.780	1,940.307	3,612.115	1,092.717	601.009	492.423	419.860	330.563	260.257	221.906	204.905	198.023	181.814	161.325	127.014
B	4.000	38,659.227	5,306.833	1,966.195	728.480	443.418	375.790	329.193	269.904	221.293	193.853	181.437	176.362	164.287	148.759	121.967
C	2.500	8,350.293	1,910.445	913.799	437.086	302.291	267.328	242.293	209.066	180.396	163.502	155.658	152.412	144.591	134.312	115.893
C	10.000	57,634.377	6,925.552	2,400.716	832.199	489.971	410.662	356.563	288.479	233.395	202.648	188.829	183.199	169.847	152.773	123.601
D	1.500	2,038.647	746.268	451.514	273.179	212.489	195.418	182.755	165.281	149.479	139.792	135.187	133.260	128.562	122.261	110.572
D	6.500	12,111.664	2,447.950	1,100.530	494.768	331.742	290.358	261.000	222.434	189.566	170.399	161.555	157.907	149.142	137.683	117.338
D	10.000	39,438.720	5,377.931	1,985.918	733.344	445.636	377.461	330.510	270.803	221.882	194.283	181.799	176.698	164.561	148.957	122.048
E	1.000	475.104	282.613	217.969	168.111	147.638	141.383	136.571	129.658	123.094	118.905	116.863	115.999	113.867	110.948	105.332
E	4.000	2,590.539	875.508	508.973	295.890	225.604	206.104	191.725	172.014	154.331	143.563	138.465	136.335	131.154	124.230	111.458
E	6.500	7,582.088	1,791.400	870.752	423.249	295.085	261.656	237.661	205.730	178.090	161.758	154.163	151.018	143.433	133.450	115.521
E	10.000	17,334.049	3,108.852	1,316.588	557.571	362.848	314.437	280.401	236.129	198.847	177.324	167.452	163.391	153.665	141.013	118.749
F	0.650	130.473	119.402	114.225	109.271	106.876	106.089	105.464	104.533	103.610	103.000	102.696	102.566	102.241	101.789	100.891
F	2.500	680.140	358.976	260.795	189.467	161.491	153.116	146.730	137.647	129.126	123.740	121.132	120.031	117.323	113.634	106.599
F	4.000	1,891.547	709.923	434.919	266.444	208.547	192.193	180.038	163.231	147.993	138.634	134.178	132.313	127.762	121.653	110.296
F	6.500	4,078.619	1,184.883	638.641	344.221	252.713	227.977	209.944	185.532	163.959	150.989	144.894	142.358	136.210	128.046	113.158
F	10.000	13,163.037	2,587.641	1,147.303	508.689	338.719	295.779	265.382	225.541	191.682	171.982	162.905	159.163	150.180	138.449	117.664
G	0.400	31.854	46.642	56.439	68.295	75.126	77.552	79.549	82.641	85.853	88.063	89.190	89.677	90.907	92.657	96.258
G	1.500	161.126	137.439	126.936	117.234	112.666	111.183	110.010	108.275	106.567	105.443	104.886	104.648	104.055	103.231	101.603
G	2.500	433.745	265.964	208.266	163.084	144.314	138.550	134.106	127.704	121.609	117.707	115.804	114.998	113.006	110.276	105.013
G	4.000	902.813	433.576	300.469	208.225	173.340	163.063	155.281	144.300	134.095	127.696	124.612	123.313	120.125	115.799	107.610
G	6.500	2,688.403	897.421	518.498	299.570	227.706	207.810	193.152	173.081	155.096	144.156	138.979	136.818	131.560	124.537	111.596
G	10.000	6,161.168	1,559.943	784.931	394.961	280.166	249.864	227.999	198.736	173.229	158.071	150.996	148.062	140.974	131.617	114.724
H	0.250	8.350	19.105	28.897	43.709	53.756	57.594	60.861	66.113	71.817	75.891	78.014	78.941	81.310	84.745	92.057
H	1.000	41.501	55.638	64.421	74.591	80.263	82.248	83.871	86.366	88.935	90.691	91.581	91.965	92.933	94.306	97.111
H	1.500	109.674	106.349	104.725	103.126	102.335	102.073	101.864	101.551	101.239	101.031	100.928	100.883	100.772	100.618	100.308
H	2.500	223.889	171.141	149.629	130.821	122.323	119.615	117.492	114.377	111.345	109.369	108.394	107.978	106.947	105.520	102.723
H	4.000	639.360	344.480	252.856	185.602	159.014	151.027	144.927	136.236	128.066	122.893	120.386	119.327	116.720	113.166	106.380
H	6.500	1,398.616	580.496	373.981	240.935	193.386	179.721	169.488	155.221	142.154	134.060	130.188	128.562	124.588	119.228	109.192
H	10.000	3,490.207	1,067.991	590.780	326.801	243.060	220.220	203.503	180.776	160.588	148.398	142.654	140.261	134.453	126.723	112.571
J	0.150	2.039	7.463	14.278	27.318	37.786	42.102	45.906	52.267	59.509	64.886	67.754	69.022	72.296	77.142	87.830
J	0.650	10.016	21.567	31.647	46.440	56.256	59.969	63.115	68.147	73.580	77.440	79.445	80.320	82.551	85.779	92.617
J	1.000	26.155	40.898	51.142	63.951	71.513	74.228	76.473	79.970	83.626	86.156	87.449	88.009	89.426	91.447	95.628
J	1.500	52.741	65.278	72.623	80.795	85.219	86.747	87.989	89.886	91.823	93.138	93.803	94.089	94.808	95.824	97.890
J	2.500	146.789	129.160	121.157	113.649	110.071	108.904	107.979	106.606	105.251	104.357	103.913	103.723	103.250	102.592	101.288
J	4.000	312.438	213.719	176.759	146.191	132.951	128.809	125.589	120.910	116.404	113.494	112.067	111.460	109.959	107.891	103.870
J	6.500	745.691	381.686	273.074	195.368	165.249	156.280	149.455	139.774	130.720	125.012	122.252	121.088	118.226	114.333	106.926

