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National Institute of Standards and Technology

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Report of the 74th National Conference on Weights and Measures

1989

Report of the

74th National Conference on Weights and Measures 1989

Sponsored by the National Institute of Standards and Technology, Attended by Officials from the Various States, Counties, and Cities, and Representatives from U.S. Government, Industry, and Consumer Organizations Seattle, WA July 16–21, 1989

Report Editors: Albert D. Tholen
Carroll S. Brickenkamp
Ann Heffernan-Turner

NOTE: As of 23 August 1988, the National Bureau of Standards (NBS) became the National Institute of Standards and Technology (NIST) when President Reagan signed into law the Omnibus Trade and Competitiveness Act.

U.S. Department of Commerce
Robert A. Mosbacher, Secretary

National Institute of Standards and Technology
Raymond G. Kammer, Acting Director

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Abstract

The 74th Annual Meeting of the National Conference on Weights and Measures (NCWM) was held at the Westin Hotel in Seattle, Washington during the week of July 16 through 21, 1989. The theme of the meeting was "National Uniformity Benefits Everyone."

In his address to the delegates, Chairman John Bartfai of New York urged all States to adopt National Conference on Weights and Measures' standards and train their staff to use recommended test methods as provided through the Conference technical committees. In the Keynote Address, Conference President Raymond Kammer, National Institute of Standards and Technology Acting Director, provided a progress report on the National Institute of Standards and Technology's new organization, and urged the delegates to maintain their third-party objectivity, as well as the integrity and quality of their technical work.

The Conference set standards for equipment and sales practices in the area of cash/credit pricing of retail motor fuel, and also adopted a specification that permits the use of electronic data audit trails to be used for security assurance. Sweeping changes to the Uniform Weights and Measures Law and the Uniform Weighmaster Law were also adopted; if a State chooses to adopt these new standards, a system of administrative hearings and civil penalties could serve as an alternative to criminal prosecution.

Special meetings included those of the Metrologists' Workshops, the Associate Membership Committee, the Retired Officials Committee, the Scale Manufacturers' Association, the Industry Committee on Packaging and Labeling, the state regional weights and measures associations, and National Association of State Departments of Agriculture Weights and Measures Division.

Reports by the standing and annual committees of the Conference comprise the major portion of this publication, along with the addresses delivered by Conference officials and other authorities from government and industry.

Key words: legal metrology; specifications and tolerances; training; type evaluation; uniform laws and regulations; and weights and measures.

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Note: Opinions expressed in non-NIST papers are those of the authors and not necessarily those of the National Institute of Standards and Technology. Non-NIST speakers are solely responsible for the content and quality of their material.

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CONFERENCE	YEAR	CHAIRMAN
43rd	1958	J. P. McBride, MA
44th	1959	C. M. Fuller, CA
45th	1960	H. E. Crawford, FL
46th	1961	R. E. Meek, IN
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48th	1963	C. H. Stender, SC
49th	1964	D. M. Turnbull, WA
50th	1965	V. D. Campbell, OH
51st	1966	J. F. True, KS
52nd	1967	J. E. Bowen, MA
53rd	1968	C. C. Morgan, IN
54th	1969	S. H. Christie, NJ
55th	1970	R. W. Searles, OH
56th	1971	M. Jennings, TN
57th	1972	E. H. Black, CA
58th	1973	George L. Johnson, KY
59th	1974	John H. Lewis, WA
60th	1975	Sydney D. Andrews, FL
61st	1976	Richard Thompson, MD
62nd	1977	Earl Prideaux, CO
63rd	1978	James F. Lyles, VA
64th	1979	Kendrick J. Simila, OR
65th	1980	Charles H. Vincent, TX
66th	1981	Edward H. Stadolnik, MA
67th	1982	Edward C. Heffron, MI
68th	1983	Charles H. Greene, NM
69th	1984	Sam F. Hindsman, AR
70th	1985	Ezio F. Delfino, CA
71st	1986	George E. Mattimoe, HI
72nd	1987	Frank Nagele, MI
73rd	1988	Darrell A. Guensler, CA

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Mississippi	John Tillson	None
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West Virginia	None	None
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Wyoming	Victor Gerber	Jim Bigelow

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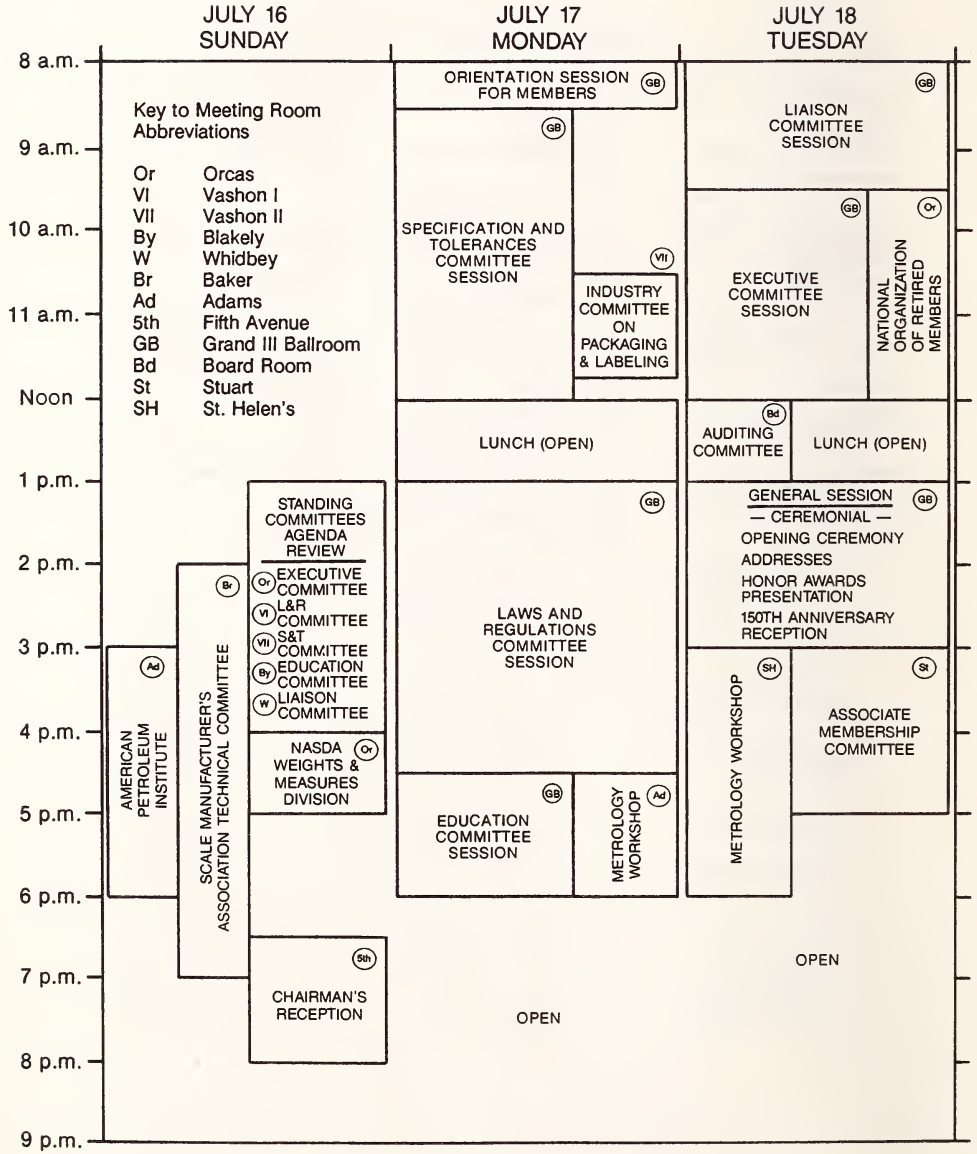
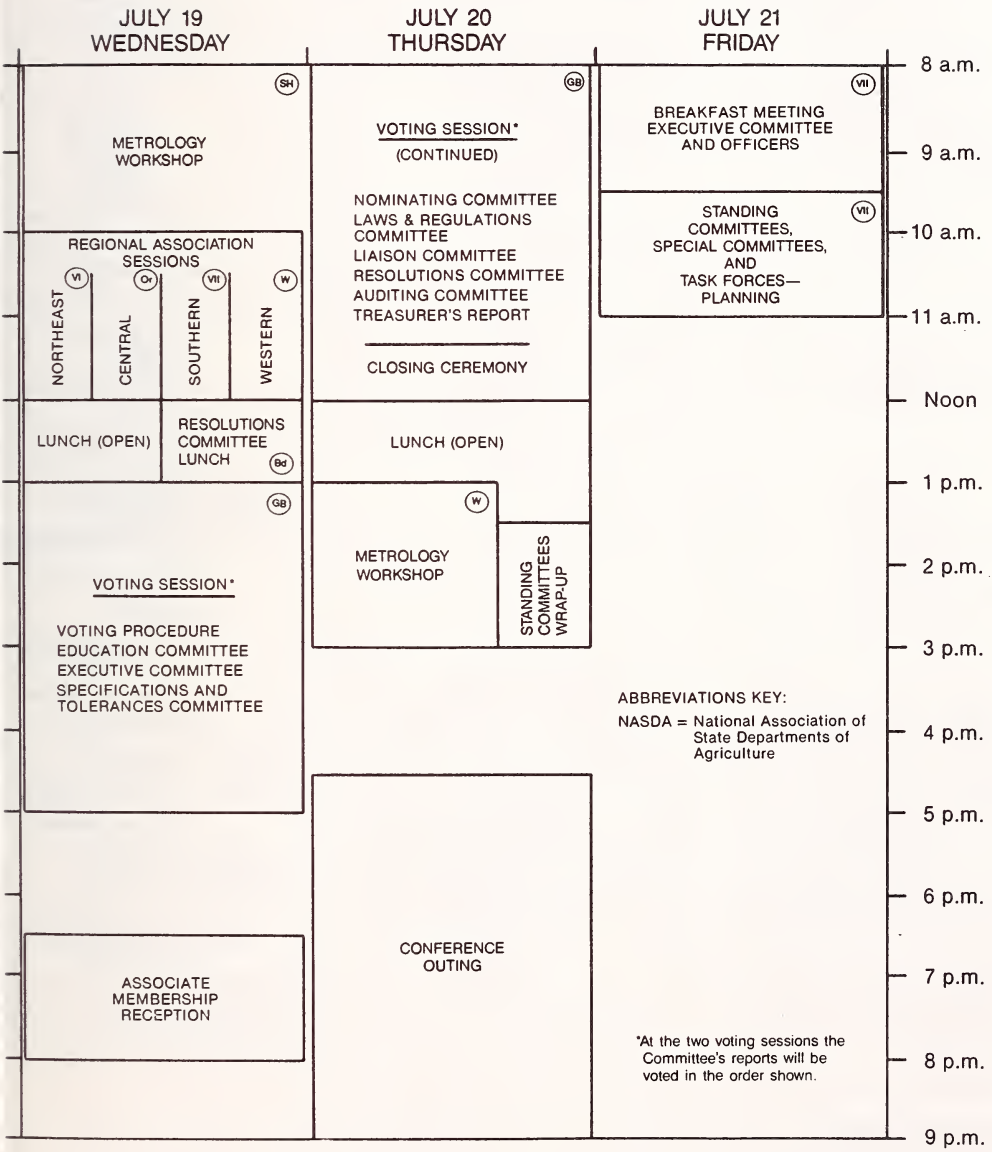


74th ANNUAL MEETING



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* Replaced S. Rosenthal, NY, at Annual Meeting

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n - Non-Voting Members
e - Ex-Officio Members

