Appendix F

Handbook 133, *Checking the Net Contents of Packaged Goods,* Fourth Edition Proposed Amendments and Editorial Changes

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Handbook 133, Fourth Edition
Proposed Amendments and Editorial Changes

The following table lists the amendments and editorial changes that are under consideration by the membership of the NCWM. As appropriate, the text on the cited pages indicates the changes to the section or paragraph as indicated in bold ~~**strikeout**~~ for deletions and bold **underscore** for insertions.

Line item #	Section & Page Number	Title	Action	Comments
CHAPTER 1				
General Information				
1	1.1. G9	Scope	Replaced ~~**standards**~~ with **laws and regulations**"	
2	1.1.a. G9	When and where to use checking procedures?	a. When and where to use package checking procedures?	
Package Requirements				
3	1.2.(1) G10	Inspection Lot	Replaced ~~**this collection**~~ with **the lot** for clarification.	
4	1.2.(3) G11	Individual Package Requirement	Change the end of the last sentence. This handbook does not specify limits of overfilling **(with the exception of textiles)**, which is usually controlled by the packer **for economic, compliance and other reasons.**	This is to provide an example of at least one of the factors that packers consider in setting their filling targets. Other reasons can be aversion to risk; concern over the accuracy of nutritional information. Packers of industrial packages are especially concerned with overfilling because their packaged goods may be used in the production of other products where they are added to the process based on the package's labeled quantity.
5	1.2.(4) G11	Maximum Allowable Variation	The limit of **the** "reasonable **minus** variation" for an individual package is called a "Maximum Allowable Variation" (MAV). An MAV is a deviation from the labeled weight, measure, or count of an individual package beyond which the deficiency is considered **an** unreasonable **minus error**.	Change sentence to improve clarity and to clarify that a package error that exceeds the Maximum Allowable Variation is an "unreasonable error."
6	1.2.(5)a. G11	Deviations Caused by Moisture Loss or Gain - Why do we allow for moisture loss or gain?	a. Why **and when** do we allow for moisture loss or gain?	
7	1.2.(5)a. G11	Deviations Caused by Moisture Loss or Gain - Why do we allow for moisture loss or gain?	Revise the first paragraph, second sentence. The amount of ~~**lost**~~ moisture **loss** depends upon the nature of the product, the packaging	

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			material, the length of time it is in distribution, environmental conditions, and other factors. Revised the first paragraph, last sentence. For loss or gain of moisture**,** ~~**apply**~~ the moisture allowances **may be applied before or after the package errors are determined**.	
8	1.2.(5)a. G112	Deviations Caused by Moisture Loss or Gain - Why do we allow for moisture loss or gain?	For loss or gain of moisture**, apply** the moisture allowances **after the package errors are determined.** ~~**may be applied before or after the package errors are determined**~~.	Recommendation from the WWMA
9	1.2.(5)a. G12	Deviations Caused by Moisture Loss or Gain - Why do we allow for moisture loss or gain?	Added a paragraph explaining that moisture allowances can be made before or after determining package errors. **To apply an allowance before determining package errors, adjust the Nominal Gross Weight (see Section 2.3. "Basic Test Procedure") – Determine Nominal Gross Weight and Package Errors for Tare Sample, so the package errors are increased by an amount equal to the moisture allowance. This approach is used to account for moisture loss in both the average and individual package errors.** **It is also permissible to apply the moisture allowances after individual package errors and average errors are determined. For example, a sample of a product that could be subject to moisture loss might fail because the average error is minus or the error in several of the sample packages are found to be unreasonable errors (i.e., the package error is greater than the Maximum Allowable Variation permitted for the package's labeled quantity).** ~~**to both the maximum allowable variations permitted for individual packages and the average net quantity of contents before determining the conformance of a lot**~~ **You can apply an allowance after determining the errors by adding an amount equal to the moisture allowance to adjust the average error** ~~**so the adjusted average error**~~ **and individual package errors.** ~~**provide for loss of moisture**~~	

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			~~**from the sample packages.**~~	
10	1.2.(5)a. G12	Deviations Caused by Moisture Loss or Gain - Why do we allow for moisture loss or gain?	To apply ~~**an**~~ **a moisture allowance** before determining package errors, adjust the Nominal Gross Weight (see Section 2.3. "Basic Test Procedure")	Recommendation by CWMA
11	1.2.(5)a. G12	Deviations Caused by Moisture Loss or Gain - Why do we allow for moisture loss or gain?	***We suggest removing the first paragraph (To apply an allowance...) and rewording the second paragraph (It is also permissible to apply...) and replace with the following wording:*** Apply the moisture allowance after individual package and average errors are determined. For example, a sample of a product subject to moisture loss might fail because the errors in several of the sample packages are determined to be unreasonable (i.e., the package error is greater than the Maximum Allowable Variation permitted for the package's labeled quantity) or the average error is minus and outside the Sample Error Limit. Adjust the MAV after the individual package errors are determined and adjust the SEL after aver age error is determined. Compare individual package errors to the adjusted MLA and the average error to the adjusted SEL.	Recommendation from WWMA **Note:** California officials question the need for accommodating both methods (before or after). This only presents opportunities for confusion. Recorded package errors should be ACTUAL values. Adjusted package errors on an inspection report cause concern for prosecutors when presenting the report in evidence. The MLA should be applied to the MAV and the SEL only after determining package and average errors.
Chapter 2				
Basic Inspection Procedure and Recordkeeping				
12	2.3.3.d. G24	How many MAVs are permitted in a sample?	d. How many ~~***MAVs***~~ **unreasonable minus errors (UME's)** are permitted in a sample?	
13	2.3.3.d. G24	How many MAVs are permitted in a sample?	To find out how many minus package errors are permitted to exceed the MAV, **(errors known as unreasonable minus errors or UME's)** ~~**(refer to Appendix A)**~~see Column 4 in either Table 2-1. "Sampling Plans for Category A" or Table 2-2. "Sampling Plans for Category B." **(refer to Appendix A)** Record this number in Box 8.	