TABLE 3B

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.90, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
J	10.000	1,813.752	690.322	425.882	262.740	206.369	190.407	178.532	162.093	147.167	137.988	133.616	131.785	127.316	121.312	110.142
K	0.100	0.534	3.057	7.310	17.483	27.038	31.267	35.122	41.813	49.780	55.917	59.264	60.759	64.663	70.555	83.997
K	0.400	2.608	8.793	16.148	29.654	40.185	44.468	48.222	54.455	61.494	66.685	69.442	70.659	73.794	78.418	88.554
K	0.650	6.762	16.598	26.004	40.740	50.994	54.956	58.346	63.828	69.825	74.132	76.385	77.371	79.892	83.561	91.412
K	1.000	13.538	26.366	36.795	51.348	60.659	64.123	67.037	71.657	76.597	80.077	81.876	82.659	84.651	87.519	93.552
K	1.500	37.132	51.661	60.936	71.876	78.062	80.240	82.026	84.780	87.626	89.577	90.568	90.996	92.076	93.609	96.752
K	2.500	77.840	84.619	88.227	91.989	93.929	94.585	95.113	95.911	96.715	97.255	97.526	97.642	97.934	98.344	99.168
K	4.000	181.376	148.726	134.676	121.953	116.050	114.146	112.646	110.432	108.262	106.839	106.135	105.834	105.087	104.049	102.004
K	6.500	426.283	262.905	206.466	162.143	143.689	138.017	133.641	127.336	121.328	117.481	115.603	114.808	112.843	110.149	104.952
K	10.000	1,288.370	549.575	358.939	234.430	189.457	176.472	166.728	153.111	140.607	132.843	129.123	127.561	123.738	118.578	108.893
L	0.065	0.130	1.194	3.612	10.927	19.006	22.856	26.491	33.056	41.248	47.808	51.470	53.124	57.495	64.225	80.140
L	0.250	0.634	3.425	7.961	18.506	28.215	32.474	36.340	43.018	50.924	56.986	60.282	61.753	65.588	71.361	84.475
L	0.400	1.636	6.444	12.790	25.385	35.763	40.092	43.929	50.384	57.787	63.318	66.279	67.590	70.981	76.018	87.188
L	0.650	3.260	10.205	18.055	31.945	42.492	46.731	50.425	56.520	63.352	68.360	71.010	72.177	75.180	79.594	89.216
L	1.000	8.857	19.869	29.760	44.575	54.553	58.353	61.582	66.764	72.383	76.389	78.474	79.385	81.710	85.078	92.238
L	1.500	18.387	32.335	42.880	56.864	65.483	68.637	71.269	75.408	79.788	82.847	84.421	85.105	86.838	89.324	94.511
L	2.500	42.206	56.267	64.966	75.011	80.602	82.556	84.154	86.609	89.135	90.861	91.736	92.113	93.064	94.412	97.166
L	4.000	97.148	98.090	98.564	99.040	99.279	99.359	99.423	99.519	99.615	99.679	99.711	99.725	99.759	99.807	99.904
L	6.500	282.349	199.767	168.032	141.339	129.627	125.943	123.071	118.886	114.843	112.224	110.938	110.391	109.035	107.165	103.520
M	0.040	3.34E-02	0.481	1.827	6.938	13.518	16.884	20.171	26.340	34.395	41.091	44.913	46.658	51.322	58.647	76.581
M	0.150	0.162	1.378	4.022	11.739	20.055	23.974	27.655	34.262	42.447	48.964	52.588	54.222	58.534	65.151	80.716
M	0.250	0.416	2.588	6.453	16.088	25.402	29.580	33.412	40.110	48.150	54.388	57.803	59.331	63.332	69.390	83.301
M	0.400	0.827	4.091	9.097	20.226	30.161	34.457	38.331	44.974	52.768	58.700	61.912	63.342	67.062	72.641	85.230
M	0.650	2.235	7.935	14.951	28.170	38.667	42.972	46.760	53.075	60.244	65.553	68.381	69.630	72.853	77.617	88.101
M	1.000	4.614	12.865	21.481	35.867	46.347	50.482	54.053	59.889	66.356	71.050	73.521	74.606	77.388	81.459	90.255
M	1.500	10.499	22.256	32.403	47.176	56.923	60.601	63.714	68.685	74.044	77.847	79.821	80.682	82.876	86.049	92.762
M	2.500	23.878	38.489	48.866	62.040	69.904	72.741	75.093	78.765	82.617	85.288	86.656	87.249	88.750	90.894	95.338
M	4.000	67.898	77.251	82.400	87.892	90.774	91.756	92.549	93.751	94.969	95.789	96.202	96.380	96.825	97.452	98.718
N	0.025	8.35E-03	0.191	0.914	4.371	9.559	12.408	15.288	20.907	28.591	35.225	39.099	40.888	45.724	53.470	73.123
N	0.100	4.04E-02	0.546	2.009	7.391	14.175	17.612	20.952	27.186	35.276	41.966	45.773	47.509	52.141	59.394	77.067
N	0.150	0.104	1.025	3.221	10.123	17.947	21.721	25.304	31.817	40.006	46.606	50.303	51.977	56.407	63.251	79.530
N	0.250	0.206	1.618	4.537	12.720	21.299	25.292	29.020	35.665	43.832	50.292	53.870	55.480	59.720	66.206	81.367
N	0.400	0.554	3.131	7.443	17.694	27.282	31.518	35.375	42.065	50.019	56.141	59.477	60.967	64.857	70.724	84.098
N	0.650	1.139	5.063	10.674	22.502	32.671	36.996	40.863	47.436	55.067	60.824	63.924	65.301	68.874	74.207	86.143
N	1.000	2.578	8.728	16.057	29.542	40.071	44.357	48.114	54.353	61.401	66.601	69.364	70.583	73.724	78.359	88.521
N	1.500	5.820	15.019	24.125	38.754	49.117	53.155	56.622	62.253	68.442	72.907	75.248	76.274	78.900	82.730	90.956
N	2.500	16.329	29.875	40.410	54.658	63.569	66.851	69.598	73.931	78.535	81.762	83.425	84.148	85.983	88.620	94.138
P	0.015	2.04E-03	0.075	0.452	2.732	6.719	9.071	11.531	16.528	23.691	30.117	33.957	35.750	40.655	48.673	69.766
P	0.065	9.85E-03	0.213	0.992	4.618	9.961	12.871	15.800	21.489	29.226	35.876	39.749	41.534	46.356	54.061	73.526
P	0.100	2.53E-02	0.400	1.590	6.322	12.608	15.870	19.078	25.144	33.140	39.838	43.678	45.435	50.144	57.567	75.873
P	0.150	5.01E-02	0.631	2.238	7.941	14.959	18.475	21.874	28.180	36.304	42.982	46.769	48.493	53.085	60.252	77.622
P	0.250	0.134	1.218	3.667	11.038	19.150	23.011	26.652	33.224	41.415	47.969	51.626	53.277	57.640	64.354	80.221
P	0.400	0.276	1.967	5.253	14.027	22.920	26.996	30.773	37.452	45.581	51.958	55.473	57.052	61.198	67.513	82.167
P	0.650	0.622	3.383	7.889	18.394	28.087	32.343	36.208	42.888	50.801	56.871	60.173	61.646	65.489	71.274	84.424
P	1.000	1.398	5.804	11.825	24.092	34.387	38.718	42.571	49.083	56.591	62.224	65.247	66.587	70.059	75.227	86.733
P	1.500	3.891	11.482	19.725	33.885	44.413	48.604	52.240	58.211	64.864	69.717	72.277	73.403	76.296	80.538	89.743
Q	0.010	5.34E-04	3.06E-02	0.231	1.748	4.808	6.736	8.822	13.223	19.818	25.954	29.702	31.470	36.363	44.517	66.721
Q	0.040	2.58E-03	8.73E-02	0.508	2.955	7.127	9.557	12.087	17.189	24.446	30.915	34.766	36.560	41.460	49.443	70.315
Q	0.065	6.62E-03	0.164	0.813	4.044	9.019	11.783	14.592	20.111	27.717	34.326	38.199	39.991	44.845	52.647	72.558
Q	0.100	1.31E-02	0.258	1.145	5.079	10.698	13.714	16.728	22.536	30.360	37.033	40.900	42.679	47.472	55.100	74.229
Q	0.150	3.51E-02	0.498	1.874	7.056	13.691	17.076	20.377	26.564	34.628	41.323	45.141	46.884	51.540	58.846	76.711
Q	0.250	7.20E-02	0.803	2.683	8.963	16.381	20.027	23.521	29.938	38.104	44.752	48.499	50.199	54.715	61.729	78.568
Q	0.400	0.162	1.380	4.025	11.745	20.063	23.983	27.664	34.271	42.457	48.973	52.597	54.231	58.542	65.159	80.721
Q	0.650	0.363	2.362	6.025	15.369	24.547	28.693	32.508	39.204	47.278	53.566	57.016	58.562	62.613	68.759	82.921
Q	1.000	1.005	4.658	10.026	21.582	31.664	35.980	39.853	46.457	54.155	59.983	63.129	64.527	68.159	73.590	85.785
R	0.025	6.29E-04	3.41E-02	0.251	1.846	5.009	6.986	9.116	13.588	20.255	26.431	30.192	31.964	36.862	45.005	67.086
R	0.040	1.61E-03	6.39E-02	0.402	2.527	6.338	8.611	11.004	15.897	22.964	29.345	33.173	34.962	39.870	47.920	69.225
R	0.065	3.19E-03	0.101	0.565	3.173	7.518	10.022	12.614	17.812	25.152	31.658	35.517	37.311	42.205	50.152	70.818
R	0.100	8.56E-03	0.194	0.925	4.407	9.618	12.476	15.363	20.993	28.685	35.322	39.196	40.983	45.818	53.558	73.183
R	0.150	1.75E-02	0.313	1.324	5.596	11.505	14.630	17.730	23.655	31.561	38.249	42.107	43.878	48.637	56.179	74.952
R	0.250	3.94E-02	0.537	1.984	7.330	14.087	17.514	20.847	27.073	35.159	41.850	45.659	47.396	52.032	59.295	77.003
R	0.400	8.81E-02	0.919	2.968	9.586	17.227	20.945	24.489	30.961	39.142	45.766	49.486	51.172	55.642	62.564	79.097
R	0.650	0.243	1.808	4.930	13.446	22.205	26.246	30.002	36.669	44.816	51.231	54.774	56.367	60.555	66.945	81.820