Numbers in Parentheses Refer to Years Remaining to Serve on Committees

State and Local Government Officials are Identified by their State Abbreviations

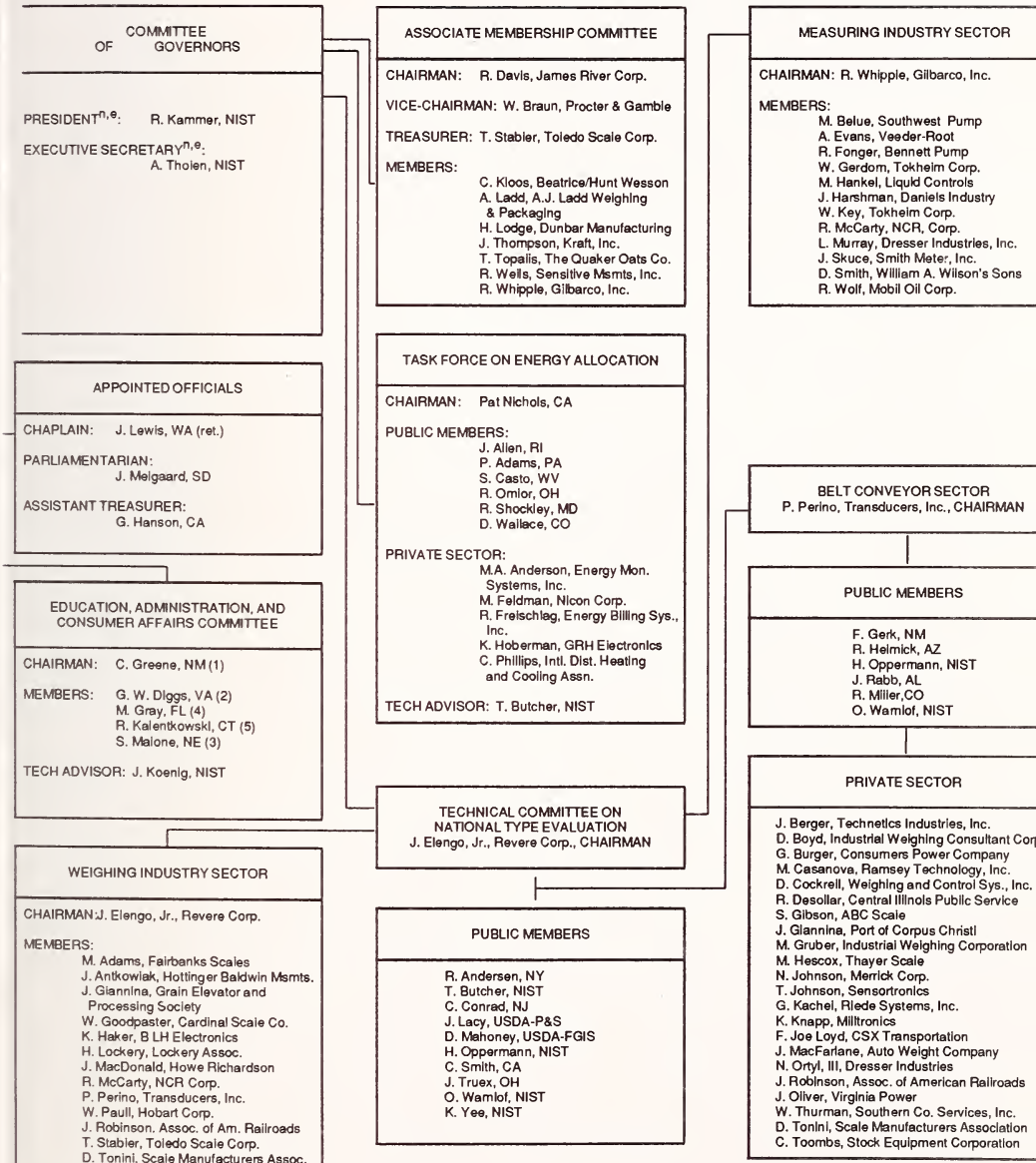
USDA - U.S. Department of Agriculture
P&S - Packers & Stockyards Admin.
FGIS - Federal Grain Inspection Service
OIML - International Organization of Legal Metrology

NIST - National Institute of Standards and Technology (Formerly National Bureau of Standards)

Revised - August, 1989

ON WEIGHTS AND MEASURES

SPECIAL COMMITTEES AND TASK FORCES



General Session

Welcoming Address

Honorable Charles Royer
Mayor of Seattle, Washington

I am here to offer a word of welcome to our city. This is the first time that the Conference has been in Seattle in its 74-year history, and we are delighted that you all are here. I would like to thank Sterling McFarland, Supervisor of our Weights and Measures Section, and Andy Lofton's department, Licenses and Consumer Affairs, in the City for helping on the host committee.

As I said, we are pleased that you are here. The Convention and Visitor Industry is a growing and important part of every city's economic base. It is important for us to continue to attract these national meetings. I was noticing that you have at your tables a survey that asks you to rank the current and past eight Conferences in terms of which city/hotel combinations you thought resulted in the best meeting. We hope that you end up writing Seattle down as your favorite conference. Lots of people who visit Seattle for the first time are stunned at the beauty of our city and perhaps were unaware that up in the Northwest corner of the United States you find such a beautiful, undiscovered place as ours.

As I was saying, the convention business is very important. We had a huge convention right after we opened our convention center. It was a church organization, I will not tell you which denomination, but they were here (about 14,000 of them) and we expected big things of them; however, they came with the Ten Commandments in one hand and a 10-dollar bill in the other and never broke either one. So they did not exactly measure up - but I think you probably will from what I am told.

I usually invite our guests to go down and visit the Pike Place public market - the beautiful old Farmer's Market not far from this hotel. But I was asked to make an exception in your case by the fish merchants and the produce people - so I don't know if that's telling our weights and measures officials something or not.

The work that you do is of course known to me through our Department of Licenses and Consumer Affairs. I believe it is important work, and that these National Conferences are important places for technical advances, for information exchange. I know in my own association of cities I almost never come back from one of our conferences without some good idea that I can put to work in my own city, and I'm sure you will find that the case in this meeting. We know that we can learn from the technical expertise that is assembled here in our city.

I just want to say that it is clear that the cooperation among business interests, the government, and the technical people in your field is very commendable. I wish that all public/private relationships were as cooperative and supportive.

Let me just urge that you take some time out from your schedule to look over the city. It is a little tough to get around sometimes because we are still building the city. We had a visitor here a few months ago when the whole town was torn up who said, "This is a very nice city, why are you tearing it down?" Actually, what we are doing is trying to build it up - so I hope you get a chance to walk around our downtown, visit the water, visit the neighborhoods in the city, and have a very pleasant experience and come back soon. Thank you very much.

Keynote Address

Raymond G. Kammer
Acting Director, National Institute of Standards and Technology

I am very pleased to have been invited to address this General Session of our 74th Annual Meeting. I refer to it as "our" annual meeting because I believe that the National Institute of Standards and Technology (NIST) should be very close to the Conference and that we have a shared responsibility to provide the United States with the basis for weights and measures and for fair trade. We cannot fulfill this responsibility separately - we can only do it together; therefore, it is important for the country that we cooperate.

I am proud of the cooperation that we have achieved so far. The joint efforts that we have undertaken, in my opinion rather successfully, include the National Type Evaluation Program and the National Training Program. The establishment of both of these new programs and the updating and strengthening of older programs, such as the State Standards Program, show that the Conference remains modern and progressive, and I hope show that NIST has also and that together we have been effective.

I am proud of our support to the Conference, and I think the leadership of the Conference has a right to be proud of their accomplishments. We thank you all for it. Of course many of you know there have been significant changes. Ten years ago I think one would have said that our relationship was based almost exclusively on the provision of uniform standards of marketplace measure. Gradually this role has broadened to include a lot more interaction with industry. Emblematic of that is the more than a thousand members of the Conference who are from the private sector. Your associate members have been very active in the committee work and NTEP and in the development of the training modules. I believe that this trend is a reaction to the fact that close association of government and industry is now perceived by our society as essential to the health of our economy.

I'm going to comment on some of the plans for the future of the Conference in a few minutes, but first I would like to take this opportunity to bring you up to date on some of the things that are happening at NIST and give you my view of our future role at the National level.

As I mentioned, our society now recognizes that government and industry have to work more closely together. Closer collaboration with U.S. industry is at the heart of the recent name change from the "National Bureau of Standards" to the "National Institute of Standards and Technology" and the change in our mission resulting from passage of the Omnibus Trade and Competitiveness Act in August 1988. In this Act, Congress describes NIST's role as follows: "To enhance the competitiveness of American industry while maintaining its traditional function as lead national laboratory for providing the measurements, calibrations, and quality assurance techniques which underpin United States commerce, technological progress, improved product reliability and manufacturing processes, and public safety." It is not an accident that they say first they would like us to work on the competitiveness of American Industry and only later do they mention the more traditional responsibilities concerning "measurements" and "calibrations" and "quality assurance." Measurement used to be our primary mission. Congress now says that it is still an important mission, but the competitiveness of U.S. industry is more important. Striking a balance between that assignment from Congress and our traditional mission and the demands that are placed on us by industry, and indeed by the Conference itself, is going to be a challenge for the leadership of NIST in the next 5 years.

The Congress also said that NIST should ."..assist industry in the development of technology and procedures needed to improve quality, to modernize manufacturing processes, to insure product reliability, manufacturability, functionality, and cost effectiveness." Again you see the phrase "assist industry" and the words "quality,"

"modernized manufacturing," "product reliability," "manufacturability," "cost effectiveness," which are not metrology words.

Congress went on to say we should "..facilitate the more rapid commercialization, especially by small and medium-sized companies throughout the United States, of products based on new scientific discoveries in fields such as automation, electronics, advanced materials, biotechnology, and optical technologies." We have always worked with small and medium-sized business, so that is nothing new; but, Congress says we should now work on such specific technologies as "advanced materials" "biotechnology," and "optical technology." Indeed, we have already begun to work in these areas.

I am going to tell you a little bit about what we imagine the future looks like, and, of course, I will start with the budget - that is where everybody starts. Those of you who run Weights and Measures programs in the States know that that is the place where most of the decisions get made. We are still in the midst of our fiscal year 1991 budget process, but I can tell you the five major thrusts of our budget initiatives. These are:

- o Information Technology
  - Optical Communications - Lightwave
  - Digital Communications - ISDN
  - Digital Data and Imaging
  - Computer Security - Viruses
- o Intelligent Machines and Processes
  - Intelligent Processing of Materials and Parts
  - Composites Technology
  - Bioprocess Technology
  - Product Data Exchange Specifications - PDES
- o Standards and Information for Quality Improvement
  - Chemical Measurements and Standards
  - High Technology Databases
  - Microwave Measurement Technology
  - Quality
- o Electronic Technology
  - Semiconductor Electronics
  - Superconductivity Electronics
  - Atomic Scale Electronics
- o Technology Services
  - Manufacturing Technology Centers
  - State Assistance Services
  - Inventions Evaluation Program
  - Advanced Technology Program

The Technology Services initiative covers the new responsibilities under the Trade and Competitiveness Act that I alluded to earlier. One of the challenges that NIST management faces is to make sure that the new trade act responsibilities do not supplant the traditional measurement responsibilities. That is an issue that I think will be of particular interest to the Conference over the next year.

I would like to talk a little more about the future. First NIST's and then the Conference's. Of course there are a lot of unknowns in our environment - there are a lot of unknowns in everyone's environment. Casey Stengel, I believe, once said, "Predictions are very difficult especially when you make predictions about the future."

I am keeping four points in mind as I do what I can to bring about the sort of future I think NIST should have. The first point is that industry is our primary clientele. Actually, they already were before Congress told us that we ought to focus more on the competitiveness of industry. Second, it is important that NIST's investment in research and measurement keep pace with the Federal Government's investment in research. Third, it is also important for NIST to respond to the immediate interests of our society. Undertaking the new responsibilities assigned to us by the Trade and Competitiveness Act is one way of responding to these interests; but, I would say that we should not do so at the expense of our measurement mission. Our measurement mission is unique; no one else is doing it and no one else is apt to do it if we do not. Finally, I tell my staff that I am very confident NIST will be a successful organization as long as it is able to maintain the integrity and the quality of its technical work; as long as it remains objective or, as we say, maintains a "third party objectivity;" and it maintains the high quality of its staff, facilities, and equipment.

I said earlier I was going to talk about the future of the Conference. It may be a bit presumptuous for me to be giving advice to many of you whom I have never met before; however, I am from Washington and the definition of an expert in Washington is "somebody who's left town." So I will be presumptuous and suggest to you - especially to those of you who work in the State Weights and Measures Offices - that you can enhance the quality of your own program and, therefore, your own effectiveness if you think about the ways to success that I just mentioned. Namely, maintaining the integrity and quality of your technical work; your third party objectivity; and the quality of your staff, facilities, and equipment. Of course you, like NIST, must achieve this in spite of the budget limitations that all of us are facing. In regard to integrity and quality of technical work at the State level, there are two opportunities that seem to be pressing. You might even say these opportunities are confronting the States right now; however, they are opportunities to improve the future performance at the State level. One of them is in the area of mass and the other is in the area of petroleum analysis.

You may remember that about 1970 all 50 States received from the then National Bureau of Standards a full set of devices for making mass, volume, and length measurements. Part of the deal was that, in return for the new devices, each State would modernize its own measurement facilities. Only about half the States have made improvements since then.

NIST is now working with a number of the States on a research project that could result in the States performing mass determinations at virtually the same level of accuracy as NIST. The idea here is to develop a kit that contains the facilities for computerized printouts of calibration results and temperature sensors. I recommend the project to those States that have not yet considered it. It may be that it would benefit the industry in your State and, as a result, your economy.