Line item #	Section & Page Number	Title	Action	Comments
Tare Procedures				
14	2.3.5.a.(1) G24	What types of tare may be used to determine the net weight of packaged goods? - Used Dry Tare	WWMA recommends changing the note. Note: When testing frozen foods with the Used Dry Tare approach, the frost found inside frozen food packages is included as part of the net contents**, except in instances in which glazed or frozen foods are tested according to Section 2.6. Drained Weight for Glazed or Frozen Foods.**	Note: from WWMA There seems to be a conflict between this note and Section 2.6. Drained Weight for Glazed and frozen Food. If 2.6. applies to frozen food, when would there be an instance to use used dry tare? Please see our comment on Section 2.6.
15	2.3.5.(3) G25	What types of tare may be used to determine the net weight of packaged goods? - Wet Tare	**Wet tare procedures must not be used to verify the labeled net weight of packages of meat and poultry packed at an official United States Department of Agriculture and bearing a USDA seal of inspection. The Food Safety and Inspection Service (FSIS) adopted specific sections of the 2005 4th Edition of NIST HB 133 by reference but not the "wet tare" method for determining net weight compliance. FSIS considers the free-flowing liquids in packages of meat and poultry products, including single-ingredient, raw poultry products, to be integral components of these products (see Federal Register, September 9, 2008 [Volume 73, Number 175] [Final Rule – pages 52189-52193]).**	Amended this section to reflect the USDA's decision not to adopt the section on wet tare when it updated its regulations on net quantity of contents testing in September 2008.
16	2.3.5(3) G25	What types of tare may be used to determine the net weight of packaged goods? - Wet Tare	Paragraph 2, sentence 2 change the following: If Wet Tare is used to verify the net weight of packages ~~**of fresh poultry, hot dogs, and franks that are subject to the USDA regulations**~~, the inspector must allow for moisture loss.	
17	2.3.5.(3) c & d G26	How is Tare weight determined?	Does the inspection of aerosol containers require special procedures? How is the tare of vacuum packed coffee determined?	WWMA recommends that the following two questions and answers appear out of place. We suggest moving them behind the next two questions (see line item 19)

Line item #	Section & Page Number	Title	Action	Comments
18	2.3.5.(3)f. G27	How are the tare sample and the tare weight of the packaging material determined?	Step 2: For sample sizes of 12 or more, subtract the individual tare weights from the **respective package** gross weights (Block a, minus Block b, on the report form) to obtain the net weight for each package and record ~~these~~ each value~~s~~ in Block c, "Net Wt.," on the report form.	
19	2.3.5.(3)f. G27	How are the tare sample and the tare weight of the packaging material determined?	Place information from line item 17 in this section after Step 6.	Recommendation from WWMA
Determine Nominal Gross Weight and Package Errors for Tare Sample				
20	2.3.6.a. G28	What is a nominal gross weight?	a. ~~***What is***~~***How do I compute*** *a nominal gross weight?*	
21	2.3.6.a. G28	What is nominal gross weight?	To compute the nominal gross weight, add the average tare weight (recorded in Box 13) to the labeled weight (recorded in Box 1). ~~**To obtain the package error, subtract a package's gross weight from the nominal gross weight.**~~	
22	2.3.6.b. G28	What is nominal gross weight?	Add the following: **How do I compute the package error?** **To obtain the package error, subtract the nominal gross weight from each package's gross weight. The package error is represented by the formula:** **Package error = gross weight − nominal gross weight**	
23	2.3.6.d G29	How is the total package error computed?	Be sure to subtract the minus package errors from the plus package errors and to record the total net error in Box 15**, indicating the positive or negative value of the error**	
Moisture Allowances				
24	2.3.8.b. G31	What are the moisture allowances for flour, and dry pet food?	*What are the moisture allowances for flour,* ~~***and***~~ *dry pet food* ***and other products?*** *(See Table 2-3. "Moisture Allowances.")*	Revised this section to include a table that collects the moisture allowances in one location in the handbook. Added guidance and examples explaining that allowances can be applied before or after the packages are tested.
25	2.3.8.b. G31 – G32	What are the moisture allowances for flour, and dry pet food?	Have the Table title read as: Table 2-3. Moisture Allowances **for Product in Distribution**	Recommendation from WWMA

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Table 2-3. Moisture Allowances		
If you are verifying the labeled net weight of packages of:	**The Moisture Allowance is:**	**Notes**
Flour	**3 %**	
Dry pet food	**3 %**	**Dry pet food means all extruded dog and cat foods and baked treats packaged in Kraft paper bags and/or cardboard boxes with a moisture content of 13 % or less at time of pack.**
Borax	**See Section 2.4.**	
Wet Tare Only		
If you are using Wet Tare in verifying the net weight of packages of one of the products listed below:	**The Moisture Allowance is:**	**Notice: Wet Tare must not be used in testing packages of meat and poultry subject to USDA regulations.**
Fresh poultry	**3 %**	**Fresh poultry is defined as poultry at a temperature of 3 °C (26 °F) that yields or gives when pushed with the thumb.**
Franks or hot dogs	**2.5 %**	
Bacon, fresh sausage, and luncheon meats	**0 %**	**For packages of bacon, fresh sausage, and luncheon meats, there is no moisture allowance if there is no free-flowing liquid or absorbent materials in contact with the product and the package is cleaned of clinging material. Luncheon meats are any cooked sausage product, loaves, jellied products, cured products, and any sliced sandwich-style meat. This does not include whole hams, briskets, roasts, turkeys, or chickens requiring further preparation to be made into ready-to-eat sliced product. When there is no free-flowing liquid inside the package and there are no absorbent materials in contact with the product, Wet Tare and Used Dried Tare are equivalent.**