TABLE 3C

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.90, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	287,332.89	20,211.11	5,360.34	1,421.66	732.14	586.85	491.67	377.05	289.15	242.25	221.74	213.49	194.18	170.04	130.40
B	4.000	85,135.67	8,982.72	2,917.80	947.77	540.17	447.85	385.50	307.86	245.86	211.63	196.34	190.13	175.46	156.80	125.22
C	2.500	18,389.31	3,233.78	1,356.07	568.66	368.25	318.59	283.74	238.47	200.42	178.49	168.44	164.31	154.42	141.57	118.98
C	10.000	105,098.75	10,337.09	3,241.89	1,016.71	569.38	469.32	402.09	318.86	252.86	216.64	200.52	193.99	178.57	159.02	126.10
D	1.500	4,489.58	1,263.19	670.04	355.41	258.85	232.89	214.01	188.52	166.07	152.61	146.29	143.67	137.30	128.87	113.52
D	6.500	22,012.37	3,645.67	1,483.66	603.79	385.18	331.58	294.13	245.72	205.28	182.09	171.50	167.15	156.76	143.28	119.70
D	10.000	65,608.17	7,550.43	2,561.41	868.93	506.10	422.66	365.92	294.78	237.46	205.59	191.29	185.47	171.69	154.10	124.14
E	1.000	1,046.27	478.37	323.46	218.72	179.85	168.50	159.93	147.89	136.76	129.81	126.46	125.06	121.61	116.94	108.14
E	4.000	4,702.41	1,302.81	685.74	360.94	261.87	235.30	216.01	189.99	167.10	153.40	146.97	144.30	137.84	129.27	113.70
E	6.500	12,571.06	2,509.47	1,121.21	500.95	334.84	292.77	262.95	223.82	190.51	171.11	162.16	158.47	149.61	138.03	117.48
E	10.000	27,181.84	4,196.17	1,648.69	647.78	406.04	347.50	306.80	254.51	211.14	186.41	175.16	170.54	159.54	145.31	120.54
F	0.650	287.33	202.11	169.51	142.17	130.20	126.43	123.50	119.23	115.11	112.44	111.13	110.57	109.19	107.29	103.58
F	2.500	1,234.15	534.04	351.30	231.09	187.43	174.79	165.30	152.02	139.80	132.21	128.57	127.04	123.30	118.24	108.74
F	4.000	3,132.99	993.82	559.73	315.25	236.59	215.00	199.16	177.55	158.29	146.63	141.12	138.83	133.25	125.81	112.17
F	6.500	6,383.62	1,597.27	798.98	399.66	282.66	251.84	229.62	199.91	174.05	158.69	151.53	148.56	141.39	131.93	114.86
F	10.000	19,220.32	3,330.48	1,386.37	577.10	372.34	321.74	286.25	240.23	201.61	179.37	169.19	165.01	154.99	141.99	119.16
G	0.400	70.15	78.95	83.76	88.85	91.52	92.42	93.15	94.26	95.38	96.14	96.52	96.68	97.09	97.66	98.83
G	1.500	292.32	204.44	170.97	142.98	130.76	126.92	123.93	119.58	115.38	112.66	111.32	110.76	109.35	107.41	103.64
G	2.500	718.12	372.22	267.98	192.93	163.70	154.98	148.33	138.90	130.06	124.49	121.79	120.65	117.86	114.05	106.79
G	4.000	1,411.97	584.18	375.76	241.70	193.85	180.10	169.81	155.47	142.33	134.20	130.31	128.68	124.69	119.30	109.23
G	6.500	3,918.94	1,153.75	626.01	339.67	250.20	225.96	208.27	184.30	163.09	150.32	144.32	141.82	135.76	127.71	113.01
G	10.000	8,599.54	1,948.27	927.34	441.39	304.52	269.08	243.72	210.09	181.10	164.04	156.12	152.84	144.95	134.58	116.01
H	0.250	18.39	32.34	42.88	56.87	65.48	68.64	71.27	75.41	79.79	82.85	84.42	85.11	86.84	89.32	94.51
H	1.000	75.29	82.76	86.77	90.97	93.15	93.89	94.48	95.38	96.29	96.90	97.20	97.33	97.66	98.13	99.06
H	1.500	181.55	148.82	134.74	121.99	116.08	114.17	112.67	110.45	108.28	106.85	106.15	105.84	105.10	104.06	102.01
H	2.500	350.06	230.55	187.10	151.84	136.78	132.11	128.48	123.22	118.18	114.94	113.35	112.67	111.01	108.71	104.26
H	4.000	931.49	442.71	305.20	210.41	174.70	164.20	156.26	145.05	134.66	128.14	125.00	123.68	120.44	116.04	107.72
H	6.500	1,950.29	724.55	441.62	269.17	210.15	193.50	181.14	164.07	148.60	139.11	134.59	132.70	128.09	121.90	110.41
H	10.000	4,662.26	1,295.38	682.81	359.91	261.31	234.85	215.64	189.71	166.91	153.25	146.85	144.18	137.74	129.19	113.66
J	0.150	4.49	12.63	21.19	35.54	46.03	50.18	53.76	59.62	66.11	70.83	73.32	74.41	77.21	81.31	90.17
J	0.650	18.17	32.08	42.63	56.64	65.29	68.46	71.10	75.26	79.66	82.74	84.32	85.01	86.75	89.25	94.47
J	1.000	43.29	57.23	65.80	75.65	81.12	83.02	84.58	86.98	89.44	91.12	91.97	92.34	93.26	94.57	97.25
J	1.500	82.45	87.93	90.80	93.77	95.29	95.80	96.21	96.84	97.46	97.88	98.09	98.18	98.41	98.72	99.36
J	2.500	213.82	165.97	146.22	128.83	120.92	118.40	116.41	113.50	110.66	108.81	107.90	107.51	106.54	105.20	102.57
J	4.000	435.52	266.69	208.69	163.31	144.46	138.68	134.22	127.79	121.67	117.76	115.85	115.04	113.04	110.31	105.03
J	6.500	995.49	462.76	315.51	215.12	177.63	166.64	158.35	146.67	135.85	129.09	125.84	124.47	121.11	116.56	107.96
J	10.000	2,333.22	816.53	483.03	285.75	219.78	201.37	187.75	169.04	152.19	141.90	137.02	134.98	130.02	123.37	111.07
K	0.100	1.177	5.174	10.849	22.747	32.937	37.263	41.129	47.693	55.305	61.043	64.132	65.503	69.060	74.367	86.237
K	0.400	4.730	13.079	21.749	36.165	46.636	50.761	54.322	60.138	66.576	71.247	73.704	74.782	77.549	81.594	90.329
K	0.650	11.193	23.225	33.455	48.192	57.841	61.468	64.534	69.421	74.678	78.402	80.333	81.175	83.319	86.416	92.960
K	1.000	21.165	35.515	46.005	59.595	67.827	70.817	73.303	77.197	81.298	84.153	85.617	86.253	87.862	90.166	94.956
K	1.500	54.083	66.380	73.541	81.474	85.756	87.233	88.432	90.263	92.131	93.398	94.039	94.314	95.007	95.985	97.972
K	2.500	108.492	105.584	104.160	102.754	102.059	101.828	101.644	101.368	101.093	100.910	100.818	100.779	100.682	100.545	100.272
K	4.000	242.082	180.291	155.590	134.273	124.736	121.710	119.342	115.876	112.511	110.322	109.244	108.785	107.646	106.071	102.991
K	6.500	548.175	310.894	234.131	176.322	153.013	145.950	140.535	132.786	125.465	120.810	118.547	117.591	115.233	112.011	105.835
K	10.000	1,592.075	632.862	399.008	251.568	199.752	184.971	173.937	158.609	144.631	136.004	131.885	130.159	125.940	120.263	109.664
L	0.065	0.287	2.021	5.360	14.217	23.152	27.239	31.023	37.705	45.827	52.191	55.698	57.272	61.404	67.695	82.277
L	0.250	1.150	5.094	10.722	22.569	32.744	37.069	40.936	47.507	55.132	60.884	63.982	65.357	68.925	74.251	86.169
L	0.400	2.708	9.017	16.455	30.028	40.565	44.842	48.587	54.798	61.803	66.964	69.704	70.912	74.026	78.615	88.665
L	0.650	5.096	13.746	22.575	37.075	47.513	51.609	55.138	60.889	67.241	71.839	74.255	75.315	78.032	82.001	90.554
L	1.000	12.899	25.530	35.916	50.527	59.930	63.438	66.392	71.082	76.104	79.648	81.481	82.280	84.310	87.238	93.401
L	1.500	25.627	40.345	50.623	63.518	71.150	73.892	76.162	79.698	83.399	85.960	87.271	87.838	89.274	91.323	95.563
L	2.500	56.328	68.205	75.052	82.586	86.632	88.025	89.155	90.877	92.632	93.822	94.422	94.680	95.329	96.246	98.105
L	4.000	124.909	115.984	111.763	107.696	105.718	105.067	104.549	103.777	103.010	102.502	102.249	102.141	101.871	101.494	100.744
L	6.500	348.815	230.001	186.766	151.658	136.662	132.001	128.386	123.149	118.126	114.892	113.308	112.636	110.973	108.686	104.253
M	0.040	7.35E-02	0.815	2.712	9.026	16.468	20.122	23.622	30.044	38.213	44.858	48.602	50.301	54.812	61.816	78.623
M	0.150	0.293	2.050	5.417	14.316	23.274	27.367	31.153	37.837	45.955	52.313	55.815	57.387	61.512	67.790	82.335
M	0.250	0.689	3.622	8.302	19.030	28.813	33.085	36.955	43.624	51.497	57.520	60.790	62.248	66.048	71.761	84.712
M	0.400	1.294	5.511	11.374	23.475	33.725	38.054	41.914	48.451	56.007	61.688	64.741	66.095	69.606	74.838	86.509
M	0.650	3.256	10.196	18.044	31.931	42.478	46.717	50.412	56.508	63.341	68.350	71.001	72.169	75.172	79.587	89.212
M	1.000	6.431	16.051	25.359	40.064	50.358	54.346	57.763	63.296	69.359	73.720	76.002	77.002	79.559	83.282	91.259
M	1.500	14.012	26.977	37.432	51.940	61.182	64.615	67.499	72.069	76.948	80.383	82.158	82.930	84.894	87.720	93.659
M	2.500	30.700	45.509	55.408	67.460	74.436	76.919	78.964	82.134	85.432	87.703	88.862	89.363	90.628	92.429	96.140
M	4.000	83.873	88.937	91.582	94.306	95.699	96.167	96.544	97.111	97.682	98.065	98.257	98.339	98.545	98.834	99.415
N	0.025	1.84E-02	0.323	1.356	5.687	11.645	14.788	17.902	23.847	31.765	38.455	42.311	44.080	48.833	56.360	75.073