Another opportunity that is confronting us has to do with petroleum quality analysis. I think that, whether we want it or not, we are going to see alcohol blends and blending pumps. We see them in some States now, and I do not think it will be long before all States have them. Senator Glenn recently introduced a bill that would encourage gasohol use in the United States; this is only one example of the efforts to promote these products. Eventually our society will exploit this opportunity, and we will have to be prepared to provide the proper measurements.

An interesting thing has happened in the States that have already started preparing themselves - those States that have upgraded and improved their measurement services. They find that they get more support from industry, more demands also, but the support they get is reflected in the positive actions of their legislatures on weights and measures issues.

Concerning the maintenance of "third party objectivity," my advice here to the State weights and measures officials is to consider defending, perhaps even aggressively, the regulatory mission that is associated with your offices. There has been a trend in some States to have weights and measures inspections done by private sector firms. A conflict-of-interest problem arises when these same firms vend repair services for scales and other measuring devices that are broken. In such a situation, it is difficult to maintain third party objectivity. If your State is considering private sector involvement in weights and measures regulation and you do not think it is an appropriate thing, NIST will be happy to provide you or your political leaders with advice.

A second aspect of third party objectivity is to make sure that the standards that we adopt are enforceable in the

field. The Conference, I believe, has violated this precept because it has adopted a temperature range for testing scales that goes from about -10 °C to about 40 °C. At the present time, only three States can test over that range. I suggest to you that it is hard to command respect for standards that most people cannot implement.

Finally, a word about maintaining the high quality of staff, facilities, and equipment. We all know our society is becoming a much more complex place. As a result, to be a successful State metrologist now you really need to have a math and a statistics background and you probably need a bachelor's degree in science with lab experience. If you are a weights and measures field inspector, you can see from looking at the revised Handbook 133 that a background in statistics is becoming necessary to do the job. Of course, not everyone has this type of training, but one of the ways that we can solve that problem is by increasing on-the-job training. I am a very strong advocate of on-the-job training; that is why we are supporting the development of training modules. I encourage you to make a commitment in your budget to providing on-the-job training using the NCWM's training modules, 12 of which have been published so far.

Another key issue in maintaining quality is investing in new facilities - this includes investing in computers. One of the ideas that Al Tholen has been pushing very hard is getting States to build electronic linkages with other States and NIST through the use of modems and bulletin boards. Using this new form of technology transfer would allow States to share regulatory information and techniques rapidly.

Of course, we are all faced with some very tough challenges in the next 5 or 10 years. We all have a lot to do. The Conference is doing its part. It is a meeting place for the public and the private sectors, and it has been a very effective partner of NIST's in the transfer of measurement technology to an ever larger constituency. I recommend that the States consider what they can do. I suggest, first of all, that the States adopt all of the uniform laws and regulations recommended by this Conference. It is reasonable for industry and for private individuals to expect to get exactly the same results from the weights and measures point of view anywhere in the United States. Indeed, the Constitution states that expectation, and we need a uniform U.S. market environment in the United States in order for our products to compete with those of other countries in the international marketplace. I also encourage the States to formalize their training programs and to upgrade their investment in their laboratories.

Industry also can contribute to the success of the National Conference by using the products of the Conference, by increasing their support for the development and delivery of the training modules, and by continuing to share their skills and their knowledge with the Conference.

The United States currently has the best marketplace in the world - we must, everyone is coming here and selling. We must be successful in maintaining and improving that marketplace for the benefit of all of our people. For overall success, each one of us and each organization must be successful. Let us dedicate ourselves to attain that success - together. Let us work together to prove that **our historic partnership is a partnership for the future.**

Chairman's Address

John Bartfai
Director, Bureau of Weights and Measures
State of New York

National Uniformity Benefits Everyone

I would like to open my remarks with a policy in New York State. Last year's policy was "do more with less"; this year we have a new policy: "do more with nothing." There is humor in weights and measures - if you can find it.

This year marks the 74th Meeting of the National Conference. Much has been done to achieve uniformity; however, much more is needed. For example, the requirements in Handbook 44 are recognized as the official specifications and tolerances for weighing and measuring devices in all 50 states. Uniform application of these requirements, however, is another matter. Appropriate adoption and training must follow.

The Specifications and Tolerances Committee does a tremendous job in keeping up with new technologies with the expert input from industry, but the results are transparent unless we, as the regulatory officials, understand them and enforce them properly and uniformly. The Laws and Regulations Committee keeps up with all the packaging and labeling changes and methods of sale and the current Federal regulations. These efforts must extend into the State and local governments before uniformity will exist. For example, we very graciously vote for everything in Handbook 130, but how much of it gets adopted and then finally put into play? In the meantime, industry needs regulatory uniformity. There are new technologies out there, and it is up to us to facilitate their implementation.

The Education Committee continues to develop training modules. I am pleased with the rapid expansion of training throughout the country using their modules. One obstacle has been the lack of trained instructors. The Executive Committee has addressed this issue by giving the Education Committee $10,000 last year to purchase train-the-trainer materials. We have given them another $10,000 for instructor training for this year. In addition, the NIST Office of Weights and Measures has hired a new staff person to assist in training.

The National Type Approval Program is active and almost totally accepted across the United States now. However, the question of uniform enforcement has been raised. NTEP will not work without enforcement. The Certificate of Conformance (COC) means nothing unless we, the regulatory body, verify that the device being placed into service is actually the one described in the COC; for example, examining load cells in a vehicle scale to determine that they are indeed the ones that were approved. We recently examined a scale in New York State that contained six identical load cells, and I mean they were identical, right down to the same serial number. I have requested that manufacturer to explain how he can produce such perfect duplicates. Each installation must be given a proper test - the COC is not a guarantee that the device is accurate. The COC is only a guarantee that that device meets the specifications. It will have to be tested to determine if it is accurate and adjusted to bring it within tolerance. Without enforcement, NTEP becomes another transparency.

Handbook 133 is a great document; but it needs further work. Why do we have two sets of tables for MAV's? Are the food products so different in meat and poultry? Industry is seeking relief; you heard them in the L and R Committee. They are asking for one standard and uniform enforcement of that standard. Therefore, as we begin our deliberations, let us keep in mind our goals of uniformity. Debate the issues and vote wisely, always keeping in mind your morale obligation to implement and enforce what you agree to - for it is only through uniformity that weights and measures can ensure that equity prevails in the marketplace.

Honor Awards Presentations

Raymond Kammer, President of the Conference, presented Honor Awards to members of the Conference who, by attending the 74th Annual Meeting this year, reach one of the attendance categories for which recognition is made - attendance at 10, 15, 20, 25, 30, and 35 years.

10 YEARS

Max Casanova, Ramsey Engineering Company
Alexander Eska, City of Linden, New Jersey
Stephen McGuire, State of Illinois
James Moreillon, Floyd County, Indiana
Peter Perino, Transducers, Inc.
Joseph Rothleder, State of California

15 YEARS

Sidney Colbrook, State of Illinois
Ray Daniels, NCR Corporation
Harvey Lodge, Dunbar Manufacturing, Inc.

20 YEARS

Joseph Silvestro, Gloucester County, New Jersey
Kendrick Simila, State of Oregon

25 YEARS

Lacy DeGrange, State of Maryland
Eric Vadelund, National Institute of Standards and Technology
Robert Walker, Retired, State of Indiana
Otto Warnlof, National Institute of Standards and Technology

35 YEARS

Richard Smith, National Institute of Standards and Technology

Certificates of Appreciation

John Bartfai, Conference Chairman, presented Certificates of Appreciation to members of standing committees and task forces who had completed their tenure on the committees and task forces.

Specifications and Tolerances Committee	Ross Andersen, New York
Laws and Regulations Committee	Kendrick Simila, Oregon
Liaison Committee	John McCutcheon, U.S. Deparatment of Agriculture
Education Committee	Charles Greene, New Mexico
Executive Committee	Lou Draghetti, Agawam, Massachusetts Patrick Nichols, Alameda County, California
Budget Review Committee	Don Stagg, Alabama William Braun, Procter & Gamble
Associate Membership Committee	Richard Davis, James River Corp.
Task Force on Energy Allocation	Patrick Nichols, Alameda County, California, Chairman James Allen, Rhode Island Peggy Adams, Bucks County, Pennsylvania Stephen Casto, West Virginia Robert Omlor, Montgomery County, Ohio Richard Shockley, Maryland David Wallace, Colorado Peter Anderson, Energy Monitoring Systems,Inc. Marvin Feldman, Nicon Corporation R. Freislag, Energy Billing Systems, Inc. Ken Hoberman, GRH Electronics Clinton Phillips, International District Heating and Cooling Association Tina Gaver-Butcher, National Institute of Standards and Technology
Auditing Committee	Stephen Casto, West Virginia
Resolutions Committee	Stephen Meloy, Montana Maxwell Gray, Florida
Credentials Committee	Eugene Keeley, Delaware

President's Award

This award is a banner presented to the State Director of each state having 100% of its weights and measures officials as members of the National Conference on Weights and Measures for the membership year July 1, 1988 - June 30, 1989.

First Year Awards

BANNERS

State of Arizona
State of Hawaii
State of Michigan
State of New Hampshire
State of West Virginia

Streamers for Second Year 100% Membership

State of Vermont

Streamers for Third year 100% Membership

State of Alaska
State of Delaware
State of Idaho
State of Kansas
State of South Dakota

Streamers for Fourth Year 100% Membership

State of Arkansas
State of Nebraska

Standing Committee Reports

Report of the Executive Committee

John J. Bartfai, Chairman
Director, Bureau of Weights and Measures
New York

REFERENCE
KEY NO.

100 Introduction

This is the Final Report of the EXECUTIVE COMMITTEE for the 74th Annual Meeting of the National Conference on Weights and Measures (NCWM). The Report is based on the Interim Report offered in the Conference "Program and Committee Reports" (NCWM Publication 16), the Addendum Sheets issued at the Annual Meeting, and actions taken by the membership at the Voting Session.

Table A identifies all of the items contained in the Report by Reference Key Number, Item Title, and Page Number; Table B lists the Appendices to the Report; Table C reports the voting results.

The Reference Key Number and Item Title of voting items are identified in bold face type as well as by a suffix "V" (i.e., **101-17 V Task Force on Energy Allocation Systems**).

Table A
Reference Key Items and Index

Table A (Continued)

Table B
Appendices

Order of Presentation

The Report was presented to the membership for voting as follows:

1. The Committee offered a Consent Calendar consisting of two items, Item 101-17 and Item 101-19B.

2. In response to a request from the floor, the Committee agreed to remove 101-19B from the Consent Calendar and offer it as a separate voting item. Consequently, 101-17 became an individual voting item.

3. A separate vote was taken on the two voting items:

   101-17 V **Task Force on Energy Allocation Systems**

   101-19B V **NCWM Members of U.S. Delegation to OIML**

4. A vote was taken on the entire Report with editorial privileges accorded to the Executive Secretary.

Table C
Voting Results

Reference Key No. or Subject	House of State Representatives		House of Delegates		Results
	Yes	No	Yes	No	
101-17	47	1	78	0	Passed
101-19B (To discuss Amendment)	47	0	71	1	Passed
101-19B (Amendment)	35	12	51	24	Passed
101-19B (as amended)	44	3	69	3	Passed
Report in its entirety	46	0	68	0	Passed

Details of All Items

(In the order they appear in Table A)

Part I - Executive Committee

101-1 I NBS and Handbook Name Change

The name of the National Bureau of Standards (NBS) was changed by law to the National Institute of Standards and Technology (NIST). A notice of the change and its reasons was sent to every member. The reasons for the change and the new tasks assigned to the NIST were discussed. See Item 103-7 "Program Update, Office of Weights and Measures" for additional discussion of the NIST mission. One consequence of the name change is that NBS Handbooks will become NIST Handbooks. However, the 1989 Editions of HB 44 and HB 130, and the Third Edition of HB 133 were published as NBS Handbooks under a special exemption so that the constituency (especially the states) might have time to change their regulations and other references to NIST. Beginning in 1990, editions of all handbooks will be published as NIST handbooks.

101-2 I NCWM Work Schedule

Publications. The Committee discussed a proposal of the OWM to republish Handbooks 44 and 130 every two years instead of the current practice of republication every year. The reasons given for changing the schedule included : (1) the difficulties reported by some officials in adopting new requirements annually, (2) difficulties in retraining inspectors annually to familiarize them with the changes to each of the handbooks, (3) industry reporting that regulation is uneven across the country, (4) difficulties for the Regional Associations in dealing with the issues on an annual basis, (5) savings of OWM staff time and publications funds which could be reprogrammed for other tasks.

The Executive Committee requested that the proposal be developed more thoroughly for reconsideration. Concern was expressed about several drawbacks to changing the schedule. Among them were that a two-year cycle would (1) result in the NCWM falling further behind in keeping up with technology changes and (2) cause confusion in the field regarding the proper version of a handbook to use. Consequently, all 1990 editions of handbooks will be published in the same format as the 1989 editions.