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26	2.3.8.b. G32	What are the moisture allowances for flour, and dry pet food?	Delete: ~~**The moisture allowance for flour and dry pet food is 3 % of the labeled net weight.**~~ ~~**Note: Dry pet food means all extruded dog and cat foods and baked treat products packaged in Kraft paper bags and/or cardboard boxes with a moisture content of 13 % or less at the time of pack.**~~	
27	2.3.8.d. G33	What moisture allowance is used with wet tare when testing packages bearing a USDA seal of inspection?	d. What moisture allowance is used with wet tare**?** ~~***when testing packages bearing a USDA seal of inspection?***~~ **Wet tare procedures must not be used to verify the labeled net weight of packages of meat and poultry packed at an official United States Department of Agriculture and bearing a USDA seal of inspection. The Food Safety and Inspection Service (FSIS) adopted specific sections of the 2005 4th Edition of NIST HB 133 by reference but not the "wet tare" method for determining net weight compliance. FSIS considers the free-flowing liquids in packages of meat and poultry products, including single-ingredient, raw poultry products, to be integral components of these products (see Federal Register, September 9, 2008 [Volume 73, Number 175] [Final Rule – pages 52189-52193]).**	Comment from CWMA: Two questions remain. 1. What guidance can be provided for manufacturers with products other than those listed for moisture loss? 2. What methodology is necessary for manufacturers to demonstrate the data needed for moisture allowance? (see follow- up on line item 30)

Line item #	Section & Page Number	Title	Action	Comments
28	2.3.8.d. G33	What moisture allowance is used with wet tare when testing packages bearing a USDA seal of inspection?	**See Table 2-3 "Moisture Allowances – Wet Tare Only**." • **~~Use the following guideline when testing meat and poultry from any USDA inspected plant using Wet Tare and a Category A sampling plan.~~** • **~~For packages of fresh poultry that bear a USDA seal of inspection, the moisture allowance is~~** • **~~3 5 of the labeled net weight. For net weight determinations, only, fresh poultry is defined as poultry above – 3 ºC (26 ºF). This is a product that yields or gives when pushed with the thumb.~~** • **~~For packages of franks or hotdogs that bear a USDA seal of inspection, the moisture allowance is 2.5 % of the labeled net weight.~~** **~~For packages of bacon, fresh sausage, and luncheon meats that bear a USDA seal of inspection, there is no moisture allowance if there is no free-flowing liquid or absorbent materials in contact with the product and the package is cleaned of clinging material. Luncheon meats are any cooked sausage product, loaves, jellied products, cured products, and any sliced sandwich-style meat. This does not include whole hams, briskets, roasts, turkeys, or chickens requiring further preparation to be made into ready-to-eat sliced product. When there is no free-flowing liquid inside the package and there are no absorbent materials in contact with the product, Wet Tare and Dried Used Tare are equivalent.~~**	
29	2.3.8.d G33	What moisture allowance is used with wet tare when testing packages bearing a USDA seal of inspection?	When there is free-flowing liquid **and liquid ~~or absorbent~~absorbed by** packaging materials in contact with the product, all free liquid is part of the wet tare.	
30	2.3.8.e G33	How is moisture loss handled for products not listed in NIST Handbook 133?	**How is moisture loss handled for products not listed in NIST Handbook 133?** **Officials can test products for which no**	

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			moisture loss guidance has been provided. If studies are a necessity they should be a collaborative effort between officials and industry. Because of the potential impact on interstate commerce studies should be completed on a nationwide basis and not by individual jurisdictions unless circumstances justify only local consideration. **The amount of moisture loss from a package is a function of many factors not the least of which is the product itself (e.g., moisture content, texture and density), packaging, storage conditions (e.g., temperature, humidity, and air flow), time, handling and others. If a packaged product is subject to moisture loss officials must allow for "reasonable" variations caused by moisture either evaporating or draining from the product. Officials cannot set arbitrary moisture allowances based solely on their experience or intuition. Moisture allowances must be based on scientific data and must be "reasonable." Reasonable does not mean that all of the weight loss caused by moisture evaporation or draining from the product must be allowed. As a result of product and moisture variability the approach used by an official must be developed on a case-by-case basis depending on many factors to include, but not be limited to, the manufacturing process, packaging materials, distribution, environmental influence and the anticipated shelf life of the product.** **NIST Handbook 130 provides a starting point for developing a workable procedure in the Interpretation and Guideline Section 2.5.6. regarding "Resolution for Requests for Recognition of Moisture Loss in Other Packaged Products." Most studies involving nationally distributed products will require that products be tested during different seasons of the year and in different geographic locations to develop a nationally recognized moisture allowance. Some studies may require the development of laboratory tests used for inter-laboratory comparisons to establish**	