TABLE 3C

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.90, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
N	0.100	7.32E-02	0.813	2.706	9.014	16.451	20.104	23.602	30.023	38.192	44.837	48.582	50.281	54.794	61.799	78.613
N	0.150	0.172	1.434	4.144	11.975	20.357	24.295	27.987	34.605	42.787	49.290	52.903	54.532	58.826	65.412	80.877
N	0.250	0.322	2.179	5.672	14.763	23.816	27.933	31.732	38.422	46.523	52.851	56.331	57.892	61.986	68.208	82.588
N	0.400	0.807	4.023	8.982	20.057	29.971	34.264	38.138	44.785	52.590	58.536	61.756	63.190	66.922	72.519	85.158
N	0.650	1.588	6.318	12.601	25.135	35.498	39.828	43.668	50.135	57.559	63.109	66.082	67.399	70.806	75.867	87.102
N	1.000	3.441	10.579	18.549	32.525	43.069	47.295	50.972	57.031	63.810	68.771	71.395	72.549	75.519	79.881	89.376
N	1.500	7.483	17.757	27.355	42.140	52.302	56.207	59.541	64.915	70.774	74.972	77.163	78.121	80.570	84.128	91.721
N	2.500	20.171	34.394	44.912	58.646	67.016	70.064	72.601	76.581	80.779	83.704	85.206	85.858	87.511	89.877	94.803
P	0.015	4.49E-03	0.126	0.670	3.554	8.186	10.810	13.503	18.852	26.320	32.878	36.747	38.541	43.419	51.304	71.626
P	0.065	1.79E-02	0.317	1.336	5.632	11.561	14.692	17.798	23.731	31.641	38.331	42.188	43.958	48.715	56.251	75.000
P	0.100	4.18E-02	0.559	2.045	7.479	14.301	17.751	21.101	27.347	35.443	42.132	45.935	47.669	52.295	59.534	77.158
P	0.150	7.83E-02	0.849	2.798	9.216	16.727	20.403	23.918	30.358	38.532	45.170	48.907	50.601	55.098	62.074	78.787
P	0.250	0.196	1.565	4.426	12.512	21.037	25.016	28.734	35.372	43.544	50.016	53.604	55.219	59.474	65.988	81.233
P	0.400	0.385	2.455	6.202	15.668	24.903	29.063	32.885	39.582	47.643	53.910	57.346	58.885	62.915	69.024	83.081
P	0.650	0.830	4.101	9.113	20.251	30.188	34.485	38.359	45.001	52.793	58.724	61.935	63.364	67.083	72.659	85.240
P	1.000	1.798	6.862	13.408	26.196	36.617	40.941	44.766	51.182	58.519	63.985	66.907	68.200	71.542	76.498	87.463
P	1.500	4.806	13.218	21.922	36.357	46.821	50.940	54.495	60.297	66.717	71.372	73.821	74.895	77.651	81.680	90.377
Q	0.010	1.18E-03	5.17E-02	0.343	2.275	5.857	8.028	10.331	15.082	22.017	28.334	32.142	33.927	38.835	46.923	68.500
Q	0.040	4.68E-03	0.130	0.684	3.603	8.271	10.910	13.615	18.983	26.466	33.030	36.899	38.693	43.569	51.445	71.725
Q	0.065	1.10E-02	0.229	1.046	4.784	10.230	13.179	16.139	21.873	29.643	36.302	40.174	41.957	46.768	54.445	73.787
Q	0.100	2.05E-02	0.347	1.431	5.894	11.963	15.146	18.292	24.278	32.224	38.918	42.769	44.535	49.273	56.766	75.343
Q	0.150	5.12E-02	0.640	2.262	7.999	15.040	18.564	21.969	28.282	36.409	43.086	46.871	48.593	53.181	60.340	77.679
Q	0.250	0.100	1.002	3.168	10.011	17.798	21.561	25.136	31.641	39.829	46.433	50.136	51.812	56.250	63.110	79.442
Q	0.400	0.216	1.672	4.650	12.931	21.564	25.572	29.308	35.960	44.122	50.568	54.137	55.742	59.967	66.424	81.501
Q	0.650	0.467	2.793	6.832	16.712	26.138	30.340	34.184	40.881	48.889	55.082	58.467	59.980	63.938	69.921	83.619
Q	1.000	1.242	5.362	11.143	23.157	33.382	37.709	41.572	48.121	55.702	61.408	64.477	65.838	69.370	74.634	86.391
R	0.025	1.14E-03	0.051	0.338	2.252	5.813	7.974	10.269	15.006	21.929	28.239	32.045	33.829	38.738	46.828	68.431
R	0.040	2.67E-03	8.94E-02	0.517	2.989	7.189	9.632	12.171	17.289	24.560	31.035	34.887	36.681	41.581	49.558	70.397
R	0.065	4.99E-03	0.136	0.707	3.682	8.406	11.068	13.794	19.189	26.696	33.269	37.140	38.933	43.806	51.668	71.881
R	0.100	1.25E-02	0.250	1.116	4.995	10.566	13.564	16.563	22.350	30.160	36.829	40.698	42.478	47.276	54.918	74.106
R	0.150	2.44E-02	0.391	1.563	6.251	12.501	15.750	18.947	25.001	32.989	39.686	43.529	45.287	50.001	57.436	75.786
R	0.250	5.26E-02	0.651	2.292	8.070	15.141	18.674	22.086	28.407	36.538	43.214	46.996	48.716	53.299	60.447	77.747
R	0.400	0.113	1.086	3.365	10.423	18.344	22.148	25.751	32.285	40.476	47.061	50.746	52.412	56.820	63.621	79.763
R	0.650	0.300	2.081	5.480	14.427	23.409	27.507	31.297	37.983	46.097	52.447	55.944	57.513	61.630	67.894	82.398

TABLE 4A

100t/ρ Ratios at the Acceptable Quality Level (normal inspection)
for the MIL-STD-105D Plans, r = 0.99

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

AQL p'(%)	Shape Parameter, β														
	0.333	0.500	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
0.010	9.85E-05	9.90E-03	9.93E-02	0.995	3.151	4.626	6.291	9.975	15.817	21.509	25.081	26.789	31.584	39.771	63.064
0.015	3.33E-04	2.23E-02	0.182	1.493	4.270	6.062	8.024	12.217	18.603	24.621	28.326	30.079	34.953	43.131	65.674
0.025	1.54E-03	6.19E-02	0.392	2.488	6.264	8.522	10.902	15.773	22.821	29.192	33.017	34.807	39.715	47.771	69.116
0.040	6.31E-03	0.158	0.794	3.981	8.912	11.659	14.454	19.952	27.541	34.145	38.018	39.810	44.667	52.480	72.443
0.065	2.71E-02	0.419	1.646	6.470	12.828	16.116	19.343	25.435	33.446	40.144	43.981	45.735	50.433	57.833	76.048
0.100	9.87E-02	0.991	3.141	9.955	17.723	21.480	25.051	31.551	39.739	46.346	50.051	51.728	56.171	63.039	79.397
0.150	0.333	2.231	5.772	14.936	24.026	28.151	31.955	38.647	46.741	53.057	56.529	58.085	62.167	68.367	82.684
0.250	1.545	6.203	12.430	24.906	35.256	39.585	43.429	49.906	57.348	62.917	65.901	67.223	70.644	75.729	87.022
0.400	6.342	15.904	25.184	39.879	50.184	54.179	57.604	63.150	69.231	73.607	75.897	76.900	79.467	83.205	91.217
0.650	27.318	42.101	52.266	64.886	72.295	74.949	77.142	80.552	84.112	86.573	87.830	88.375	89.751	91.713	95.767
1.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
1.500	340.068	226.140	184.409	150.379	135.797	131.258	127.736	122.629	117.727	114.568	113.020	112.364	110.738	108.502	104.164
2.500	1,598.588	634.587	399.823	251.910	199.956	185.139	174.079	158.717	144.710	136.066	131.939	130.209	125.983	120.295	109.679
4.000	6,701.020	1,649.785	818.598	406.175	286.111	254.571	231.861	201.538	175.180	159.553	152.270	149.251	141.964	132.356	115.046
6.500	29,904.443	4,471.884	1,729.290	668.721	415.847	354.947	312.714	258.596	213.845	188.400	176.837	172.101	160.809	146.234	120.927
10.000	#########	10,989.922	3,394.267	1,048.328	582.603	478.996	409.542	323.779	255.976	218.860	202.371	195.691	179.939	159.992	126.488