If the proposal had been accepted, (a) the 1990 editions of both Handbook 44 and Handbook 130 would have been published following the 74th Annual Meeting in Seattle in July of 1989 and (b) subsequent editions of Handbook 44 would have been published in even years (1992, etc.) while subsequent editions of Handbook 130 would have been published in odd years (1991, etc.)

OWM will continue the practice of republishing other handbooks (i.e., 133, 143, 145, the 105 series) as required.

See Appendix A for a listing of "Office of Weights and Measures Publications" including source, method of ordering, and cost.

Coordination With Regional Associations. Steps have been taken to coordinate the work of the Regional Associations with the NCWM. They include assigning Richard Smith, OWM, to provide the Regional Committees with the latest reports of the National Committees and to provide to the OWM Technical Advisors the reports of the Regional Committees. Methods of streamlining the current procedures were discussed, including the possibility of establishing a permanent point of contact for each of the regional associations to be equipped with a computer (with modem) or a FAX machine so that the Regional Committees could gain easy and broader access to the work of the National committees. Exploration of ways to better integrate the work of the regional associations and the National will continue.

Meeting Schedule. The workload of the Conference is growing in the number and complexity of issues. Also, the NCWM has made a significant transition from a "standards development" body to both a "standards development" body and an operating organization (NTEP, NTP, and broad Association functions).

In the current method of operation, two major meetings are held each year (the Interim Meetings in January at the NIST and the Annual Meeting in July in selected cities). Standing committees, task forces, and special committees hold additional meetings as needed. The work of the NCWM and the OWM is on a six-month cycle, either preparing for and holding the Interim Meetings, or preparing for and holding the Annual Meetings. Between the Annual Meeting and the Interim Meeting, the OWM must update and publish the NIST Handbooks (HB 44, HB 130, HB 133) and NCWM publications (Pubs. 1, 3, and 14 among others). The six-month cycle limits coordination of the work of the committees of the NCWM and the Regional Associations and places unnecessary pressure on states to institute changes every year. The regional meetings coincide with OWM staff attempts to prepare for the Interim or Annual Meetings.

A 12-month cycle, augmented by meetings of the committees and task forces was proposed. In general, the scheduling would have the following features:

1. Eliminate the Interim Meetings.

2. Restructure the Annual Meeting as a composite meeting:

   a. In the even years, the S&T Committee, the Liaison Committee, and the Metrologists Workshop would function as they do now in the Interim Meetings, and in the odd years, as they do now in the Annual Meeting. HB 44, HB 143, SP 686, and NCWM Publications 12 and 14 would be published in the even years.

   b. In the odd years, the L&R Committee, the Education Committee, and the Executive Committee would function as they do now in the Interim Meetings, and in the even years, as they do now in the Annual Meeting. HB 130, 133 and NCWM Pubs 1 through 14 (as necessary) would be published in the odd years.

   c. Supplement the above meetings with additional meetings of the individual committees or task forces as needed; this is done now. Perhaps a few more meetings would be needed.

Such a plan would enable:

1. the Regional Associations to be better integrated into the work program of the NCWM;

2. the states and industry to understand changes and train their staffs for more effective implementation of these changes;

3. the OWM advisory staff to (a) better develop the technical aspects of the issues and discuss them with the states, industry, their committees, and the regional associations, and (b) increase the effectiveness of the NTEP and National Training Program;

4. the NCWM to use its resources more effectively;

5. the states to save the cost of purchasing all new handbooks every year, and the expense of the time required to change their regulations and/or administrative procedures annually.

The Executive Committee decided against taking action on the proposal pending additional study.

101-3 I NCWM Publications

NCWM publications were updated to reflect the changes adopted at the 73rd Annual Meeting. The current status and future plans regarding NCWM publications were reviewed. The following changes were made:

1. NCWM Publication #3, "Policy, Interpretations, and Guidelines," was updated to include material from the 73rd Annual Meeting. Copies were provided to the members of the Executive Committee and mailed to the state directors and officers of the NCWM. Further distribution will be made "as needed."

2. NCWM Publication #14, "National Type Evaluation Program - Administrative Procedures, Technology Policy, Checklists, and Test Procedures," was revised and updated. See Item 102-1 for additional information.

3. NCWM Publication #2, "Weights and Measures Directory, 1989," was printed and distributed in June 1989.

See Appendix B for a listing of "National Conference on Weights and Measures Publications" including source.

101-4 I Role of Metrologists, Interaction with NIST and NCWM

The "METROLOGY WORKSHOP" Agenda was published as part of the Announcement Book, page 21, as a result of discussions described below.

During the 73rd Annual Meeting in Grand Rapids, a panel discussed the structuring of future Metrology Workshops. The panel reported its findings and recommendations in a letter from its Chairman, Joseph Rothleder, to NCWM Chairman John Bartfai as follows:

1. A recommendation for the structure of future workshops was developed.

2. A plan to rotate panel Chairmanship was agreed on.

3. Recommended activities to be included in the next agenda were identified, with the intent that the agenda for the workshop be included in the NCWM Program.

The Executive Committee received other correspondence on this subject, plus a report made by Mr. Paul Krupenie, OWM, on behalf of the metrologists. Mr. Krupenie's presentation included a draft of the agenda noted above.

Specific points made to the Executive Committee included the following:

1. The 1989 session will require 12 to 16 hours to cover the proposed agenda.

2. Assistance is needed in the use of computers and software in many areas of state laboratory operations; standardization among the laboratories is needed.

3. Laboratory equipment, including brands and models, should be centrally listed for reference in planning procurement and upgrading of laboratories.

4. Programs of RMAPS should be integrated with the program of the Annual Meeting Metrology Workshop. RMAPS and Workshop could provide significant technical review and assistance in updating selected handbooks, such as the 105 series and 143.

Several other issues and needs were identified. The metrologists plan to develop a more comprehensive report to the Executive Committee in January 1990 based on their July 1989 meeting. The Executive Committee: (1) approved the printing of the agenda of the Metrology Workshop in the Conference Announcement Book: and,

(2) encouraged the panel to continue to develop its program.

A separate Report of the Metrology Workshop will be published at a later date.

101-5 I Site Selection Policy

The selection of the site (city) of annual meetings is based on recommendations of the Executive Secretary to the Executive Committee. The Executive Secretary attempts to move the site among Regions in sequence and considers invitations received from state and local jurisdictions.

The Chairman proposed an alternative procedure for selection of host cities and hotels for the Annual Meetings, namely that the Regional Associations, in turn, would select the host city. The regional associations would make the decisions when two or more cities compete to host an Annual Meeting. The responsibility for hotel evaluation and recommendation would remain with the Executive Secretary, subject to approval by the Executive Committee.

The Executive Committee tabled this proposal because it is satisfied with the present site selection process. The Executive Secretary outlined the procedures followed and some of the criteria used in selecting the hotel for the Annual Meeting. The criteria are provided below as a guide for anyone wishing to propose a city for consideration; any city recommended must have at least one hotel meeting these criteria.

Site Selection Criteria
The following criteria are provided for selection of cities and hotels for the annual meeting of the NCWM held in July.

1. Large full-service hotel (500 rooms), minimum AAA 4-diamond or Mobil 4-star rating, with complete meeting room facilities, i.e.,

    a. General Sessions set for 400 classroom style with head podium for 12.

    b. Seven (7) breakout rooms for simultaneous meetings throughout the week.

    c. Four (4) additional breakout rooms for meetings simultaneous with those required under paragraph 1.b. above.

2. Active and supportive Convention Bureau.

3. Location safe for walking in the evening and with ample restaurants.

4. Several printing firms, within three or four blocks from the hotel, that will operate all night.

5. A variety of optional events and outings to choose from.

6. Full service airport for connections from all 50 states (small connector airlines not desirable). Transportation to and from the airport should be ample, either from host hotel or airport transportation system.

101-6 I Status Report, Membership

Membership. At the close of the Membership Year, June 30, 1989, the total membership was 2144, made up of 1081 active weights and measures officials (575 state, 289 county, 217 city), 999 Associate members (domestic and foreign), 45 federal officials (including NIST), 19 foreign officials, and 36 retired members.

See Appendix C for "NCWM Membership by State" and "Composition of NCWM Mailing List."

Significant improvements have been made to the administration of the NCWM mailing list since this time last year:

1. The NCWM Mailing List is now kept completely in the Conference (OWM) office; the outside mailing/computer service is no longer used. This permits up-to-the-minute corrections to names, addresses, and telephone numbers, as well as providing the capability of generating mailing labels, mailing label files (for outside printers to use), certificates, invoices, and reports. The data was generated in the Conference office, giving confidence in the totals. In years past, errors in coding and in programming resulted in some unreliable totals.

2. Other improvements in the data base have been made, such as adding known FAX numbers, correcting the way the information is printed for the directories and recording when information is updated or when a person joins the Conference.

3. Data base information is kept on each NCWM member's attendance at the Annual Meeting and service as an officer, or member of a committee or task force, for the Conference. This permits listing those eligible for honor awards (10, 15, 20, etc., years attendance at the Annual Meeting) and generating a report for the Nominating Committee to use in its deliberations.

4. Registration information for both the Interim and Annual Meetings is being maintained in this same data base to serve as a means for generating badges for the attendees, registration lists, and a report for the Treasurer concerning who has prepaid and who has registered for the Annual Meeting but still owes the fees.

Brochure. The recruitment brochure was revised to clarify the benefits of membership and appeal to a broader constituency. The brochure was printed and will be distributed to the NCWM mailing list plus other potential members not on the NCWM mailing list.

Membership Plans. Mr. Allan Rogers, VA requested the NCWM to consider the possibility of developing a "package" membership plan that would link membership in the NCWM and the State Association for a single membership fee. Such a plan would make it possible for those states with state associations to have all of their association members also become members in the NCWM. During the past year, the fee for the Virginia State Association was $25; the fee for the NCWM was $35. He suggested a combined fee of $50 to be paid at the time of the State Association meeting as a method of instituting such a "package."

The Executive Committee approved the concept provided that the NCWM share of the combined fee remain $35.00.

101-7 I Treasurer's Report

The Treasurer reported on the current fiscal status of the NCWM including income and expenses to-date and investment of surplus funds. As of June 30, 1989, income for the fiscal year was over $115,000 (compared to a budget goal of $90,200) and expenses exceeded budget by $5,000.

Due to the increased membership, funds are accumulating beyond projected needs. The Treasurer and Executive Secretary will review the balance sheet after all bills for the Interim Meeting have been paid and will invest any monies not needed for projected operations. Enough liquidity will be maintained to fund the $10,000 obligation made to the Committee on Education, Administration, and Consumer Affairs for train-the-trainer materials when it has an approved plan for spending the money. The Executive Secretary was requested to write a letter to the Treasurer to obligate $10,000 in the current year for the purposes discussed.

The Report was accepted by the Executive Committee.

See separate Treasurers Report for details.

101-8 I Operating Budget

1988/1989 Operating Budget. Mr. Tholen reported on the 88/89 Operating Budget. As the Treasurer reported, income and expenses both exceeded the budget. Expenses for meetings (Annual and Interim) were within the budget. The major cause for the expense overrun was the increasing cost associated with expenses incurred by members in their committee activities. More state and local officials are requesting the Conference to pay part or all of their expenses than in prior years, and the cost of air travel has increased.

1989/1990 Operating Budget. The draft operating budget for the fiscal year beginning July 1, 1989, has been reviewed by the members of the Budget Review Committee. Their recommendations have been incorporated into the draft budget which was reviewed by the Executive Committee.

The Executive Committee made three changes to the proposed budget: (1) $2,000 was added for Task Force on Energy Systems meetings (Account 5.8), (2) $2,000 was added for Task Force on Belt Conveyor Scales meetings (Account 5.7); and $4,500 was added for the Chairman-Elect to attend three Regional Meetings, including $1,000 for the Chairman to host an "invitation" breakfast at each Regional Meeting. These additions were offset by an increase in budgeted income of $4,500 and a reduction in the budgeted amount for support of OIML from $8,000 to $4,000 (Account 5.2). The reduction in OIML support was based on the anticipated rate of expenditures for the year.

The Executive Committee reconfirmed its support of the National Training Program by budgeting a second $10,000 for the development or acquisition of train-the-trainer materials.

With the actions noted above, the Executive Committee adopted the proposed Operating Budget for the year beginning July 1989.

See Appendix E for the operating budget as approved.

101-9 I Appointments and Assignments

Chairman Bartfai made the following appointments:

Vice Chairman - Fred Clem, Ohio to replace Barbara DeSalvo, Ohio who could not attend the Annual Meeting.