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			moisture content in products at time of pack or at the time-of-inspection. **Moisture loss or gain is a critical consideration for any net content enforcement effort and one that, in most cases, cannot be addressed solely by a field official. If moisture loss issues are to be deliberated, it is the regulatory official's responsibility to resolve the packers concern utilizing available resources and due process procedures. To fulfill this obligation the official may be required to utilize specialized test equipment and specific laboratory procedures. Additionally, the collection of adequate test data may require product examination over a broad geographical area and consideration of a wide range of environmental factors. If a national effort is required, a coordinated effort involving industry, trade associations, weights and measures officials, and federal agencies may be required. NIST will provide technical support upon request. If studies are a necessity they should be a collaborative effort between officials and industry and can be very time consuming depending on the product. Because of the potential impact on interstate commerce, studies must be completed on a nationwide basis and not by individual jurisdictions unless circumstances justify only local consideration.**	
31	2.3.8.e G33		e. **Moisture loss must be considered even when no formal allowance for the specific product is found in HB 133.**	Recommend change from Paul Hoffman, Kraft
Calculations				
32	2.3.9.a G34	How is moisture allowance computed and applied to the average error?	a. How is moisture allowance computed and applied to the ~~**average error**~~?	
33	2.3.9.b G35	**How is a Moisture Allowance made prior to determining package errors?**	**b. How is a Moisture Allowance made prior to determining package errors?** **If the Moisture Allowance is known in advance (e.g., flour and dry pet food) it can be applied by adjusting the Nominal Gross**	Comment from WWMA: Based on previous comments we suggest entirely removing the question – 2.3.9.b ***How is a Moisture Allowance made***

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			Weight (NGW) used to determine the sample package errors. The Moisture Allowance (MA) in Box 13a is subtracted from the NGW. The NGW which is the sum of the Labeled Net Quantity of Contents (LNQC e.g., 907 g) and the Average Tare Weight from Box 13 (for this example use an ATW of 14 g (0.03 lb)) to obtain an Adjusted Nominal Gross Weight (ANGW) which is entered in Box 14. **The calculation is: LNQC 907 g (2 lb) + ATW 14 g (0.03 lb) = 921 g (2.03 lb) - MA 27 g (0.06 lb) = ANGW of 918 g (1.97 lb) which is entered in Box 14.** **Package errors are determined by subtracting the ANGW from the Gross Weights of the Sample Packages (GWSP).** **The calculation is:** **GWSP – ANGW = Package Error.** **Note: When the NGW is adjusted by subtracting the Moisture Allowance value(s) the Maximum Allowable Variation(s) is not changed. This is because the errors that will be found in the sample packages have been adjusted by subtracting the Moisture Allowance (e.g., 3 %) from the NGW. That increases the individual package errors by the amount of the moisture allowance (e.g., 3 %). If the value(s) of the MAV(s) were also adjusted it would result in doubling the allowance.** **c. How is a Moisture Allowance made after determining package errors?** **You can make adjustments when the value of the Moisture Allowance is determined following the test (e.g., after the sample fails or if a packer provides a reasonable a moisture allowance based on data obtained using a scientific method) using the following approach:** **If the sample failed the Average and/or the Individual Package Requirements both of the following steps are applied.**	***prior to determining the package errors?***

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			If the sample failed the Average Requirement but has no unreasonable package errors only step 1 is used. If the sample passes the Average Requirement but fails because the sample included one or more Unreasonable Minus Errors (UMEs) only step 2 is used. **Step:** **1. Use the following approach to apply a Moisture Allowance to the sample after the test is completed. The Moisture Allowance (MA) is computed (e.g., 3 % x 907 g (2 lb) = 27 g (0.06 lb) and added to the Sample Error Limit (e.g., if the SEL is 0.023 add 0.06 to obtain an Adjusted SEL of 0.083). The ASEL (Adjusted Sample Error Limit) is then compared to the Average Error of the Sample and:** • **If the average error (disregarding sign) in Box 18 is smaller than the ASEL, the sample passes.** **HOWEVER,** • **If the average error (disregarding sign) in Box 18 is larger than the ASEL, the sample fails.** **2. If a Moisture Allowance is to be applied to the Maximum Allowable Variation(s), the following method is recommended:** **The Moisture Allowance (MA) is computed (e.g., 3 % x 907 g (2 lb) = 27 g (0.06 lb) and added to the value of the Maximum Allowable Variation(s) for the labeled net quantity of the package (e.g., MAV for 907 g (2 lb) is 31.7 g (0.07 lb) + 27 g (0.06 lb) = AMAV of 58.7 g). Compare each minus package**	

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			error to the AMAV. Mark package errors that exceed the AMAV and record the number of UME's found in the sample. If this number exceeds the number of unreasonable errors allowed, the sample fails. ~~**How is the Maximum Allowable Variation corrected for the moisture allowance?**~~ • ~~**Adjust the MAV by adding the moisture allowance to the MAV.**~~ ~~**Example: 907 g (2 lb) package of flour: moisture allowance added to the MAV = 31.7 g (0.07 lb) (MAV for 907 g [2 lb] package) + 27 g (0.06 lb) moisture allowance = a corrected MAV of 58.7 g (0.13 lb)**~~ • ~~**Correct MAV in dimensionless units by converting the moisture allowance to dimensionless units = 0.06 lb ÷ 0.001 lb = 60. Go to Box 4 and add the moisture allowance in dimensionless units to the MAV in dimensionless units.**~~ ~~**Example: MAV = 70 (MAV for 2 lb where the unit of measure = 0.001 lb) + 60 (moisture allowance in dimensionless units) = 130. Minus package errors must exceed the MAV ± gray area before they are declared "unreasonable errors."**~~ • ~~**If the number of unreasonable errors exceeds the allowed number (recorded in Box 8), the inspection lot fails.**~~ ~~**How is the average error for the moisture allowance corrected?**~~ ~~**If the minus average error (Box 18) is**~~	