TABLE 4B

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.99, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	150,319,451.268	1,312,230.480	122,604.833	11,455.263	3501.497	2358.686	1719.503	1070.293	666.196	485.663	414.669	387.514	327.153	258.108	160.657
B	4.000	44,539,475.529	583,216.854	66,737.902	7,636.864	2583.368	1800.017	1348.184	873.892	566.456	424.266	367.176	345.124	295.617	238.003	154.274
C	2.500	9,620,411.879	209,956.397	31,016.789	4,582.100	1761.158	1280.491	992.290	676.912	461.770	357.839	315.006	298.256	260.175	214.888	146.591
C	10.000	66,400,834.514	761,112.799	81,486.707	8,724.178	2854.588	1967.054	1460.275	934.033	597.434	443.515	382.135	358.503	305.620	244.425	156.341
D	1.500	2,348,734.725	82,014.249	15,325.582	2,863.813	1237.965	936.044	748.457	535.146	382.629	305.948	273.579	260.777	231.332	195.609	139.860
D	6.500	13,953,904.187	269,027.799	37,354.925	5,186.789	1932.742	1390.803	1068.905	720.194	485.243	372.935	326.941	309.009	268.364	220.282	148.419
D	10.000	45,437,533.103	591,030.414	67,407.368	7,687.850	2596.293	1808.020	1353.577	876.804	567.966	425.208	367.910	345.781	296.109	238.320	154.376
E	1.000	547,369.298	31,058.963	7,398.441	1,762.355	860.142	677.219	559.315	419.804	315.092	260.234	236.498	227.000	204.891	177.508	133.232
E	4.000	2,984,571.755	96,217.636	17,275.913	3,101.897	1314.379	987.230	785.193	556.947	395.049	314.202	280.213	266.796	235.997	198.758	140.982
E	6.500	8,735,359.003	196,873.459	29,555.641	4,437.042	1719.175	1253.321	973.321	666.111	455.866	354.023	311.981	295.528	258.091	213.510	146.120
E	10.000	19,970,638.340	341,660.389	44,688.520	5,845.172	2113.966	1506.138	1148.361	764.537	509.001	388.090	338.875	319.742	276.503	225.611	150.203
F	0.650	150,318.265	13,122.236	3,877.090	1,145.523	622.663	508.162	431.919	338.456	265.217	225.425	207.827	200.712	183.972	162.855	127.615
F	2.500	783,592.261	39,451.189	8,852.075	1,986.232	940.855	733.421	600.922	445.672	330.531	270.817	245.137	234.891	211.109	181.805	134.835
F	4.000	2,179,260.651	78,020.031	14,762.319	2,793.207	1215.003	920.595	737.330	528.508	378.827	303.413	271.538	258.924	229.893	194.635	139.512
F	6.500	4,698,995.602	130,217.702	21,677.167	3,608.569	1472.317	1092.002	859.807	600.714	419.695	330.455	293.225	278.582	245.095	204.865	143.131
F	10.000	15,165,195.887	284,379.760	38,942.516	5,332.727	1973.386	1416.771	1086.850	730.255	490.659	376.400	329.674	311.468	270.232	221.508	148.832
G	0.400	36,698.980	5,125.891	1,915.698	715.953	437.687	371.469	325.785	267.573	219.763	192.735	180.495	175.490	163.577	148.244	121.755
G	1.500	185,634.305	15,104.470	4,308.530	1,229.002	656.394	532.560	450.538	350.571	272.785	230.773	212.259	204.786	187.235	165.162	128.515
G	2.500	499,719.993	29,229.260	7,069.088	1,709.657	840.779	663.650	549.219	413.480	311.289	257.614	234.354	225.040	203.342	176.434	132.828
G	4.000	1,040,135.359	47,649.671	10,198.703	2,182.880	1009.886	781.064	635.943	467.213	343.251	279.475	252.179	241.313	216.151	185.270	136.114
G	6.500	3,097,321.466	98,625.872	17,599.209	3,140.476	1326.620	995.398	791.038	560.399	397.007	315.499	281.254	267.740	236.728	199.250	141.156
G	10.000	7,098,309.893	171,436.505	26,642.654	4,140.489	1632.258	1196.835	933.751	643.466	443.425	345.953	305.573	289.744	253.666	210.577	145.113
H	0.250	9,620.509	2,099.578	980.842	458.212	313.184	275.874	249.253	214.059	183.834	166.095	157.877	154.481	146.307	135.585	116.441
H	1.000	47,813.823	6,114.613	2,186.637	781.960	467.615	393.964	343.487	279.635	227.653	198.485	185.334	179.968	167.223	150.882	122.834
H	1.500	126,355.767	11,687.727	3,554.656	1,081.098	596.209	488.926	417.176	328.801	259.147	221.117	204.249	197.419	181.329	160.980	126.878
H	2.500	257,943.378	18,808.302	5,078.813	1,371.434	712.658	572.950	481.177	370.329	285.016	239.364	219.357	211.304	192.439	168.824	129.932
H	4.000	736,609.197	37,858.037	8,582.594	1,945.714	926.423	723.413	593.536	441.103	327.817	268.963	243.626	233.512	210.024	181.057	134.557
H	6.500	1,611,351.771	63,796.018	12,693.903	2,525.787	1126.672	860.857	694.126	502.572	363.880	293.404	263.463	251.585	224.181	190.757	138.115
H	10.000	4,021,083.323	117,371.336	20,052.639	3,425.950	1416.073	1054.842	833.429	585.316	411.067	324.783	288.692	274.479	241.933	202.748	142.390
J	0.150	2,348.742	820.144	484.638	286.382	220.145	201.665	188.004	169.228	152.327	142.009	137.115	135.069	130.088	123.421	111.095
J	0.650	11,539.021	2,370.169	1,074.198	486.844	327.750	287.250	258.484	220.645	188.346	169.484	160.774	157.180	148.541	137.239	117.149
J	1.000	30,133.051	4,494.645	1,735.887	670.421	416.640	355.548	313.191	258.925	214.062	188.560	176.972	172.226	160.911	146.308	120.958
J	1.500	60,763.066	7,173.974	2,465.017	846.993	496.489	415.515	360.353	291.031	235.046	203.842	189.830	184.123	170.596	153.312	123.819
J	2.500	169,116.330	14,194.618	4,112.376	1,191.412	641.278	521.644	442.219	345.168	269.417	228.395	210.290	202.977	185.787	164.139	128.117
J	4.000	359,961.178	23,487.517	5,999.676	1,532.564	774.576	616.991	514.341	391.480	297.966	248.393	226.791	218.118	197.858	172.617	131.384
J	6.500	859,114.612	41,946.984	9,268.844	2,048.096	962.748	748.572	612.083	452.559	334.611	273.600	247.403	236.958	212.734	182.924	135.249
J	10.000	2,089,631.858	75,865.884	14,455.559	2,754.376	1202.313	912.043	731.163	524.822	376.712	302.001	270.400	257.890	229.090	194.091	139.316
K	0.100	615.709	335.931	248.135	183.284	157.523	149.767	143.838	135,383	127.424	122.379	119.933	118.899	116.354	112.882	106.246
K	0.400	3,004.188	966.388	548.105	310.868	234.116	213.002	197.490	176.314	157.409	145.946	140.531	138.273	132.783	125.463	112.010
K	0.650	7,790.451	1,824.071	882.635	427.091	297.092	263.237	238.953	206.662	178.734	162.246	154.581	151.408	143.757	133.692	115.625
K	1.000	15,597.745	2,897.618	1,248.909	538.295	353.399	307.148	274.544	232.012	196.069	175.256	165.694	161.757	152.319	140.025	118.332
K	1.500	42,779.879	5,677.533	2,068.330	753.494	454.789	384.344	335.929	274.498	224.301	196.047	183.284	178.071	165.680	149.767	122.379
K	2.500	89,679.863	9,299.579	2,994.660	964.343	547.235	453.059	389.528	310.539	247.567	212.852	197.365	191.077	176.221	157.343	125.436
K	4.000	208,963.918	16,344.847	4,571.257	1,278.470	676.111	546.756	461.333	357.557	277.125	233.828	214.787	207.108	189.092	166.471	129.024
K	6.500	491,122.365	28,893.033	7,008.012	1,699.795	837.139	661.096	547.316	412.286	310.569	257.118	233.948	224.668	203.048	176.230	132.752
K	10.000	1,484,337.320	60,397.886	12,183.338	2,457.598	1103.782	845.293	682.820	495.742	359.919	290.739	261.308	249.625	222.653	189.715	137.737
L	0.065	150.320	131.223	122.605	114.553	110.727	109.480	108.493	107.029	105,585	104.633	104.160	103.958	103.455	102.755	101.368
L	0.250	730.126	376.356	270.208	193.999	164.380	155.549	148.826	139.283	130.353	124.719	121.994	120.845	118.018	114.172	106.851
L	0.400	1,884.647	708.196	434.125	266.119	208.357	192.037	179.906	163.132	147.921	138.577	134.129	132.267	127.723	121.623	110.283
L	0.650	3,755.850	1,121.516	612.850	334.890	247.558	223.839	206.510	183.000	162.166	149.612	143.705	141.245	135.278	127.345	112.847
L	1.000	10,203.875	2,183.618	1,010.142	467.292	317.827	279.507	252.205	216.169	185.283	167.185	158.810	155.350	147.027	136.119	116.670
L	1.500	21,183.795	3,553.605	1,455.465	596.121	381.506	328.768	291.878	244.156	204.237	181.320	170.844	166.542	156.255	142.911	119.546
L	2.500	48,626.233	6,183.681	2,205.136	786.364	469.589	395.442	344.647	280.422	228.165	198.857	185.647	180.257	167.458	151.051	122.903
L	4.000	111,924.976	10,779.981	3,345.519	1,038.267	578.405	475.926	407.179	322.221	254.990	218.157	201.787	195.152	179.505	159.684	126.366
L	6.500	325,295.263	21,954.244	5,703.466	1,481.696	755.213	603.262	504.029	384.928	293.970	245.614	224.506	216.024	196.196	171.456	130.941
M	0.040	38.475	52.899	62.028	72.732	78.758	80.875	82.610	85.283	88.042	89.931	90.890	91.305	92.349	93.831	96.866
M	0.150	186.359	151.438	136.514	123.060	116.839	114.836	113.258	110.932	108.654	107.162	106.423	106.108	105.324	104.237	102.097
M	0.250	479.717	284.440	219.024	168.653	147.995	141.687	136.835	129.867	123.253	119.032	116.976	116.106	113.959	111.019	105.366
M	0.400	953.341	449.606	308.762	212.039	175.716	165.048	156.982	145.616	135.072	128.471	125.292	123.954	120.671	116.221	107.806
M	0.650	2,575.424	872.099	507.486	295.313	225.275	205.836	191.500	171.847	154.210	143.470	138.384	136.259	131.090	124.181	111.437
M	1.000	5,316.120	1,413.828	729.117	376.009	270.022	241.805	221.370	193.910	169.855	155.501	148.785	145.996	139.251	130.329	114.162
M	1.500	12,096.290	2,445.878	1,099.831	494.558	331.637	290.276	260.934	222.387	189.534	170.375	161.534	157.888	149.126	137.671	117.333
M	2.500	27,510.409	4,229.912	1,658.626	650.378	407.262	348.426	307.538	255.025	211.479	186.662	175.368	170.739	159.695	145.423	120.591
M	4.000	78,225.171	8,489.804	2,796.876	921.401	528.855	439.507	379.026	303,546	243.097	209.644	194.686	188.607	174.226	155.916	124.866
N	0.025	9.620	20.996	31.017	45.821	55.693	59.435	62.609	67.691	73.186	77.094	79.126	80.013	82.275	85.549	92.492