Committee on Laws and Regulations - Fred Clem to complete unexpired term of Stewart Rosenthal who resigned.

Chaplain - John Lewis, WA retired, to replace Martin Coile, GA who could not attend the Annual Meeting.

Credentials Committed - Gene Keeley, DE, to replace Jim Vanderwielen, IN who has changed jobs and will not attend the Annual Meeting.

Technical Committee on National Type Evaluation. John Mac Donald, Howe Richardson, replacing Ralph Meehan. Joe Giannina, Port of Corpus Christi. Joseph Antkowiak, Hottinger Baldwin Measurement to replace Phillip Katz, HBM. William Paull, Hobart to replace Fred Katterheinrich who retired. Carl Conrad, NJ to replace Frank Nagele who retired. Additionally, the following are new appointees: Khalil Haker, BLH, John Skuce, Smith Meter, and Richard Wolf, Mobile Oil.

Task Force on Energy Allocation. Roger Freischlag, Energy Billing Systems, Marvin Feldman, Nicon Corporation, and M.A. (Pete) Anderson, Energy Monitoring Systems.

Auditing Committee - Steve Casto, WV, to complete the 1 year remaining on the term of James Rardin, WV, who resigned; and

Credentials Committee - Donald Weick, City of Topeka, KS, to complete the two years remaining on the term of Ray Messing, Virginia Beach, VA, who resigned.

101-10 I Annual Meeting, 74th

The 74th Annual Meeting was held at the Seattle Westin Hotel during the week of July 16 through 21, 1989. Attendance included 311 registered delegates and 111 guests; a total attendance of 422. The total registered guests was within the range of attendance for the past few years. The guest attendance was about 50% higher that it has been. Except for Nevada, West Virginia, Colorado, and the District of Columbia, all states and territories were represented. Canada and Thailand sent representatives.

101-11A I Interim Meeting, 75th

At a special meeting on June 24th, 1989, the Executive Committee voted to hold the January, 1990 Interim Meeting in Phoenix, AZ assuming an acceptable hotel rate is negotiated and the OWM staff is able to attend (because the Annual Meeting will be in D.C., the OWM will not have air travel expenses in the fiscal year; the assumption was made that the OWM budget could apply those savings to support of the Interim Meeting).

Mr. Gerk contacted Ray Helmick, AZ to initiate planning for the 1990 Interim Meetings in coordination with the Executive Secretary.

101-11B I Annual Meeting, 75th

At the 72nd Annual Meeting, Albany, NY, was selected as the location for the 75th Annual Meeting. Washington, D.C., was subsequently recommended by the OWM due to the special significance of the 75th Annual Meeting and the relationship of the NCWM with the National Institute of Standards and Technology. Chairman Bartfai agreed to the change, but requested that Albany be the selected city for the 76th Annual Meeting. The members of the Executive Committee were balloted on the change in city location. The Committee was unanimous in accepting the change from Albany to Washington, DC.

Subsequently, the NCWM received two proposals, one from the Westin (between downtown Washington and Georgetown) and one from the J.W. Marriott (the site of the 70th Annual Meeting). The Marriott proposal was better in terms of room rates and location. However, the week proposed was the second week in July instead of the usual third week. The Executive Committee members were balloted by telephone to get their position on switching the week of the meeting; again, they were unanimous in approving the time change.

General plans for celebration of the 75th Annual Meeting of the NCWM were discussed (see report of the Committee on Liaison).

The Executive Secretary has signed a contract with the J.W. Marriott in Washington, D.C. for the 75th Annual Meeting. The rate is $ 100 flat rate (single or double).

Program. The Executive Secretary proposed including a special session on "EC 92 and its Implications on the U.S. Weights and Measures System" at the 75th Annual Meeting. The European Community (EC) is developing an economic union to take effect by the end of 1992. Developing plans and some actions already taken indicate that some newly adopted standards and legal requirements might be in conflict with those of the United States. Additionally, many questions are being raised concerning the possible impact of EC 92 actions on both exports of U.S. companies and imports from the Common Market. The proposed sessions would bring speakers from the U.S. Congress, the Bush Administration, and the Common Market to update our membership and other

attendees on these concerns and issues.

The Executive Committee voted for the Executive Secretary to proceed to develop plans for this type of session at the 75th Annual Meeting.

101-12 I Annual Meeting, 76th

Due to the change in city location for the 75th Annual Meeting, the Executive Secretary recommended that Albany, NY, be confirmed as the city for the 76th Annual Meeting. The Executive Committee agreed with the recommendation if suitable hotel arrangements can be made.

The Executive Secretary visited Albany, NY on July 6, 1989 and met with the Marriott Hotel representative and with the Albany Convention Bureau. The Marriott is adding 3000 square feet of meeting space and 55 sleeping rooms plus a parking garage. This work is scheduled for completion at least a year prior to the NCWM Annual Meeting. The Marriott had not responded during earlier visits by the Executive Secretary; they now appear to be very interested. The Marriott is the preferred hotel in Albany; it is a 4 diamond property only 10 minutes from the Airport. It is located in the newest suburbs of Albany and is adjacent to all the national chain restaurants, and to shopping malls and stores.

Some Committee members expressed their opinions that Albany should be reconsidered as the location for the 76th Annual Meeting. See Item 101-13 for related action.

101-13 I Annual Meetings, Other

The Executive Secretary had been requested to explore Nashville, TN; Orlando, FL; and New Orleans, LA, as possible sites for later Annual Meetings.

Invitations have also been received from the following jurisdictions to host the Annual Meeting: Hawaii (various locations), Indiana (Indianapolis), Ohio (Columbus), Connecticut (Hartford), and Arizona (Phoenix).

Site Visit Report
The Executive Secretary visited hotels in Nashville, Orlando, New Orleans, and Indianapolis.

Nashville. The Executive Secretary is a member of the ISWM (International Society of Weighing Measurements). Additionally, he is Chairman of the ISWM Program Committee for their Annual Meeting originally scheduled for April 1992 in Nashville. The ISWM held a planning meeting in Nashville for their 1992 Meeting at which time the possibility of scheduling the Annual Meetings of both the ISWM and the NCWM in sequence was discussed. The ISWM Board thought so much of the idea that they unanimously voted to change their meeting from April to July to match up with the NCWM. The Executive Secretary recommends that the planning for holding the two meetings in sequence go forward. The ISWM has already selected the Opryland Hotel for its meeting. This hotel is a 5 diamond property of over 1900 rooms. It is adjacent to Opryland (theme park) and Grand Ole Opry (the radio show that has been on the radio for over 60 years). All of these properties are located on a beltway bypassing downtown Nashville. Downtown Nashville and surrounding suburbs have many attractions, mostly associated with music. The hotel room rate will be over $100 at the Opryland Hotel. There are many other hotels in the immediate vicinity in every price range to accommodate our membership. We will need to examine our options for negotiating with the Hotel, and for arranging the meetings of the two organizations to maximize the benefits to both constituencies for joining forces.

Orlando. The Executive Secretary visited Orlando in March. In essence, there are four groups of hotels: (1) Disney hotels operated by Disney; (2) private hotels such as Hilton located on Disney property; (3) hotels not on Disney property but close to Disneyland and other Disney attractions; and (4) other hotels in the Orlando area. The cost of the hotels runs from expensive (1) through moderate (4) for convention hotels. Hotels in (1) are booked or rates are too high for NCWM. Hotels in (2), including the Hilton might offer rates acceptable.

Hotels in (3) and (4) are affordable, but our members could find themselves in traffic jams in July.

New Orleans. The Executive Secretary visited several hotels near the French Quarter while he was attending the ISWM Annual Meeting. There are several very good hotels to choose from, including the Hilton, Marriott, and Westin. He believes that we could get good rates in New Orleans, especially in July.

Indianapolis. The Executive Secretary visited hotels and the Convention Bureau in Indianapolis in February. Downtown Indianapolis has gone through a remarkable redevelopment. The city has added a large sports complex including a domed stadium for the Colts, an international olympic water sports center, and a second indoor arena for basketball and other events. Adjacent and connected to the sports complex by sky walks are several first class (some new) hotels including a Hyatt, Holiday Inn (built into the reconstructed railroad station), and a Westin. Close by is a new Children's Museum, a Zoo, and many other interesting attractions.

After a report by the Executive Secretary about his recent site visits, the Committee:

1. instructed him to develop a questionnaire for completion by the attendees at the Tuesday General Session to solicit opinions about site selection and costs related to attendance at the Annual Meetings;

2. instructed him to drop Orlando, FL and New Orleans, LA as candidate locations for future meetings at this time, and to proceed in planning a coordinated meeting of the NCWM and the ISWM in Nashville in July, 1992 (see discussion of the Nashville visit below).

101-14 I National Training Program

At the January 1989 Interim Meeting, Charles Greene reported on the status of program development, funding, and plans for the future. See the Report of the Committee on Education, Administration, and Consumer Affairs for details on these subjects.

The first $10,000 budgeted for training materials has been used to purchase a professional program consisting of video tapes and manuals for train-the-trainer seminars. An additional $10,000 was included in the 89-90 budget for additional train-the-trainer purposes.

The Committee on Education, Administration, and Consumer Affairs has been developing a "NCWM Award for Excellence in Training." A copy of the proposal was sent to the Executive Committee in late January for comments. A majority of the Committee agreed with the proposal and provided comments. See Report of the Committee on Education, Administration, and Consumer Affairs, Item 402-8 for details.

101-15 I Task Force on Commodity Requirements

The Task Force completed its work at the end of the 73rd Annual Meeting. Future work on the moisture loss issue was assigned to the Committee on Laws and Regulations and the Committee on Liaison. The guidelines developed for addressing such issues have been printed in NCWM Publication #3, Policy, Interpretations, and Guidelines of the NCWM."

The Committee on Laws and Regulations has an Item 240-5 "Moisture Loss for Ice-Packed Poultry, Pet Foods, and Pasta" on its agenda.

101-16 I Task Force on Prevention of Fraud

Recommendations of the Task Force included the items listed below.

1. Request the Office of Weights and Measures to explore and develop, if possible,

a. a definition of fraud applicable to weights and measures;

b. a uniform method of classifying types of fraudulent weights and measures activities for use as the basis of state information systems;

c. a mechanism by which information on fraudulent weights and measures activities could be collected and made available at the national level;

d. recommendations for contents of a module in the National Training Program for use by the states in complaint handling and reduction of opportunities for weights and measures fraud based on items (a), (b), and (c) above, plus information available from other enforcement agencies, associations, and classroom curriculum; and

e. recommendations for assessment of penalties and other legal action.

2. Assign to the Committee on Specifications and Tolerances the task of determining if changes to NBS Handbook 44 are required to reduce opportunities for fraud.

Each of the recommendations is being addressed by a committee of the Conference. Some items can be readily dealt with; others are long term in nature.

Items 1a and 1b are being addressed by the Education Committee; Item 1c by the Committee on Liaison; and Item 1d by a module on Administration at a later date. The L&R Committee is dealing with civil and administrative action tangential to Item 1e. Regarding Item 2, the S&T Committee is working on the issue of "sealing" as one aspect of reducing opportunities for fraud in the near term.

101-17 V Task Force on Energy Allocation Systems

(This item was adopted)

Pat Nichols reported on the work of the Task Force. The summary of his report is contained in Appendix F. The Executive Committee reviewed the Task Force Report and presented the following Task Force recommendations to the membership for adoption.

1. Regulation of energy allocation systems should not be considered a weights and measures responsibility.

2. The committee on Liaison should:

a. contact an appropriate agency (such as the National Association of Regulatory Utility Commissioners) to assume the responsibility for the regulation of such systems;

b. present the recommended "regulation" to the organization identified in 2(a) for its use; and

c. encourage industry groups, such as the American Society of Heating, Refrigeration, and the Air Conditioning Engineers (ASHRAE), International District Heating and Cooling Association (IDHCA), National Utilities Allocation Association (NUAA), or Building Owners and Managers Association (BOMA), to develop installation, maintenance, and system guidelines for these systems.

3. The Conference should adopt the guidelines for weights and measures officials to use when handling complaints about energy allocation systems.

4. The Task Force should be disbanded, but should remain available to assist and advise the Liaison Committee on an as needed basis.

A separate NCWM publication will be prepared reporting on the work of the Task Force. This publication will contain the draft regulation and a set of guidelines for use by weights and measures officials to respond to complaints related to energy allocation systems.

101-18 I Issues Roundtable

The use of "Issues Roundtables" at the NCWM and Regional Association Meetings was discussed, including the question "should the discussions be summarized and made available to others?." The Executive Committee asked that an OWM staff member in attendance at a Regional Meeting be assigned to collect summary information of the issues addressed, and that this information be made available for use by other regional association committees. Selected roundtable items might be good material for the newsletter and Bulletin Board.