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			~~**larger (disregarding the sign) than the SEL (Box 23) and moisture loss applies, compare the difference between Box 18 and Box 23 with the moisture allowance recorded in Box 13a. (Make sure that all the values are in units of weight or in dimensionless units before making this comparison.) If Box 13a is larger than the difference between Box 18 and 23, then the lot is considered to be in the gray area.**~~ ~~**Example: Box 13a for 2 lb flour is 60 (dimensionless units); Box 18 is 2 (dimensionless units); Box 23 is 0.550 (dimensionless units). The difference between Box 18 and Box 23 is 1.450 (dimensionless units). Since Box 13a is 60 (dimensionless units), Box 13a is larger than the difference between Box 18 and Box 23, the lot is considered to be in the gray area and further investigation is necessary before ruling out moisture loss as the reason for shortweight.**~~	
34	2.3.9.**d.** G37	What should you do when a sample is in the moisture allowance (gray) area?	Add the following title ***d. What should you do when a sample is in the moisture allowance (gray) area?*** When the average error of a lot of fresh poultry, franks, or hot dogs ~~**from a USDA inspected plant**~~ is minus, but does not exceed the established "moisture allowance" or "gray area," contact the ~~**appropriate USDA official and/or**~~ **packer or** plant management personnel to determine what information is available on the lot in question. Questions to the ~~**USDA official and/or**~~ **plant management representative** may include: Change the note to read : **Note:** If ~~**USDA or**~~ the plant management has data on the lot, such data may help to substantiate that the "lot" **had** met **the** net content requirements at the point of manufacture.	

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35	2.3.9. G37	What should you do when a sample is in the moisture allowance (gray) area?	**Reasonable** deviations from net quantity of contents caused by the loss or gain of moisture from the package are permitted when caused by ordinary and customary exposure to conditions that occur under good distribution practices.	
Borax				
36	2.4.b. Step 3 G39	How is the volume determined?	Step 3. Compare the net volume of the commodity in the package with the volume declared on the package. The volume declaration **must not ~~is not located~~ appear** on the principal display panel. **Instead, it will appear on the back or side of the package and may appear as: ~~The following example is how the declaration of volume should appear.~~**	Deleted 2530 cm^3 because that example caused confusion. The actual values on boxes of Borax vary with the package size, which may change frequently for marketing reasons.
The Determination of Drained Weight				
37	2.5. G39	Equipment	➢ For canned tomatoes a U.S. Standard Test Sieve with 11.2 mm ($^{7}/_{16}$ in) openings must be used	The AOAC (Association of Official Analytical Chemists) test procedure that FDA uses for drained weight determinations requires a different sieve size from what is required in the handbook to be used for canned tomatoes. A note was added to HB 133 so that the requirement matches the sieve size for canned tomatoes in AOAC 968.30 "Canned Vegetables Drained Weight Procedure."
Drained Weight for Glazed or Frozen Foods				
38	2.6. G41	Drained Weight for Glazed or Frozen Foods	2.6. **Determining the net weight of ice-encased frozen foods and ice glazed products**. **~~Drained Weight for Glazed or Frozen Foods~~**	Comment from WWMA: *We believe this procedure is truly intended for all frozen foods as indicated by the existing title. We have made extensive amendments to include additional foods and freezing methods and believe it more closely reflects the intent of the section and the current marketplace*
39	2.6. G41	Drained Weight for Glazed or Frozen Foods		Comment from NEWMA: Section 2.6. specifically references the use of glaze with frozen seafood. Glazed chicken wings are being seen in the marketplace. It was suggested that wording be added to include other glazed products such as frozen (glazed?) chicken.
40	2.6.a G41	How is the drained weight of frozen shrimp and crabmeat determined?	a. How is the drained weight of frozen shrimp ***(e.g., 2.27 kg (5 lb) frozen block of shrimp)*** and crabmeat determined?	

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41	2.6.a. G41	How is the drained weight of frozen shrimp and crabmeat determined?	a. How ~~is~~**should** the ~~**drained**~~**net** weight of frozen shrimp ~~**(e.g., 2.27 kg (5 lb) block of shrimp), and**~~ crabmeat, **meat or poultry, and similar products encased in ice and frozen into blocks or solid masses (i.e., not individually glazed) be** determined**?**	Comment from WWMA**:** Is this procedure truly intended for all frozen foods as indicated by the title or only SEAFOOD, as indicated by the example? We believe this section needs clarification.
42	2.6.a G41	How is the drained weight of frozen shrimp and crabmeat determined?	First paragraph, second sentence: Immerse the product **(e.g., a block of frozen shrimp)** directly in water in a mesh basket or open container to thaw (e.g., it is not placed in a plastic bag).	
43	2.6.a G41	How is the drained weight of frozen shrimp and crabmeat determined?	When determining the net weight of frozen shrimp**, crabmeat, meat or poultry products, or similar products that are encased in ice and frozen into blocks or solid masses**, use the test equipment and procedure provided below.	Recommendation from WWMA
44	2.6.a G42	How is the drained weight of frozen shrimp and crabmeat determined? - Equipment	• Water source and hose with a**n approximate flow rate of** 4 L to 15 L (1 gal to 4 gal) per minute **for thawing blocks and other products** ~~**flow rate**~~ • Sink or other receptacle [i.e., **bucket with a capacity of approximately** 15 L (4 gal) ~~**bucket**~~] **for thawing blocks and other products** • A wire mesh basket **(used for testing large frozen blocks of shrimp)** or other container that is large enough to hold the contents of 1 package (e.g., 2.27 kg or [5 lb] box of shrimp) and has openings small enough to retain all pieces of the product (e.g., an expanded metal test tube basket lined with standard 16 mesh screen)	
45	2.6.a G42	How is the drained weight of frozen shrimp and crabmeat determined? - Equipment	• A wire mesh basket **(used for testing large frozen blocks of shrimp or other products)** or other container that is large enough to hold the contents of 1 package (e.g., 2.27 kg or [5 lb] box of shrimp) and has openings small enough to retain all pieces of the product (e.g., an expanded metal test tube basket lined with standard 16 mesh screen)	Recommendation from WWMA