TABLE 4B

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.99, Consumer's Risk = 0.10

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
N	0.100	46.517	60.035	68.203	77.482	82.585	84.360	85.807	88.024	90.299	91.848	92.632	92.970	93.821	95.026	97.481
N	0.150	119.527	112.627	109.328	106.126	104.560	104.043	103.632	103.018	102.407	102.002	101.800	101.713	101.498	101.196	100.596
N	0.250	237.110	177.814	153.984	133.347	124.090	121.150	118.847	115.476	112.200	110.068	109.017	108.570	107.460	105.925	102.920
N	0.400	638.255	344.083	252.637	185.495	158.946	150.969	144.877	136.196	128.036	122.869	120.365	119.307	116.703	113.153	106.373
N	0.650	1,312.698	556.472	362.312	235.897	190.345	177.207	167.353	153.589	140.958	133.119	129.365	127.789	123.931	118.726	108.961
N	1.000	2,970.497	959.149	545.023	309.701	233.457	212.469	197.045	175.983	157.173	145.763	140.373	138.124	132.659	125.369	111.968
N	1.500	6,705.535	1,650.526	818.873	406.267	286.160	254.609	231.892	201.561	175.196	159.565	152.280	149.261	141.972	132.362	115.049
N	2.500	18,813.286	3,283.294	1,371.615	573.000	370.353	320.211	285.032	239.374	201.031	178.944	168.829	164.670	154.717	141.785	119.074
P	0.015	2.349	8.201	15.326	28.638	39.148	43.447	47.224	53.515	60.643	65.915	68.720	69.959	73.154	77.873	88.246
P	0.065	11.344	23.434	33.681	48.408	58.035	61.652	64.707	69.576	74.811	78.519	80.441	81.279	83.412	86.494	93.002
P	0.100	29.115	43.929	53.959	66.279	73.456	76.018	78.131	81.412	84.830	87.188	88.392	88.913	90.228	92.103	95.970
P	0.150	57.692	69.301	75.955	83.247	87.152	88.494	89.582	91.240	92.928	94.071	94.648	94.896	95.520	96.399	98.183
P	0.250	154.942	133.900	124.476	115.715	111.569	110.220	109.153	107.571	106.012	104.986	104.476	104.258	103.716	102.962	101.470
P	0.400	317.939	216.220	178.308	147.044	133.532	129.310	126.028	121.262	116.675	113.715	112.262	111.646	110.119	108.016	103.931
P	0.650	716.976	371.823	267.764	192.827	163.635	154.922	148.286	138.862	130.037	124.468	121.773	120.636	117.840	114.034	106.787
P	1.000	1,610.956	637.856	401.367	252.558	200.342	185.456	174.348	158.921	144.859	136.182	132.041	130.305	126.064	120.357	109.707
P	1.500	4,482.455	1,261.858	669.511	355.226	258.749	232.811	213.946	188.475	166.036	152.581	146.269	143.644	137.286	128.855	113.514
Q	0.010	0.616	3.359	7.847	18.328	28.012	32.266	36.131	42.812	50.728	56.803	60.109	61.583	65.431	71.224	84.394
Q	0.040	2.972	9.594	17.239	30.974	41.519	45.779	49.499	55.654	62.575	67.660	70.356	71.544	74.602	79.104	88.941
Q	0.065	7.622	17.977	27.608	42.399	52.543	56.438	59.760	65.114	70.948	75.125	77.305	78.258	80.693	84.231	91.777
Q	0.100	15.093	28.348	38.850	53.242	62.329	65.691	68.510	72.967	77.715	81.050	82.771	83.520	85.421	88.156	93.891
Q	0.150	40.479	54.721	63.623	73.974	79.764	81.793	83.454	86.008	88.640	90.440	91.353	91.747	92.740	94.149	97.030
Q	0.250	82.949	88.282	91.076	93.959	95.434	95.931	96.330	96.932	97.538	97.944	98.148	98.235	98.454	98.761	99.379
Q	0.400	186.673	151.608	136.628	123.129	116.888	114.879	113.296	110.964	108.679	107.182	106.441	106.125	105.339	104.249	102.102
Q	0.650	418.279	259.604	204.519	161.122	143.010	137.437	133.135	126.934	121.021	117.234	115.384	114.601	112.665	110.010	104.886
Q	1.000	1,158.179	511.898	340.320	226.252	184.478	172.343	163.213	150.417	138.623	131.280	127.755	126.273	122.644	117.738	108.507
R	0.025	0.725	3.747	8.516	19.356	29.182	33.461	37.333	43.995	51.847	57.846	61.100	62.551	66.329	72.005	84.856
R	0.040	1.859	7.018	13.635	26.491	36.926	41.248	45.067	51.470	58.782	64.225	67.132	68.418	71.742	76.669	87.561
R	0.065	3.680	11.063	19.183	33.262	43.798	48.006	51.661	57.673	64.384	69.286	71.876	73.015	75.943	80.240	89.577
R	0.100	9.860	21.343	31.401	46.198	56.036	59.761	62.918	67.969	73.426	77.305	79.321	80.201	82.444	85.689	92.568
R	0.150	20.187	34.412	44.930	58.662	67.030	70.076	72.613	76.591	80.787	83.712	85.213	85.865	87.516	89.882	94.806
R	0.250	45.368	59.043	67.356	76.839	82.071	83.892	85.379	87.658	89.998	91.593	92.401	92.749	93.626	94.867	97.400
R	0.400	101.472	100.979	100.733	100.488	100.366	100.325	100.293	100.244	100.195	100.163	100.146	100.139	100.122	100.097	100.049
R	0.650	280.066	198.689	167.352	140.957	129.365	125.716	122.872	118.725	114.719	112.123	110.848	110.305	108.961	107.107	103.492

TABLE 4C

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.99, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
A	6.500	331,037,568.113	2,221,185.631	181,944.378	14,903.643	4265.494	2811.005	2013.610	1220.805	740.145	530.189	448.733	417.773	349.400	272.056	164.941
B	4.000	98,085,205.367	987,193.614	99,037.975	9,935.762	3147.030	2145.198	1578.777	996.783	629.333	463.163	397.338	372.074	315.719	250.865	158.387
C	2.500	21,186,404.359	355,389.701	46,028.691	5,961.457	2145.430	1526.048	1162.014	772.105	513.028	390.647	340.883	321.546	277.868	226.501	150.500
C	10.000	121,084,759.250	1,136,038.340	110,038.520	10,658.510	3317.205	2248.007	1646.713	1032.401	647.260	474.132	405.797	379.614	321.310	254.413	159.503
D	1.500	5,172,462.002	138,824.102	22,743.047	3,725.911	1508.080	1115.548	876.475	610.402	425.102	333.998	296.053	281.141	247.063	206.180	143.590
D	6.500	25,360,556.828	400,656.805	50,359.266	6,329.746	2244.087	1588.269	1204.569	795.597	525.478	398.531	347.069	327.101	282.063	229.233	151.404
D	10.000	75,587,482.973	829,786.929	86,941.062	9,109.264	2948.577	2024.521	1498.615	954.425	607.846	449.947	387.119	362.955	308.938	246.545	157.018
E	1.000	1,205,416.725	52,572.441	10,979.147	2,292.868	1047.814	807.085	654.979	478.839	350.067	284.092	255.926	244.726	218.824	187.101	136.785
E	4.000	5,417,662.996	143,177.461	23,275.874	3,783.880	1525.643	1127.089	884.631	615.132	427.735	335.721	297.428	282.383	248.019	206.818	143.812
E	6.500	14,483,173.782	275,788.294	38,056.765	5,251.555	1950.814	1402.357	1076.893	724.676	487.658	374.481	328.161	310.106	269.198	220.830	148.603
E	10.000	31,316,328.959	461,155.328	55,960.994	6,790.842	2365.608	1664.495	1256.476	824.066	540.467	407.982	354.468	333.739	287.065	232.480	152.473
F	0.650	331,037.568	22,211.856	5,753.586	1,490.364	758.524	605.613	505.796	386.052	294.657	246.092	224.899	216.385	196.482	171.656	131.017
F	2.500	1,421,864.978	58,691.099	11,924.198	2,422.625	1091.980	837.254	676.974	492.202	357.861	289.353	260.187	248.605	221.856	189.172	137.540
F	4.000	3,609,535.582	109,219.676	18,998.778	3,304.840	1378.361	1029.833	815.625	574.877	405.191	320.910	285.591	271.671	239.766	201.294	141.878
F	6.500	7,354,597.617	175,538.592	27,119.361	4,189.733	1646.796	1206.306	940.398	647.281	445.528	347.319	306.659	290.725	254.417	211.075	145.284
F	10.000	22,143,822.623	366,017.398	47,057.223	6,049.937	2169.268	1541.111	1172.332	777.813	516.060	392.570	342.393	322.903	278.893	227.170	150.721
G	0.400	80,819.719	8,676.506	2,842.881	931.478	533.187	442.706	381.508	305.201	244.157	210.406	195.322	189.194	174.700	156.255	125.002
G	1.500	336,784.430	22,468.186	5,803.313	1,498.939	761.795	607.933	507.540	387.161	295.334	246.563	225.287	216.740	196.764	171.853	131.093