101-19A I Program Update, International Organization of Legal Metrology

Sam Chappell, NIST, reported on (1) the results of the 8th International Conference on Legal Metrology of the OIML held in Sydney, Australia, during the week of October 24-29, 1988; and (2) the activities of OIML working groups relevant to the interests of the NCWM. See Appendix D for his report.

Appointments to Working Groups. The Committee on Specifications and Tolerances recommended that the following NCWM representatives be appointed to participate in future meetings of OIML:

> Ray Helmick, AZ, to attend the meeting of the International Working Group on "Automatic Weighing Instruments" in England, April 10 - 14, 1989; and
>
> David Watson, Fort Worth, TX, to attend the meeting of the International Working Group on "Non-automatic Weighing Instruments" to be scheduled.

101-19B V NCWM Member Of U.S. Delegation To OIML

(This item was adopted as amended)

It has been customary for the Head of the U.S. Delegation to select the Chairman of the National Conference as a member of the official Delegation to the International Conference on Legal Metrology This conference is held every fourth year. The Head of the U.S. Delegation agreed to provide the NCWM the opportunity to nominate its representative.

Accordingly, the following policy was developed by the Executive Committee and was recommended for adoption by the membership.

Amend 1.5.1., International Organization of Legal Metrology, NCWM Participation, as follows.

Add a new paragraph E. to Part I - General:

> **E. The Executive Committee will select an NCWM member as a proposed member of the U.S. Delegation to the International Conference on Legal Metrology and forward the recommendation to the Head of the Delegation.**

Amend 1.5.1., Part II, Paragraph A to read as follows:

> **A. This part of the policy applies to selection of NCWM members for OIML Pilot and**

Reporting Secretariats and the USNWGs overseeing these Secretariats. ~~**It does not apply to representation on the U.S. Delegation to the International Conference.**~~

At the Annual Meeting, the proposed new policy, paragraph E recommended by the Executive Committee was amended from the floor to read as follows:

> **E. The Executive Committee will submit the name of the individual serving as the NCWM Chairman at the time of the Quadrennial OIML meeting to the Head of the U.S. Delegation as its nominee to represent the NCWM at the Quadrennial Meeting. If the Chairman is unable to represent the NCWM, the name of the Chairman-Elect will be submitted as its nominee.**

The proposed policy as amended (Paragraph E as amended and Paragraph A as proposed by the Executive Committee) was adopted.

101-20 I Program Update, Office of Weights and Measures

OWM Program. Albert Tholen, Chief of OWM, provided an update on the program of the Office. The following changes have occurred or are planned re: the OWM staff:

1. Paul Krupenie retired; a vacancy announcement has been distributed nationwide for a replacement.

2. Joan Mindte has been hired into a newly created position; she will coordinate the planning for and delivery of training.

3. Dick Smith plans to retire at the end of 1989; the OWM plans to recruit to fill Dick's vacancy.

NIST Visiting Committee. The Executive Secretary reported on the changes at NIST, including the name change from NBS, the new mission assignments, the proposed reorganization designed to meet the needs of the new assignments, and the possible impacts of these activities on the program of the OWM and the NCWM. Chairman Bartfai wrote a letter to the Director of the NIST regarding the interest of the NCWM in any changes that might affect the program of OWM. He received reassuring responses from NIST to his letter. Copies of the letters are available from the Office of Weights and Measures.

The program of NIST is reviewed by a Visiting Committee composed of nine members. Nominations for membership on the Committee are made to the Director of NIST. The next class of the Visiting Committee will take office October 1, 1989. Mr. Kammer, Acting Director, NIST was asked at the NCWM officers' luncheon at the Interim Meeting, January 9, 1989, if it would be appropriate for the NCWM to offer a candidate for membership on the Visiting Committee. Mr. Kammer answered in the affirmative. Subsequently, the Executive Committee assigned the task of putting such a request together to Tom Geiler, and asked the Executive Secretary to provide Mr. Geiler with information concerning the current composition of the Visiting Committee, the criteria for selection of members, and any other information necessary for submission of a nomination.

Tom Geiler, MA contacted potential NCWM candidates for appointment to the Visiting Committee. The Executive Committee, by mail ballot selected Ed Heffron, MI. Chairman Bartfai wrote a letter to Mr. Kammer recommending Ed Heffron as the NCWM candidate.

101-21 I Workplace Safety

The Northeastern Weights and Measures Association established a Safety Subcommittee chaired by Charles Gardner to gather information and compile a report on the subject of "safety in the workplace" as it relates to the activities of weights and measures inspectors. The NEWMA Executive Committee directed Mr. Gardner to contact NCWM to request that this subject be assigned to one of its standing committees.

The results of Mr. Gardner's investigations to date were mailed to the members of the NCWM Executive Committee in November for their review prior to the Interim Meetings. Chairman Bartfai assigned this subject to the Committee on Liaison for further study.

At the Interim Meeting, Mr. Gardner, in a joint meeting of the Executive and Liaison Committees, summarized background information leading to the submission of this item to the NCWM. The first effort was to gather information from other jurisdictions to find out what is being done regarding workplace safety. Of 39 jurisdictions responding, 30 reported that they do not have any training or procedures dealing with workplace safety. Others have various kinds of activities. Mr. Gardner gave examples of some of the activities implemented in the states, including requirements for use of safety glasses and shoes, elimination of 50 lb weights (substituting 25 lb weights), and use of masks when working around petroleum products, etc.

The Executive Committee:

1. agreed that the NCWM should become involved with this subject;

2. concluded that outside experts, such as OSHA, risk management specialists, insurance experts, and API, should be brought into the process; and

3. agreed that more information should be gathered.

101-22 I Durability of Devices

The Executive Committee reviewed a pre-draft of an OIML IR "Testing Procedures for Pattern Examination of Fuel Dispensers for Motor Vehicles." The issue of "durability testing," per se, was examined to address the question of how the U.S. should and could be effective in ensuring that the technical requirements included in OIML drafts are "cost effective" and necessary. Several members of the Committee requested that the issue of durability testing (and the broader philosophical issue) be explored further. Mr. Guensler noted in his letter that the issue is the degree of testing, not the need for testing.

At the Interim Meeting, it was agreed that testing for durability/permanence is well established in the United States as well as in other OIML countries. Historically, permanence testing has been associated with mechanical devices. The complications being faced now are related to durability of the electronic components of modern devices. It was agreed that, when establishing requirements, consideration must be given to the benefits of proposed testing for durability versus the costs to both the manufacturer and to the regulator in conducting the tests.

101-23 I Waiving of Fee at 74th Annual Meeting

In January 1989, the Executive Committee voted to waive the $100.00 portion of the registration fee for any weights and measures official who attended the 74th Annual Meeting in July 1989 in Seattle, WA, and who never attended an earlier Annual Meeting. Payment of $35.00 was to provide the official with all privileges given to those paying the entire fee except for voting on the issues. The Executive Committee has extended this offer at previous Annual Meetings to officials of the host state only.

The Executive Committee encouraged the Executive Secretary to promote the fullest use possible of pre-registration and pre-payment of fees for the Annual Meeting in order to shorten the lines at the registration desk.

Part II - Board of Governors

102-1 I NCWM Publication #14

The document was updated and republished with all changes and additions adopted through the 73rd Annual Meeting. Some editorial changes have been made to improve understanding and ease of use of the material. The changes included: (1) standardization of the forms used by the industry in requesting type evaluation; (2) highlighting the Handbook 44 requirements used in the checklists; and (3) identifying multipage testing procedures clearly. Distribution was made to the NTEP mailing list plus state directors. Others can obtain copies through the NCWM Office. An electronic copy can be obtained on a 5 1/4" floppy disk.

102-2 I Acceptance by the States

Questionnaire of Device Regulation. The implementation of the NTEP and the subsequent acceptance of the program by the states was reviewed. At the request of the Committee, a letter was sent to every state requesting a description of its current operating procedures regarding these matters. An attachment to the letter provided a comprehensive discussion of: (1) the background leading up to the adoption of the new scales code and NTEP; and (2) detailed "Steps in Field Enforcement," especially in light of the fact that states cannot test devices in the field for compliance with "influence factors."

The results of this correspondence were reviewed. Several of the responding states, indicated lack of understanding of NTEP and of the nature and intent of the Uniform Regulation. Problems identified as inhibiting the full use of NTEP included:

1. states and industry not understanding the contents and value of the training program;

2. distributors not "getting the word" on NTEP;

3. information, although available (e.g., Certificates of Conformance), is not reaching inspectors, especially those at the county and city level;

4. the new scales code in Handbook 44 is not understood at the "grassroots" level, the field inspector;

5. state and local budgets limit the amount of resources available for promulgation, training, and enforcement.

At the January 1989 Interim Meeting, the Executive Committee requested that the Executive Secretary:

1. contact the states that did not respond in order to get more complete information;

2. give a presentation at each Regional Meeting to describe how NTEP operates, the information available from NTEP, and what "proper" field enforcement under Handbook 44 and NTEP is; and

3. contact the International Society of Weighing and Measuring to determine opportunities to "bring the message" to its members.

See the Report of the Committee on Laws and Regulations (Item 236) for additional action on this item.

States that did not respond to the original survey were contacted again to complete the questionnaire. Results of the Questionnaire are contained in Appendix I.

102-3 I Participating Laboratories

The Executive Secretary reported on the authorized Participating Laboratories and their evaluation capabilities and activities. In addition to the NIST, California, New York, Ohio, and the Federal Grain Inspection Service are Participating Laboratories. NIST is working with other states that have expressed a desire to establish Participating Laboratories, including Alabama, and North Carolina.

See the following page for tabulations of "Certificates for Conformance Issued" by type device, and "Evaluations Conducted by Jurisdiction."

102-4 I Evaluation Report

The Executive Secretary reported on the NTEP evaluation activities, including the testing completed by each Participating Laboratory and Certificates of Conformance (CC) issued. A summary of his report is shown in the tables below.

CERTIFICATES OF CONFORMANCE ISSUED

	1985	1986	1987	1988
Total number of CCs	127	46	123	313
Full CCs	127	37	80	227
Provisional CCs		9[1]	43[2]	21[3]
Load cells		9[1]	43[2]	20[4]
Pre-NTEP CCs				45

[1] Six provisional CCs (all for load cells) upgraded to full in 1987 and 1988.
[2] Sixteen provisional CCs upgraded to full in 1988.
[3] Excludes Load Cells
[4] Thirteen provisional and seven full Certificates of Conformance.

EVALUATIONS CONDUCTED BY JURISDICTION

NTEP LAB	1985	1986	1987	1988
California	28	30	54	102
Ohio	2	7	35	44
FGIS	2	1		4
NIST	43	42	38	163
TOTAL	75	80	127	313

102-5 I Belt-Conveyor Scales, Test Procedures

Mr. Peter Perino, Chairman of this Sector, reported on the work of the Task Force. At a one-day organizational meeting in March, 1988, with representation from regulators, manufacturers, and users, it was decided that the approach for testing belt-conveyor scales would parallel that used for testing large capacity scales, that is, that the components would be tested in the laboratory and the total system would be tested in the field. Additional meetings were held in November, 1988 and June, 1989. A draft test procedure was produced. One additional working meeting is planned in early November, 1989 to convert the draft test procedures into a product for submission to the NCWM.

The goal of the Sector is to complete its work prior to the 1990 Interim Meeting.

J. Bartfai, New York, Chairman
F. Gerk, New Mexico, Chairman-Elect

D. Guensler, California, Past Chairman
L. Draghetti, Town of Agawam, MA
T. Geiler, Barnstable, MA
E. Heffron, MI
S. Hindsman, AR
P. Nichols, Alameda County, CA
D. Stagg, Alabama

C. Gardner, Suffolk County, NY, Treasurer

A. Tholen, NIST, Executive Secretary

Executive Committee

Appendix A

Publications, Office of Weights and Measures

The following publications and current price information may be obtained from the **Superintendent of Documents**, U.S. Government Printing Office, Washington, DC 20402 (202/783-3238). Remittance must accompany order.