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46	2.6.a G42	How is the drained weight of frozen shrimp and crabmeat determined? - Test Procedure	Step 1: Place the unwrapped frozen shrimp, ~~**or**~~ crabmeat**, or meat, poultry, or seafood product** in the wire mesh basket and immerse in a 15 L (4 gal) or larger container of fresh water at a temperature between 23 °C to 29 °C (75 °F to 85 °F)	Recommendation from WWMA
47	2.6.b. G43	How is the net weight of glazed raw seafood and fish determined?	b. How is the net weight of **frozen,** glazed ~~**raw**~~seafood**,** ~~**and**~~fish**, poultry, meat, or similar products** determined?	
48	2.6.b. G43	How is the net weight of glazed raw seafood and fish determined?		Comment from NEWMA: Section 2.6. specifically references the use of glaze with frozen seafood. Glazed chicken wings are being seen in the marketplace. It was suggested that wording be added to include other glazed products such as frozen (glazed?) chicken.
49	2.6.b. G43	How is the net weight of glazed raw seafood and fish determined?	For **frozen,** glazed seafood**,** ~~**and**~~ fish, **poultry, or meat products, or similar products**, determine the net weight after removing the glaze using the following procedure.	Recommendation from WWMA
50	2.6.b. G43	How is the net weight of glazed raw seafood and fish determined? - Equipment	Use the equipment listed in Section 2.6. "***Determining the net weight of frozen, ice-glazed products*** ~~***Drained Weight for Glazed or Frozen Foods"***~~	Recommendation from WWMA Title change if agreed upon in Section 2.6.
51	2.6.b G43	How is the net weight of glazed raw seafood and fish determined? - Test procedures	Step 2: Weigh ~~**sieve and**~~ receiving pan. Record this weight on a worksheet as "~~**sieve**~~**pan** weight."	
52	2.6.b. G44	How is the net weight of glazed raw seafood and fish determined? - Test procedures	Step 3: Remove each package from low temperature storage; open it immediately and place the contents under a gentle spray of cold water. **Handle the product with care** to avoid ~~**breaking**~~**breakage**. ~~**the product**~~. Continue the spray**ing process** until all ice glaze, that is seen or felt is removed. In general, the product should remain rigid; however, the ice glaze on certain products, usually smaller sized commodities, sometimes cannot be removed without ~~**defrosting**~~ **partial thawing of** the product. Nonetheless, remove **all** ~~**the**~~ ice glaze, because it **may be** ~~**is**~~ a substantial part of the package weight.	

Line item #	Section & Page Number	Title	Action	Comments
53	2.6.b. G44	How is the net weight of glazed raw seafood and fish determined? - Test procedures	Step 4: ~~**Transfer the product to the weighed sieve.**~~	
54	2.6.b. G44	How is the net weight of glazed raw seafood and fish determined? - Test procedures	Step 5: **At the end of the drain time immediately transfer the entire product to the tared pan for weighing to determine the net weight.** Place the product and ~~**sieve**~~**pan** on ~~**receiving pan**~~**the scale** and weigh. Record this weight on a worksheet as the "~~**sieve**~~**pan** + product weight."	
55	2.6.b. G44	How is the net weight of glazed raw seafood and fish determined? - Test procedures	Step 6: The net weight of the product is equal to the weight of the pan~~**plus the sieve**~~ plus the product (record in step 5) minus the "~~**sieve**~~ **pan** weight" (recorded in step 2).	
56	2.6.b. G44	How is the net weight of glazed raw seafood and fish determined? - Test procedures	Step 7: Repeat steps 3 through 6 for each package in the sample, cleaning ~~**and drying**~~the sieve and **cleaning and drying** the receiving pan between package measurements.	
Chapter 3				
Gravimetric Test Procedure for Liquids				
57	3.2. G48	Test Procedure	Step 4: Tilt the flask gradually so the flask walls are splashed as little as possible **as the flask** is emptied.	
Other Volumetric Test Procedures				
58	3.4.a. G51	What other methods can be used to determine the net contents of packages labeled by volume? - Test Equipment	Plastic disks… change the second to last sentence and add the last sentence. • Each disk must have a 20 mm (¾ in) diameter hole through its center and a series of 1.5 mm ($^1/_{16}$ in) diameter holes 25 mm (1 in) **apart around the periphery of the disk and 3 mm ($^1/_8$ in)** from the outer edge. **All edges must be smooth**.	
59	3.4.b G51	How is the volume of oils, syrups, and other viscous liquids that have smooth surfaces determined?	2. Bring the temperature of both the liquid and the water to be used to measure the volume of the liquid to the reference temperature specified in Table 3-1. "Reference Temperatures for Liquids." **Verify with a thermometer that product has maintained the reference temperature.**	