TABLE 4C

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.99, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
G	2.500	827,344.370	40,906.364	9,095.847	2,022.532	953.722	742.330	607.487	449.726	332.934	272.457	246.473	236.109	212.067	182.465	135.080
G	4.000	1,626,736.098	64,201.435	12,754.357	2,533.800	1129.352	862.677	695.446	503.369	364.342	293.714	263.713	251.813	224.359	190.877	138.158
G	6.500	4,515,026.219	126,796.379	21,248.591	3,560.848	1457.690	1082.353	852.967	596.728	417.466	328.991	292.056	277.524	244.280	204.320	142.941
G	10.000	9,907,566.337	214,113.800	31,476.287	4,627.243	1774.156	1288.887	998.144	680.238	463.585	359.011	315.934	299.093	260.814	215.310	146.734
H	0.250	21,186.404	3,553.897	1,455.555	596.146	381.517	328.777	291.885	244.161	204.240	181.322	170.846	166.544	156.257	142.913	119.546
H	1.000	86,737.347	9,095.029	2,945.120	953.679	542.690	449.712	386.938	308.817	246.468	212.064	196.707	190.471	175.732	156.993	125.297
H	1.500	209,164.274	16,355.293	4,573.448	1,278.878	676.273	546.873	461.421	357.614	277.161	233.853	214.807	207.127	189.107	166.481	129.028
H	2.500	403,311.255	25,337.294	6,350.679	1,591.769	796.911	632.781	526.172	398.970	302.519	251.551	229.384	220.493	199.742	173.931	131.883
H	4.000	1,073,173.625	48,653.415	10,359.409	2,205.752	1017.812	786.510	639.932	469.654	344.685	280.448	252.969	242.032	216.715	185.657	136.256
H	6.500	2,246,941.754	79,627.157	14,989.802	2,821.828	1224.328	926.873	741.854	531.209	380.375	304.446	272.370	259.679	230.480	195.032	139.654
H	10.000	5,371,414.140	142,361.457	23,176.311	3,773.082	1522.377	1124.944	883.116	614.254	427.246	335.402	297.173	282.153	247.842	206.699	143.770
J	0.150	5,172.462	1,388.241	719.198	372.591	268.179	240.338	220.161	193.026	169.236	155.028	148.378	145.616	138.934	130.091	114.057
J	0.650	20,932.755	3,525.475	1,446.816	593.757	380.370	327.898	291.183	243.671	203.912	181.080	170.641	166.353	156.100	142.798	119.498
J	1.000	49,878.199	6,289.370	2,233.343	793.056	472.583	397.682	346.403	281.612	228.940	199.420	186.119	180.694	167.813	151.308	123.007
J	1.500	94,996.055	9,663.558	3,082.143	983.034	555.171	458.894	394.041	313.534	249.475	214.218	198.505	192.128	177.069	157.948	125.677
J	2.500	246,337.501	18,239.812	4,963.240	1,350.548	704.503	567.118	476.767	367.498	283.272	238.142	218.350	210.379	191.702	168.307	129.733
J	4.000	501,765,725	29,308.977	7,083.542	1,711.986	841.638	664.253	549.668	413.762	311.458	257.731	234.450	225.128	203.411	176.482	132.846
J	6.500	1,146,905.386	50,857.116	10,709.367	2,255.152	1034.861	798.210	648.493	474.884	347.753	282.526	254.655	243.569	217.918	186.481	136.558
J	10.000	2,688,114.677	89,735.688	16,395.471	2,995.592	1280.448	964.543	768.935	547.320	389.577	310.571	277.297	264.151	233.949	197.377	140.491
K	0.100	1,355.930	568.624	368.230	238.458	191,893	178.488	168.441	154.421	141.568	133.599	129.785	128.183	124.266	118.982	109.079
K	0.400	5,449.732	1,437.419	738.223	379.133	271.703	243.143	222.472	194.713	170.418	155.930	149.155	146.342	139.540	130.544	114.256
K	0.650	12,894.982	2,552.391	1,135.561	505.212	336.981	294.430	264.292	224.769	191.157	171.590	162.571	158.852	149.923	138.259	117.584
K	1.000	24,384.325	3,903.077	1,561.548	624.746	395.164	339.210	300.208	249.949	208.104	184.177	173.265	168.789	158.098	144.258	120.108
K	1.500	62,308.916	7,295.137	2,496.175	854.116	499.617	417.841	362.168	292.253	235.834	204.412	190.307	184.564	170.954	153.569	123.923
K	2.500	124,994.679	11,603.643	3,535.459	1077.202	594.597	487.751	416.273	328.208	258.773	220.851	204.028	197.216	181.165	160.864	126.832
K	4.000	278,903.838	19,813.886	5,281.135	1407.618	726.714	582.984	488.755	375.182	288.001	241.451	221.078	212.882	193.696	169.706	130.271
K	6.500	631,554.632	34,167.034	7,947.041	1848.433	891.462	699.094	575.549	429.934	321.160	264.404	239.906	230.114	207.349	179.209	133.869
K	10.000	1,834,237.437	69,551.052	13,543.402	2637.253	1163.761	886.002	712.346	513.542	370.221	297.658	266.898	254.708	226.615	192.411	138.712
L	0.065	331.038	222.119	181.944	149.036	134.887	130.475	127.050	122.080	117.305	114.226	112.717	112.076	110.490	108.307	104.071
L	0.250	1,324.461	559.791	363.931	236.599	190.770	177.559	167.652	153.818	141.125	133.251	129.480	127.897	124.023	118.796	108.994
L	0.400	3,119.467	990.954	558.522	314.794	236.331	214.792	198.983	177.424	158.202	146.558	141.061	138.769	133.201	125.778	112.151
L	0.650	5,871.445	1,510.648	766.254	388.671	276.813	247.203	225.813	197.147	172.121	157.227	150.271	147.385	140.409	131.195	114.540
L	1.000	14,861.515	2,805.705	1,219.078	529.689	349.153	303.865	271.902	230.150	194.809	174.317	164.895	161.014	151.707	139.574	118.141
L	1.500	29,524.441	4,433.919	1,718.268	665.877	414.520	353.940	311.915	258.046	213.480	188.133	176.611	171.892	160.638	146.110	120.876
L	2.500	64,895.521	7,495.659	2,547.460	865.775	504.724	421.635	365.126	294.241	237.117	205.338	191.083	185.281	171.534	153.986	124.091
L	4.000	143,908.471	12,746.499	3,793.527	1129.004	615.916	503.265	428.171	336.007	263.681	224.336	206.923	199.880	183.305	162.382	127.429
L	6.500	401,871.350	25,276.952	6,339.332	1589.873	796.199	632.278	525.796	398.732	302.374	251.451	229.302	220.418	199.683	173.889	131.867
M	0.040	84.730	89.541	92.049	94.626	95.942	96.385	96.740	97.276	97.815	98.176	98.357	98.434	98.629	98.901	99.449
M	0.150	338.061	225.249	183.864	150.083	135.597	131.085	127.585	122.508	117.634	114.493	112.953	112.300	110.684	108.459	104.144
M	0.250	794.016	398.003	281.783	199.500	167.864	158.475	151.344	141.244	131.819	125.887	123.022	121.814	118.846	114.812	107.151
M	0.400	1,490.351	605.609	386.051	246.091	196.482	182.277	171.655	156.873	143.363	135.010	131.017	129.343	125.249	119.734	109.423
M	0.650	3,750.968	1,120.544	612.451	334.745	247.478	223.774	206.457	182.960	162.138	149.591	143.686	141.227	135.263	127.334	112.842
M	1.000	7,408.964	1,764.026	860.753	420.003	293.386	260.316	236.566	204.940	177.542	161.343	153.807	150.686	143.157	133.245	115.432
M	1.500	16,143.094	2,964.771	1,270.555	544.497	356.448	309.502	276.438	233.345	196.969	175.927	166.264	162.287	152.756	140.346	118.468
M	2.500	35,370.029	5,001.385	1,880.692	707.205	433.669	368.437	323.390	265.933	218.685	191.947	179.831	174.875	163.075	147.880	121.606
M	4.000	96,630.447	9,774.082	3,108.544	988.640	557.543	460.637	395.387	314.426	250.043	214.625	198.843	192.441	177.321	158.128	125.749
N	0.025	21.186	35.539	46.029	59.615	67.844	70.833	73.318	77.210	81.309	84.162	85.626	86.261	87.869	90.172	94.959
N	0.100	84.382	89.296	91.859	94.497	95.843	96.297	96.661	97.209	97.761	98.131	98.316	98.396	98.595	98.874	99.436
N	0.150	197.839	157.594	140.655	125.537	118.598	116.372	114.620	112.043	109.524	107.876	107.061	106.714	105.850	104.654	102.300
N	0.250	370.674	239.512	192.529	154.762	138.755	133.796	129.957	124.403	119.087	115.670	113.999	113.290	111.536	109.127	104.464
N	0.400	929.574	442.102	304.889	210.262	174.611	164.125	156.191	145.004	134.618	128.111	124.977	123.657	120.418	116.025	107.715
N	0.650	1,829.473	694.306	427.723	263.497	206.815	190.773	178.840	162.326	147.336	138.121	133.731	131.893	127.407	121.382	110.174
N	1.000	3,964.173	1,162.613	629.617	340.971	250.922	226.540	208.752	184.654	163.338	150.512	144.483	141.973	135.887	127.804	113.050
N	1.500	8,621.095	1,951.529	928.499	441.761	304.713	269.231	243.844	210.181	181.165	164.083	156.155	152.876	144.976	134.598	116.016
N	2.500	23,238.931	3,779.875	1,524.432	614.807	390.440	335.603	297.333	247.953	206.774	183.195	172.433	168.017	157.465	143.796	119.915
P	0.015	5.172	13.882	22.743	37.259	47.690	51.779	55.302	61.040	67.374	71.958	74.365	75.421	78.128	82.082	90.599
P	0.065	20.578	34.855	45.363	59.038	67.352	70.376	72.892	76.836	80.994	83.890	85.377	86.022	87.656	89.997	94.867
P	0.100	48.191	61.467	69.420	78.401	83.319	85.025	86.416	88.544	90.725	92.209	92.960	93.284	94.098	95.250	97.596
P	0.150	90.190	93.348	94.968	96.617	97.452	97.732	97.956	98.294	98.633	98.859	98.973	99.021	99.143	99.314	99.656
P	0.250	225.664	172.045	150.221	131.166	122.565	119.825	117.677	114.528	111.462	109.465	108.479	108.060	107.018	105.576	102.750
P	0.400	443.105	269.777	210.501	164.249	145.086	139.209	134.679	128.160	121.955	117.987	116.051	115.232	113.208	110.433	105.087
P	0.650	956.821	450.700	309.325	212.297	175.876	165.182	157.096	145.704	135.138	128.523	125.338	123.997	120.708	116.249	107.819
P	1.000	2,071.150	754.179	455.099	274.623	213.330	196.106	183.334	165.718	149.794	140.038	135.401	133.461	128.731	122.390	110.630
P	1.500	5,536.845	1,452.697	744.100	381.143	272.782	244.001	223.179	195.229	170.779	156.205	149.392	146.563	139.724	130.683	114.316
Q	0.010	1.356	5.686	11.644	23.846	34.124	38.454	42.310	48.832	56.359	62.011	65.046	66.392	69.880	75.073	86.645

TABLE 4C

100t/ρ Ratios at the Limiting Quality Level
for the MIL-STD-105D Plans, r = 0.99, Consumer's Risk = 0.05

NOTE—These plans assume the characteristic being measured has a Weibull distribution.
NOTE—Where scientific notation is used (that is, E-x), the decimal point is moved to the left x places (for example, if the number in scientific notation is 8.03E-04, then the decimal is moved to the left four places. The number in decimal notation is 0.000803).