NBS Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Commercial Weighing and Measuring Devices, H. V. Oppermann, editor, 1989 Edition (Sept. 1988) - SN003-003-02888-6 $15.00

NBS Handbook 130, Model State Laws and Regulations, C. S. Brickenkamp, editor, 1989 Edition (Sept. 1988) - SN003-003-02890-8 $11.00

NBS Handbook 133, Third Edition - Checking the Net Contents of Packaged Goods, C.S. Brickenkamp, S. Hasko, and M.G. Natrella, authors & editors - SN003-003-02885-1 $16.00

NBS Handbook 105-3, Specifications and Tolerances for Graduated Neck Type Volumetric Field Standards - SN003-003-02044-3

NBS Special Publication 304, Metric Chart - SN003-003-02365-5

NBS Special Publication 304A, Brief History of Measurement Systems - SN003-003-02366-3

NBS Special Publication 345, A Metric America - A Decision Whose Time Has Come - SN003-003-00884-2

NBS Special Publication 430, Household Weights and Measures - SN003-003-01542-3

NBS Special Publication 691, INDEX to the REPORTS of the National Conference on Weights and Measures - From the First to the Sixty-Ninth (1905-1984), W. G. Mott, editor, (1985) - SN003-003-02649-2

NBS Special Publication 442, Report of the 60th National Conference on Weights and Measures (1975) - SN003-003-01614-4

NBS Special Publication 471, Report of the 61st National Conference on Weights and Measures (1976) - SN003-003-01806-6

NBS Special Publication 517, Report of the 62nd National Conference on Weights and Measures (1977) - SN003-003-01966-1

NBS Special Publication 532, Report of the 63rd National Conference on Weights and Measures (1978) - SN003-003-02045-1

NBS Special Publication 566, Report of the 64th National Conference on Weights and Measures (1979) - SN003-003-02147-4

NBS Special Publication 599, Report of the 65th National Conference on Weights and Measures (1980) - SN003-003-02286-1

NBS Special Publication 629, Report of the 66th National Conference on Weights and Measures (1981) - PB821-78997

See NTIS (next listing) for copies of 66th, 67th, and 68th NCWM Reports.

NBS Special Publication 684, Report of the 69th National Conference on Weights and Measures (1984) - SN003-003-02637-9

NBS Special Publication 704, Report of the 70th National Conference on Weights and Measures (1985) - SN003-003-02702-2

NBS Special Publication 725 Report of the 71st National Conference on Weights and Measures, A. D. Tholen, C. S. Brickenkamp, and A. P. Heffernan, editors, (1986) - SN003-003-02765-1

NBS Special Publication 734 Report of the 72nd National Conference on Weights and Measures, A. D. Tholen, C. S. Brickenkamp, and A. P. Heffernan, editors, (1987) - SN003-003-02828-2

NBS Special Publication 750 Report of the 73rd National Conference on Weights and Measures, A. D. Tholen, C.S. Brickenkamp, and A. P. Heffernan-Turner, editors, (1988) available from Office of Weights and Measures.

The following publications may be obtained from the **National Technical Information Service**, 5285 Port Royal Road, Springfield, VA 22161 (703/487-4780 or 4650). Please contact them for current price information - there is a charge per page for paper copies. Remittance must accompany order.

NBS Special Publication 629, Report of the 66th National Conference on Weights and Measures (1981) - PB821-78997

NBS Special Publication 645, Report of the 67th National Conference on Weights and Measures (1982) - PB831-67148

NBS Special Publication 663, Report of the 68th National Conference on Weights and Measures (1983) - PB841-10998

NBSIR 85-3172, Package Checking Field Manual, to accompany NBS Handbook 133, Checking the Net Contents of Packaged Goods, C. S. Brickenkamp, S. Hasko, and M. G. Natrella, editors, (Aug. 1985) - PB86-108776/AS

NBS Handbook 143, State Weights and Measures Laboratory Program Handbook, H. V. Oppermann and J. K. Taylor, (Feb. 1985) - PB85-183358

NBS Handbook 117, Examination of Vapor-Measuring Devices for Liquefied Petroleum Gas, S. Hasko, - PB 248987

NBS Special Publication 686, State Weights and Measures Laboratories Program Description and Directory, H. V. Oppermann, (Jan. 1985) - PB85-137651

NBS Handbook 145, Handbook for the Quality Assurance of Metrological Measurements (1986) - PB87140422NBS Handbook 94, The Examination of Weighing Equipment - COM. No. 73-10635

NBS Handbook 98, The Examination of Farm Milk Tanks - COM. No. 72-10619 (May 1964)

NBS Handbook 99, The Examination of Liquefied Petroleum Gas Liquid-Measuring Devices -- this has recently been replaced by National Training Program Module 21; call 301/975-4007 for information.

NBS Handbook 112, Examination Procedure Outlines for Commercial Weighing and Measuring Devices - COM. No. 73-50836

Executive Committee

The following publications may be obtained from the **Office of Weights and Measures**, National Institute for Standards and Technology, A617, Gaithersburg, MD 20899.

NBS Handbook 133, Third Edition Field Manual - Checking the Net Contents of Packaged Goods, C. S. Brickenkamp, editor, SN003-003-02885-1 $16.00 (continually updated)

NBS Handbook 105-1, Specifications and Tolerances for Field Standard Weights

NBS Handbook 105-2, Specifications and Tolerances for Field Measuring Flasks

NBS Handbook 137, Examination of Distance Measuring Devices

NBS Special Publication 447, Weights and Measures Standards of the United States, A Brief History

Letter Circular 1035, Units and Systems of Weights and Measures, Their Origin, Development, and Present Status

NBS Special Publication 750, Report of the 73rd National Conference on Weights and Measures

Appendix B

Publications, NCWM

The following publications may be obtained from the **National Conference on Weights and Measures**, P.O. Box 4025, Gaithersburg, MD 20885. There is no charge for NCWM members; nonmembers, please call 301/975-4012 for current price.

NCWM Pub 1.	NCWM Constitution and Bylaws, 1988
NCWM Pub 2.	State and Local Weights & Measures Directory 1989 Edition
NCWM Pub 3.	NCWM Policy and Guidelines 1989
NCWM Pub 4.	NTEP Policy and Procedures 1984 (combined with Pub. 14)
NCWM Pub 5.	NTEP Index of Evaluations (through 1988)
NCWM Pub 6.	NCWM Organization, Procedures, and Membership Plan Brochure, 1987
NCWM Pub 7.	Weights & Measures Week Guide 1989
NCWM Pub 8.	National Type Evaluation Program and Its Relationship to the Weights and Measures Law, NBS Handbook 44, and the New Scales Code
NCWM Pub 9.	Directory - Associate Members, 1988
NCWM Pub 10.	Guide for Conduct of Annual Meeting (annually produced as script for Conference officers)
NCWM Pub 11.	National Training Program 1987
NCWM Pub 12.	Examination Procedure Outlines, 1987
NCWM Pub 13.	Weights and Measures Information System (WAMIS) Guide
NCWM Pub 14.	NTEP Criteria and Procedures (1989)
NCWM Pub 15.	Interim Meeting Agenda 1988
NCWM Pub 16.	Announcement Book
NCWM Pub 17.	Report of TF on Prevention of Fraud
NCWM Pub 18.	National Training Program Directory 1988

Early NCWM Proceedings Available From NTIS

The proceedings of the first through the sixteenth NCWM annual meetings now are available for purchase from the National Technical Information Service (NTIS) Springfield VA 22161 in paper copy form or in microfiche. The titles and NTIS accession numbers of all of the early proceedings that are currently available are listed below.

Title	NTIS Accession No.
First Conference on the Weights and Measures of the U.S. - 1905 (NBS Misc. Pub. 4)	PB87-232427
Second Conference on the Weights and Measures of the U.S. - 1906 (NBS Misc. Pub. 5)	PB87-232435
Third Conference on the Weights and Measures of the U.S. - 1907 (NBS Misc. Pub. 6)	PB87-232443
Fourth Conference on the Weights and Measures of the U.S. - 1908 (NBS Misc. Pub. 7)	PB87-232450
Fifth Conference on the Weights and Measures of the U.S. - 1910 (NBS Misc. Pub. 8)	PB87-232468
Sixth Conference on the Weights and Measures of the U.S. - 1911 (NBS Misc. Pub. 9)	PB88-124219
Seventh Conference on the Weights and Measures of the U.S. - 1912 (NBS Misc. Pub. 10)	PB88-124227
Eighth Conference on the Weights and Measures of the U.S. - 1913 (NBS Misc. Pub. 11)	PB88-124201
Ninth Conference on the Weights and Measures of the U.S. - 1914 (NBS Misc. Pub. 12)	PB88-124235
Tenth Conference on the Weights and Measures of the U.S. - 1915 (NBS Misc. Pub. 13)	PB89-122055
Eleventh Conference on the Weights and Measures of the U.S. - 1916 (NBS Misc. Pub. 14)	PB89-122063
Twelfth Conference on the Weights and Measures of the U.S. - 1919 (NBS Misc. Pub. 41)	PB89-122071
Thirteenth Conference on the Weights and Measures of the U.S. - 1920 (NBS Misc. Pub. 43)	PB89-122089
Fourteenth Conference on the Weights and Measures of the U.S. - 1921 (NBS Misc. Pub. 48)	PB89-122097
Fifteenth Conference on the Weights and Measures of the U.S. - 1922 (NBS Misc. Pub. 51)	PB89-122105
Sixteenth Conference on the Weights and Measures of the U.S. - 1923 (NBS Misc. Pub. 55)	PB89-122113

Appendix C

NCWM Membership by State

(* 87 data as of 12/1/87)
(88 data as of 3/1/89)

Key: 88W = Weights and Measures officials who are members
88I = Associate (industry) members

Jurisdiction	Members			
	86	87*	88W	88I
Alabama	16	14	9	10
Alaska	3	10	12	2
American Samoa	1	1	1	0
Arizona	8	6	30	7
Arkansas	21	40	29	24
California	96	97	67	83
Colorado	18	13	2	10
Connecticut	23	25	14	27
Delaware	7	8	7	2
District of Columbia	36	47	0	28
Florida	20	20	8	11
Georgia	21	25	9	23
Guam	1	0	2	0
Hawaii	3	3	16	2
Idaho	14	7	4	2
Illinois	56	54	21	59
Indiana	50	48	49	16
Iowa	10	8	12	8
Kansas	32	33	22	17
Kentucky	3	6	4	4
Louisiana	4	7	3	5
Maine	5	11	13	2
Maryland	39	41	6	25
Massachusetts	54	51	84	36
Michigan	22	23	83	25
Minnesota	30	28	4	38
Mississippi	7	6	4	8
Missouri	53	57	34	32
Montana	1	1	1	0
Nebraska	26	23	22	8

Jurisdiction	Members			
	86	87*	88W	88I
Nevada	1	2	1	0
New Hampshire	4	5	8	4
New Jersey	74	67	35	60
New Mexico	27	5	24	5
New York	72	71	58	43
North Carolina	25	21	6	26
North Dakota	2	2	1	2
Ohio	106	109	125	55
Oklahoma	19	17	5	18
Oregon	12	11	7	4
Pennsylvania	64	63	42	45
Puerto Rico	6	3	5	1
Rhode Island	2	4	4	1
South Carolina	4	7	3	5
South Dakota	13	11	11	7
Tennessee	11	13	9	11
Texas	46	41	12	44
Utah	4	4	1	5
Vermont	11	9	9	2
Virginia	33	65	12	19
Virgin Islands	1	2	3	0
Washington	19	15	13	11
West Virginia	9	6	27	7
Wisconsin	34	30	31	28
Wyoming	7	5	1	7
Total	1286	1301	1025	924

PRESIDENT'S AWARD

Most of the states that had qualified for banners prior to the July 1, 1987 - June 30, 1988 NCWM year repeated and qualified for streamers. The states that qualified in 1987 - 1988 membership year (awarded at the 73rd NCWM) are listed below.

This award is a banner presented to the State Director of each state having 100% of its weights and measures officials as members of the National Conference on Weights and Measures.

First Year Banner Awards

District of Columbia Vermont Virginia

Streamers for Second Year 100% Membership

Alaska Delaware Idaho Kansas South Dakota

Streamers for Third Year 100% Membership

Arkansas Nebraska

There are several states that have qualified for a banner or streamer for the 1988 - 89 year, and will be awarded these banners or streamers at the 74th NCWM:

First Year Banner Awards

Arizona Hawaii Michigan New Hampshire West Virginia

Streamers for Second Year 100% Membership

Vermont New Mexico

Streamers for Third Year 100% Membership

Alaska Delaware Idaho Kansas South Dakota

Streamers for Fourth Year 100% Membership

Arkansas Nebraska

State directors in other states are attempting to justify membership as a routine budget element by using it as an economic source of handbooks needed by the staff:

Membership:	$35	vs.	H44	$15
			H130	$11
			H133	$16
			Total	$42

Composition of NCWM Mailing List 86/87/88 (as of 3/1/89)

Category	NCWM Members				Non-Members			Total			% of Tot. who are
	86	87	88	% incr.	86	87	88	86	87	88	members
State	241	271	537	97	862	903	860	1103	1174	1397	38
County	158	162	275	70	672	727	615	830	889	891	31
City	126	115	213	85	436	398	453	562	513	666	32
Subtotal	525	548	1025	87	1970	2028	1929	2495	2576	2954	35
Industry (U.S.)	749	717	924	29	2456	2372	1812	3205	3089	2736	35
Industry (frgn)*			15				50			65	23
Subtotal	749	717	939		2456	2372	1862	3205	3089	2801	34
Federal	31	27	44	63	18	21	135	49	48	179	25
Foreign Govt.*			18				65			83	22
Retirees	8	9	31		5	6	46	13	15	77	40
Subtotal			93				200			293	
Guests							112			112	
Total	1313	1326	2058	55	4449	4564	4148	5762	5890	6206	33

* Foreign industry and government was:

Members 87 = 25; Nonmembers 87 = 137; Total 87 = 162

Appendix D

Report on OIML to the Annual Meeting

Sam Chappell, NIST

Last year was a very busy year for OIML. I plan to give you highlights of some of those relevant activities since my last report to you at the Annual Meeting in Grand Rapids in July of 1988. I will also provide you with highlights of planned and anticipated activities for the coming year.