Line item #	Section & Page Number	Title	Action	Comments
Mayonnaise and Salad Dressing				
60	3.5 G52	New	**3.5 How is the volume of** mayonnaise, salad dressing**, and other water immiscible products that do not have smooth and level surfaces determined?**	
Peat Moss				
61	3.10.(a) G64	How are packages of peat and peat moss labeled by compressed volume testing?	T**ake three measurements (both ends and middle) of each dimension and calculation their average. Multiply the averages to obtain the compressed cubic volume.**	
Ice Cream Novelties				
62	3.12 G68		**Note: The following procedure can be used to test packaged products that are solid or semisolid and that will not dissolve in, mix with, absorb, or be absorbed by the fluid into which the product will be immersed. For example, ice cream labeled by volume can be tested using ice water or kerosene as the immersion fluid.**	
63	3.12. G68		**Exception – Pelletized ice cream are beads of ice cream which are quick frozen with liquid nitrogen. The beads are relatively small, but can vary in shape and size. On April 17, 2009, the FDA issued a letter stating that this product is considered semisolid food, in accordance with 21 CFR 101.105(a). The FDA also addresses that the appropriate net quantity of content declaration for pelletized ice cream products be in terms of net weight.**	Recommendation from WWMA
Fresh Oysters Labeled by Volume				
64	3.13.a G73	Equipment	Area: 1935 cm^2 (300 in^2) or more for each 3.78 L (1 gal) of oysters (**Note: Strainers of smaller area dimensions are permitted to facilitate testing smaller containers.)**	

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The following items are editorial errors made by NIST during editorial review of current published HB 133				
Good Measurement Practices				
1a	1.7.(2) G15	Certification Requirements for Standards and Test Equipment	This must be done according to the **calibration procedures and other instructions found on NIST's Laboratory Metrology and Calibration Procedures website at http://ts.nist.gov/WeightsAndMeasures/CalibrationProcedures .cfm** ~~**in NIST Handbook 145, "Handbook for the Quality Assurance of Metrological Measurements,"**~~or **using** other recognized procedures (e.g., those adopted for use by a state weights and measures laboratory).	Amended this section to refer users to NIST's Calibration Procedures website which provides information on laboratory test procedures. Many of those on the website supersede those in NIST Handbook 145 which is cited in current text. The information presented at this URL is regularly updated by the Weights and Measures Division Metrology Group. State laboratories use this as a primary source for calibration information.
Measurement Standards and Test Equipment				
2a	2.2.f.(3) G19	Which performance tests should be conducted to ensure the accuracy of a scale? – Shift Test	**Bench Scales or Balance** use a test load equal to one-~~**half**~~**third** of the "maximum test load" used for the "increasing-load test." For bench scales (see Diagram 1. **"Bench Scales or Balance"),**~~**place**~~ **apply** the test load **as nearly as possible at the center of each quadrant of the load receiving element as shown in Diagram 1. "Bench Scale or Balance."** ~~in the center of four separate quadrants, equidistant between the center and edge of the load receiving element and~~ **For Equal Arm Balances use a test load equal to one-half capacity centered successively at four points positioned equidistance between the center and the front, left, back, and right edges of each pan as shown.** Determine the accuracy in each quadrant for **(see Diagram 2.** "**Equal-Arm Balance)**." For example, where the load-receiving element is a rectangular or circular shape, place the test load in the center of the area represented by the shaded boxes ~~**in the following diagrams**~~.	Amended this section to reflect the changes made in 2007 to the shift test procedures in NIST HB 44, Section 2.20. Scales under N.1.3.7. All Other Scales…. The change in HB 44 reduced the test-load to $^1/_3$ maximum nominal capacity and amended the requirement on placement of the test load on the load receiving element. The test pattern in Diagram 1 has been changed to reflect the new requirement.

The following items are editorial errors made by NIST during editorial review of current published HB 133

Diagram 1. Bench Scales or Balance

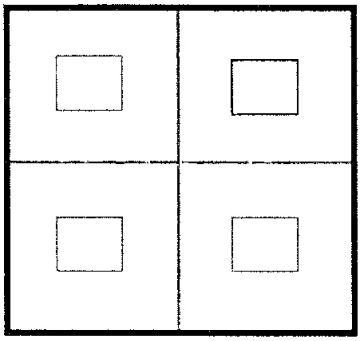
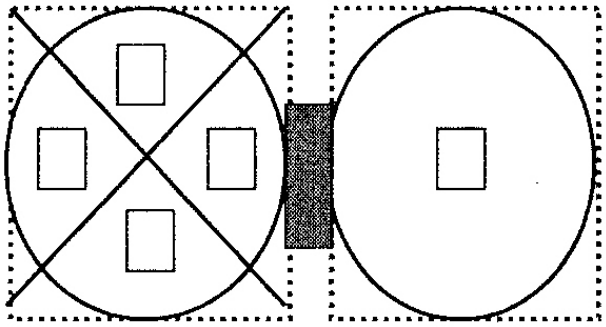