Code Letter	AQL (p%)	Shape Parameter, β														
		0.333	0.50	0.667	1.000	1.333	1.500	1.667	2.000	2.500	3.000	3.333	3.500	4.000	5.000	10.000
Q	0.040	5.391	14.270	23.218	37.776	48.185	52.257	55.761	61.462	67.746	72.289	74.673	75.719	78.398	82.308	90.724
Q	0.065	12.616	25.154	35.519	50.154	59.597	63.125	66.097	70.819	75.879	79.451	81.300	82.106	84.154	87.109	93.332
Q	0.100	23.595	38.183	48.574	61.793	69.695	72.548	74.914	78.608	82.485	85.175	86.553	87.150	88.661	90.821	95.300
Q	0.150	58.955	70.310	76.782	83.851	87.626	88.921	89.971	91.570	93.197	94.298	94.853	95.092	95.692	96.539	98.254
Q	0.250	115.604	110.149	107.519	104.952	103.691	103.275	102.942	102.446	101.952	101.624	101.461	101.391	101.216	100.971	100.484
Q	0.400	249.121	183.770	157.836	135.562	125.633	122.487	120.028	116.431	112.942	110.674	109.557	109.082	107.903	106.274	103.089
Q	0.650	537.763	306.945	231.897	175.198	152.282	145.329	139.997	132.363	125.145	120.553	118.320	117.376	115.049	111.868	105.768
Q	1.000	1,430.607	589.314	378.234	242.758	194.482	180.627	170.257	155.807	142.584	134.397	130.482	128.840	124.823	119.408	109.274
R	0.025	1.315	5.573	11.469	23.606	33.867	38.196	42.055	48.586	56.132	61.803	64.850	66.201	69.704	74.921	86.557
R	0.040	3.077	9.820	17.542	31.337	41.883	46.136	49.846	55.979	62.867	67.923	70.602	71.782	74.819	79.289	89.044
R	0.065	5.753	14.902	23.985	38.603	48.974	53.017	56.490	62.131	68.336	72.813	75.160	76.189	78.823	82.666	90.921
R	0.100	14.361	27.423	37.896	52.367	61.560	64.969	67.832	72.365	77.201	80.603	82.360	83.125	85.068	87.864	93.736
R	0.150	28.135	42.937	53.042	65.526	72.830	75.441	77.598	80.948	84.443	86.857	88.090	88.623	89.971	91.893	95.861
R	0.250	60.546	71.569	77.811	84.598	88.211	89.449	90.452	91.977	93.529	94.577	95.106	95.334	95.905	96.710	98.341
R	0.400	130.459	119.394	114.219	109.268	106.873	106.087	105.462	104.531	103.609	102.998	102.695	102.565	102.240	101.788	100.890
R	0.650	345.942	228.737	185.995	151.240	136.380	131.758	128.174	122.980	117.996	114.786	113.214	112.547	110.896	108.626	104.224

APPENDIX

(Nonmandatory Information)

X1. MATHEMATICAL MATERIAL

X1.1 *Computation of the Conversion Factors*—For the attribute acceptance procedure used with these plans, the probability of acceptance for a lot depends only on the probability, *p'*, of item life being less than (or equal to) the test truncation time, *t*. With the magnitude of the shape parameter known, the magnitude of the location parameter taken as zero, and the value of test truncation time, *t*, preassigned, *p'* becomes a function only of the lot quality under evaluation (mean life, hazard rate, or reliable life). The means for the mathematical determination of the specific relationships are outlined below.

X1.2 *Evaluation in Terms of Mean Life (μ)*:

X1.2.1 As noted, *p'* is a function of the test truncation time, *t*, and the mean item life, μ, for the lot. To make use of Practice E2234 plans for mean life evaluation, it is necessary to find *t* and μ combinations equivalent to the *p'* (percent defective) values associated with each of the Practice E2234 plans. To make the conversion factors available for general use rather than preparing them in terms of specific values of *t* and μ, the dimensionless ratio *t*/μ has been used (for ease in tabulation and use, 100*t*/μ factors are provided). The probability, *p'*, of an item failing before time, *t*, is the value of the cumulative density function at time *t*. For the Weibull distribution (with the location parameter equal to zero), this is given by:

$$p' = F(t) = 1 - e^{-\left(\frac{t}{\eta}\right)^{\beta}} \quad \text{(X1.1)}$$

X1.2.2 Here, η is the scale or characteristic life parameter. The formula for the mean of the Weibull distribution is:

$$\mu = \eta\Gamma(1/\beta + 1) \quad \text{(X1.2)}$$

X1.2.3 Solving Eq X1.1 for *t* gives:

$$t = \eta\{-\ln(1 - p')\}^{1/\beta} \quad \text{(X1.3)}$$

X1.2.4 Then the ratio of (Eq X1.3) to (Eq X1.2) × 100 gives the appropriate 100*t*/μ ratio. This equation is:

$$100t/\mu = \frac{100\{-\ln(1 - p')\}^{1/\beta}}{\Gamma(1/\beta + 1)} \quad \text{(X1.4)}$$

X1.2.5 Further details will be found in Refs **(1)** and **(4)**.

X1.3 *Evaluation in Terms of Hazard Rate, h(t)*:

X1.3.1 The instantaneous failure rate or the hazard rate at any specified time, *t*, which is symbolized by *h(t)*, is given by relationship (Eq X1.5):

$$h(t) = \frac{f(t)}{1 - F(t)} \quad \text{(X1.5)}$$

X1.3.2 The value *f(t)* is the population probability density function and *F(t)* is the cumulative distribution function of the population. For the Weibull distribution (with the location parameter equal to zero), the expression for the population density function is:

$$f(t) = \frac{\beta}{\eta}\left(\frac{t}{\eta}\right)^{\beta - 1} e^{-(t/\eta)\beta} \quad \text{(X1.6)}$$

X1.3.3 The expression for the cumulative density function is:

$$F(t) = 1 - e^{-(t/\eta)\beta} \quad \text{(X1.7)}$$

X1.3.4 From Eq X1.6 and X1.7, the following expression for hazard rate may be obtained:

$$h(t) = \frac{\beta}{\eta}\left(\frac{t}{\eta}\right)^{\beta-1} \quad \text{(X1.8)}$$

X1.3.5 A more useful form for the steps to follow is given if both sides of this equation are multiplied by (*t/b*) which gives:

$$\frac{t\,h(t)}{\beta} = \left(\frac{t}{\eta}\right)^{\beta} \quad \text{(X1.9)}$$

X1.3.6 The probability, *p'* of an item failing before the end of the testing time, *t*, is given by the cumulative density function, *F(t)*, as shown in Eq X1.7. By combining Eq X1.9 and Eq X1.7, *p'* in terms of *h(t)* becomes:

$$p' = 1 - e^{\frac{t\,h(t)}{\beta}} \quad \text{(X1.10)}$$

X1.3.7 By transposing and taking the natural logarithm, the following required expression is found:

$$t\,h(t) = -\beta\ln(1-p') \quad \text{(X1.11)}$$

X1.3.8 Values for this dimensionless product, *t h(t)*, may thus be found by use of this expression for all *p'* (percent defective) values associated with Practice E2234 plans. Note that the time *t* at which the hazard rate is to be evaluated is the same as the test truncation time. Further details may be found in Refs **(2)** and **(5)**.

X1.4 *Evaluation in Terms of Reliable Life* (ρ_r):

X1.4.1 With the location parameter equal to zero, the value for reliable life, ρ_r, where *r* is the proportion of items surviving beyond a life of ρ, is given by the expression:

$$\rho_r = \eta(-\ln(r))^{1/\beta} \quad \text{(X1.12)}$$

X1.4.2 The probability, *p'* of an item failing before time *t* is given by:

$$p' = F(t) = 1 - e^{-(t/\eta)\beta} \quad \text{(X1.13)}$$

X1.4.3 Substitution of the value for η given by Eq X1.12 for η in Eq X1.13 and simplifying gives:

$$p' = 1 - r^{\left(\frac{t}{\rho_r}\right)^{\beta}} \quad \text{(X1.14)}$$

X1.4.4 This can be simplified to the following required form:

$$\frac{t}{\rho_r} = \left(\frac{\ln(1-p')}{\ln(r)}\right)^{1/\beta} \quad \text{(X1.15)}$$

X1.4.5 Values for the dimensionless ratio $100t/\rho_r$ have been determined for all the *p'* (percent defective) values associated with Practice E2234 plans. Further details may be found in Refs **(3)** and **(6)**.

REFERENCES

(1) Quality Control and Reliability Technical Report TR3, "Sampling Procedures and Tables for Life and Reliability Testing Based on the Weibull Distribution (Mean Life Criterion)," Office of the Assistant Secretary of Defense (Installations and Logistics), U.S. Government Printing Office, Sept. 1961.

(2) Quality Control and Reliability Technical Report TR4, "Sampling Procedures and Tables for Life and Reliability Testing Based on the Weibull Distribution (Hazard Rate Criterion)," Office of the Assistant Secretary of Defense (Installations and Logistics), U.S. Government Printing Office, Feb. 1962.

(3) Quality Control and Reliability Technical Report TR6, "Sampling Procedures and Tables for Life and Reliability Testing Based on the Weibull Distribution (Reliable Life Criterion)," Office of the Assistant Secretary of Defense (Installations and Logistics), U.S. Government Printing Office, Feb. 1963.

(4) Quality Control and Reliability Technical Report TR7, "Factors and Procedures for Applying Mil-Std-105D Sampling Plans to Life and Reliability Testing," Office of the Assistant Secretary of Defense (Installations and Logistics), U.S. Government Printing Office, 1965.

(5) Goode, H. P., and Kao, J. H. K., "Sampling Plans Based on the Weibull Distribution," *Proceedings of the Seventh National Symposium on Reliability and Quality Control*, 1961, pp. 24–40.

(6) Goode, H. P., and Kao, J. H. K., "Sampling Procedures and Tables for Life and Reliability Testing Based on the Weibull Distribution (Hazard Rate Criterion)," *Proceedings of the Eighth National Symposium on Reliability and Quality Control*, 1962, pp. 37–58.

(7) Goode, H. P., and Kao, J. H. K., "Weibull Tables for Bio-Assaying and Fatigue Testing," *Proceedings of the Ninth National Symposium on Reliability and Quality Control*, 1963 , pp. 270–286.