Diagram 2. Equal-Arm Balance



Measurement Standards and Test Equipment				
3a	2.2.(3)g G20	Which Standards Apply to Other test Equipment.	add the URL: These publications may be obtained from the ~~**Office of**~~ Weights and Measures **Division (http://www.nist.gov/owm)** or the U.S. Government Printing Office.	
Basic Inspection Procedure and Recordkeeping				
4a	2.3.3.d. G24	Where are Maximum Allowable Variations found?	Added a missing ● and reference to "Table 2-9." ● packages bearing a USDA seal of inspection – Meat and Poultry "See Table 2-9."	NIST in error missed this during editorial review of published HB 133
Tare Procedures				
5a	2.3.5.a(1) G25	Used Dry Tare	Note: When testing frozen foods with the Used Dry Tare approach, the frost found inside frozen food packages is included as part of the net contents.	Within HB 133 3rd Edition, Section 3.12. Frozen Food and Other Frozen Products the following note was omitted from the 4th Edition print.
Moisture Allowances				
6a	2.3.8.b. G31	Table 2-3 Moisture Allowances	Corrected a misprint in the moisture allowance for packages of fresh poultry to read 3 %.	NIST in error missed this during editorial review of current published HB 133
Other Volumetric Test Procedures				
7a	3.4. G51	What other methods can be used to determine the net contents of packages labeled by volume?	Updated standards ➢ Class A 500 mL buret that conforms to ASTM E287 ~~**94**~~ **2(2007)**, "Standard Specification for Laboratory Glass Graduated Burets" ➢ Class A Pipets, calibrated "to deliver" that conform to ASTM E969 ~~**95**~~-**02(2007)**, "Standard Specification for Glass Volumetric (Transfer) Pipets"	

The following items are editorial errors made by NIST during editorial review of current published HB 133

Test Viscous Materials				
8a	3.9 G63	Such as Caulking Compounds and Pastes	Update Standard: Calibrate the density cup gravimetrically with respect to the contained volume using the procedure in ASTM E**5**42 ~~94~~**01(2007)**, "Standard Practice for Calibration of Laboratory Volumetric Apparatus."	Update standard
Peat Moss				
9a	3.10.b. G64	How are packages of pet and pet moss labeled by compressed volume tested?	Update the standard in the second question. The procedure is based on ASTM D2978-~~90~~**03**, "Standard Method of Test for Volume of Processed Peat Materials."	Update ASTM standard
Mulch and Soils Labeled by Volume				
10a	3.11.(b) G66 – G67	Mulch and Soils Labeled by Volume	Modify table – The tables format was simplified and the SI units were changed to millimeters	

Table 3-4. Specifications for Test Measures for Mulch and Soils

Nominal Volume of Test Measure	Interior Wall Dimensions*			Marked Intervals on Interior Walls ***	Volume Equivalent of Marked Intervals
	Length	Width	Height**		
30.2 L (1.07 ft^3) for testing packages that contain less than 28.3 L (1 ft^3 or 25.7 dry qt)	203.2 mm (8 in)		736.6 mm (29 in)	**12.7 mm (½ in)**	524.3 mL (32 in^3)
28.3 L (1 ft^3)	**304.8 mm (12 in)**				1 179.8 mL (72 in^3)
56.6 L (2 ft^3)	**406.4 mm (16 in)**	**228.6 mm (9 in)**	**1219.2 mm (48 in)**		
84.9 L (3 ft^3)					
Measures are typically constructed of **12.7 mm**~~1.27 cm~~ (½ in) marine plywood. A transparent sidewall is useful for determining the level of fill, but must be reinforced if it is not thick enough to resist distortion. If the measure has a clear front, place the level gage at the back (inside) of the measure so that the markings are read over the top of the mulch.					

11a	3.11.d. G68	Mulch and Soils Labeled by Volume – "How are package errors determined?"	Package Error = Package Net Volume − Labeled volume	NIST in error left out the "-" during the editorial review of the current published HB 133

The following items are editorial errors made by NIST during editorial review of current published HB 133				
Test Procedure for Cylinders Labeled by Volume				
12a	3.14.2.a. G78	How is it determined if the containers meet the package requirements using the volumetric test procedure?	Change #5 to read as follows: Using NIST Technical Note 1079 "Tables of Industrial Gas Container Contents and Density for Oxygen, Argon, Nitrogen, Helium, and Hydrogen" **(available on-line at (http://www.nist.gov/owm)** determine the value (SCF/CF) from the content tables at the temperature and pressure of the cylinder under test	Added website information
13a	3.15. G79	Firewood	Editorial: Make 3.15 Main Title, subtitle firewood categories	
Chapter 4				
Packages Labeled by Count of More than 50 Items				
14a	4.4 G86	Packages Labeled by Count of More than 50 Items; Audit Procedure	Item 9: Added a minus symbol to the equation between Actual Package Gross Weight and Nominal Gross Weight.	NIST in error left out the "-" during the editorial review of the current published HB 133
Special Test Requirements for Packages Labeled by Linear or Square Measure (Area)				
15a	4.6 G90	Are there special measurement requirements for packages labeled by dimensions?	Updated Standard: When testing yarn and thread apply tension and use the specialized equipment specified in ASTM D1907-~~**97**~~**07**, "Standard Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method," in conjunction with the sampling plans and package requirements described in this handbook.	Updated ASTM Standard
Polyethylene Sheeting				
16a	4.7 G92	Which procedures are used to verify the declarations on polyethylene sheeting and bags? Test Procedure	Updated the year (98) of approval referenced in ASTM Standard D 1505 ~~**98**~~-**03**, "Standard Method of Test for Density of Plastics by the Density Gradient Technique."	Updated ASTM Standard
Packages Labeled by Linear or Square (Area) Measure				
17a	4.8 G97	Packages Labeled by Linear or Square (Area) Measure. – Test Procedure	Item 11: Added a minus symbol to the equation between Package Gross Weight and Nominal Gross Weight.	NIST in error left out the "-" during the editorial review of the current published HB 133
Baler Twine - Test Procedure for Length				
18a	4.9 G99	Equipment	Item 5: Added a minus symbol to the equation between Package Gross Weight and Nominal Gross Weight.	NIST in error left out the "-" during the editorial review of the current published HB 133