The important event last fall was the 8th quadrennial Conference on Legal Metrology held in Sydney, Australia. Dr. Stanley Warshaw (Associate Director for Industry and Standards, NIST) led the U.S. Delegation that included myself as the U.S. Representative to OIML, Mr. Albert Tholen representing the NIST Office of Weights and Measures, and Mr. John Bartfai (Chairman, NCWM) representing the NCWM. Of the total membership of 50 nations, representatives of 37 member nations attended. In addition, several liaison organizations attended including ISO, IEC, CGPM, and CECIP (the European Scale Manufacturers Association).

The main objectives of the Conference were to sanction the international recommendations completed during the past four years, to approve a budget for the next four years (1989-92), and to debate and issue new work plans and policies for the organization. Twenty-six international recommendations were approved on subjects addressing product labeling and instruments for measuring mass, volume, pressure, temperature, environmental pollutants, and medical-health. The United States made significant contributions to over one-third of these recommendations. The NCWM's assistance in the development of several of these was noteworthy. We supported the approved budget for the next 4 years. That budget would include funds for adding another member to the staff of the International Bureau of Legal Metrology (BIML) and for a much needed renovation of the BIML headquarter's building.

We supported all but the following three sanctioned recommendations; (1.) "Automatic Measurement of the Liquid Level in Fixed Storage Tanks," (2.) "Integrating-averaging Sound Level Meters," and (3.) "Non-automatic Weighing Instruments." The recommendation on fixed storage tanks was opposed mainly on the advice of a U.S. instrument manufacturer because it was limited to prescribing only one of several devices that could be used for measuring liquid levels although the scope and requirements of this recommendation were presumed to include all technical measuring means. As for the recommendation on "Non-automatic Measuring Instruments," we opposed it mainly on advice from both SMA and NCWM because of requirements for "durability tests" that were specified by the Secretariat without any justifiable technical basis. This recommendation also was not in harmony with the advice provided in IR74 on "Electronic Weighing Instruments." Opposing this recommendation was a difficult choice for us since we proposed this new recommendation which combined the requirements of three existing recommendations, namely ones addressing the metrologic (IR3), technical (IR28) and electronic (IR74) requirements for these instruments. Other than the United States, Austria and Italy voted negative on this proposed IR for other reasons, and the Netherlands and Japan abstained. The record of the Conference will show that the Secretariat (France and West Germany) agreed to begin work shortly on a revision of this recommendation to take into account some of the negative issues raised by the U.S.A. and other member nations. In view of this response, our negative vote may have a positive effect on the future content of this recommendation. The companion IR74 on "Electronic Weighing Instruments," for which the U.S.A. is responsible, was approved without comments.

Other recommendations sanctioned of interest to the NCWM were as follows:

- Measuring Assemblies for Liquids other than Water Fitted with Volume Meters (West Germany and France)
- Information of Package Labels (USA)
- Road and Rail Tankers (France and Romania)
- Measuring Devices and Measuring Systems for Cryogenic Liquids (USA)
- Heat Meters (West Germany)

- o General Provisions for Volumetric Gas Meters (West Germany)
- o Rotary Piston Gas Meters and Turbine Gas Meters (West Germany)
- o Net Content in Packages (Switzerland)

A complete list of all sanctioned recommendations will be attached to this report for your records.

Two other important issues discussed at the Conference and recorded as resolutions were: (1.) an OIML Certificate Program for Measuring Instruments and (2.) the CIML approval of international recommendations. I discussed the proposed voluntary Certificate Program with you earlier. It would be limited to type approval and not include verification. Draft implementation procedures for the voluntary program have been developed by BIML. We are now reviewing the second preliminary draft on that program and have distributed it for comments. Such a program could benefit both regulating officials and instrument manufacturers if properly designed and if member nations choose to participate in it. On the second point, CIML was given authority to approve recommendations at its meetings, which occur approximately once every 18 months; however, member nations will still commit themselves at the quadrennial Conference to implement, or harmonize, such recommendations in their laws and regulations. This change in approval procedure should improve the timeliness of the work of the OIML Secretariats.

A CIML meeting was held before and after the Conference mainly to implement the resolutions of the Conference. In addition, the four-year work plans and criteria for establishing priorities of work for the Secretariats were approved. I was unanimously elected to fill one of the positions as Vice President of CIML.

Overall, our view was that the Conference was very successful with respect to the objectives of the United States.

On November 17, Bernard Athane, Director of BIML, and Knut Birkeland, President of CIML and Director General of the Norwegian Metrology Services, visited Dr. Ambler and other NIST managers to discuss current and long range plans of OIML and to learn about the new organization of NIST with respect to its committment to support U.S. representation and participation in OIML. These visitors particularily emphasized the anticipated and current influence on OIML by cooperative efforts in Western Europe, mainly in the EEC, among national metrology laboratories, calibration services, testing laboratories, and accreditation schemes. The plan to unify the EC market by 1992 is the driving force behind these cooperative efforts. The message was that it was essential that OIML remain a forum for reflecting and providing recommendations and advice for legal measuring instruments applicable worldwide; therefore, strong participation is needed by nations outside Western Europe, including especially the United States, to counterbalance the European influences. The responsible NIST management within the new organization indicated a determined committment of continued support to U.S. participation and representation in OIML.

The following meetings of interest to NCWM were held since the last annual meeting:

- o PS5D/RS1 "Meters and Measuring Systems for Liquids other than Water with Measuring Chambers or with Turbines" (France and West Germany) and PS5D/RS6 "Electronic Devices Applied to the Measurement of Volume of Liquids" (France)
  April 17-20, 1989 in Paris
- o PS5D/RS10 "Direct Mass Flow Measurement of Quantities of Liquids" (U.S.A.)
  April 5-6, 1989 in Teddington, England
- o PS7/RS5 "Automatic Weighing Instruments" (U.K.)
  April 10-14, 1989 in Teddington, England discussing
  - Continous Totalizing Automatic Weighing Instruments,
  - Discontinuous Totalizing Automatic Weighing Machines, and
  - Automatic Rail-Weighbridges.
- o PS8 "Weights" (USA)
  April 7, 1989 in Teddington, England discussing the revision and possible compilation of several IRs on Weights including IR1, IR2, IR20, IR25, and IR52 and to discuss work plans for the Secretariat.

Mr. Otto Warnlof (Office of Standards Management, NIST) has already provided a detailed report on these activities to the S & T Committee.

Other scheduled meetings of interest are:

- o CIML Presidential Council
  April 13-14, 1989 in Paris at which the first preliminary draft on the OIML Certificate Program for Measuring Instruments was discussed.

- o Development Council Seminar on "Planning and Equipping Metrology and Testing Laboratories."
  September 25-26, 1989 in Paris

- o The 24th Meeting of CIML
  September 27-29, 1989 in Paris. The agenda will include:
  - Certification
  - State of the Progress of Work
  - Adoption of 3 Recommendations
  - Long Term Policy of the Organization

- o PS5D/RS7 "Methods and Devices for Verification of Measuring Instruments for Liquids" (Japan) and PS5D/RS10 "Vortex Meters" (Japan) November 6-10, 1989 in Tokyo. The draft recommendations to be discussed are:
  - Characteristics of Pipe Provers and Test Methods for Measuring Assemblies,
  - Testing Procedures for Pattern Examination of Fuel Dispensers for Motor Vehicles, and
  - Measuring Assemblies for Liquids fitted with Vortex Meters.

- o OIML Technical Seminar "Weighing at Braunschweig"
  May 15-18, 1990 at PTB in Braunschweig, Federal Republic of Germany to discuss recent developments in both design and legal control of weighing instruments.

We will look forward to your advice on our participation in all future meetings and will keep you informed about the meeting results.

Some related activities of interest are as follows:

- o An international intercomparison of six load cells has been carried out according to the requirements of OIML IR60 on "Load Cells" among the national measurement laboratories of Australia, West Germany, the Netherlands, the U.K., and the U.S.A. A summary report on the measurement results has been prepared by the Force Measurement Group of NIST and distributed to participants for comment. A final report for publication and a proposed agreement among participants for mutual recognition of test data are expected to be finalized soon.

- o BIML has developed a document on "Guidelines on the Use of Graphical Symbols on Measuring Instruments." We provided comments on early drafts. This document is expected to become a joint publication among OIML, ISO, and IEC. A similar joint effort among these organizations and BIPM on the "International Vocabulary of Basic and General Terms in Metrology" is being revised. The new version of that vocabulary is expected to be completed by the end of 1989.

- o We are in the process of drafting an OIML document on "Quality Assurance Applied to Metrological Control." This work will be under the Pilot Secretariat 22 on "Principles of Metrological Control" for which the U.S.A. is responsible. This document will provide a guide to how instrument manufacturer's quality control procedures might be used instead of traditional verification procedures for legal control of measuring instruments.

We look forward to the continued collaboration and support of NCWM in those OIML activities of interest.

Appendix E

Operating Budget 89/90
(July 1, 1989 to June 30, 1990)

Columns (c) and (d) contain the budgeted amounts proposed for the FY 89/90. Column (e) contains the budgeted amounts for FY 88/89 (the current year that began on July 1, 1988 and runs through June 30, 1989). Column (f) contains the actual income and expenses for the FY 87/88 (the year completed June 30, 1988).

INCOME

Number (a)	Name (b)	FY89-90 Subaccount (c)	FY89-90 Account (d)	FY88-89 Budget (e)	FY87-88 Actual (f)
1.1	Registration Fees		$30,000	$30,000	$31,305
1.2	Membership Fees		67,550[1]	45,500	61,402
1.3	Training Modules		6,500	6,500	7,420
	1.3 NTP Modules				
	1.3a HB 133 Field				
1.4	Interest		3,000[2]	2,000	3,192
1.5	Promotional		1,000	1,000	668
1.6	Special Events		5,000	5,000	3,790
1.9	Miscellaneous		300	200	250
	Total		$ 113,350	$ 90,200	$108,027

Footnotes (INCOME):

[1] Assumed membership of 1930 @ $35 = $ 67,550.

[2] Based on higher average of assets invested.

Expenses

Number (a)	Name (b)	FY89-90 Subaccount (c)	FY89-90 Account (d)	FY88-89 Budget (e)	FY87-88 Actual (f)
2.0	Annual Meeting		$14,000[3]	$12,000	$ 9,880
3.0	Interim Meeting		4,000	4,000	2,383
4.0	Committee Meetings		20,000[4]	17,000	19,242
4.1	Executive	[5,000]		[5,000]	[3,690]
4.2	Laws and Regs	[3,000]		[2,500]	[5,920]
4.3	Specs & Tol	[3,500]		[2,500]	[1,639]
4.4	Education	[3,500]		[3,500]	[1,606]
4.5	Liaison	[3,000]		[2,000]	[1,059]
4.9	Misc	[2,000]		[1,500]	[5,328]
5.0	Special Meetings		18,000	14,000	16,060
5.1	NTEP	[6,000][5]		[4,000]	[7,400]
5.2	OIML	[4,000][6]		[4,000]	[1,432]
5.7	TF on Belt Conveyor	[2,000][7]		[3,000]	[1,192]
5.8	TF on Energy Systems	[2,000][7]		[2,000]	[1,996]
5.9	TF on Safety	[4,000]		[1,000]	
6.0	Chairman/Chairman Elect		12,550[8]	6,000	7,972
7.0	Membership Program		6,000	6,000	7,106
8.0	Printing/Pubs		6,000[9]	4,000	3,859
9.0	Administration		12,500[9]	7,000	10,203
10.0	Special Events		5,000	5,000	6,058
11.0	Promotion		1,300	1,200	962
12.0	Training Modules		14,000	14,000	3,958
12.4	Printing Existing	[4,000]		[4,000]	
12.5	Materials, Module Implementation	[10,000][10]		[10,000]	
	Total Disbursements		$113,550	$90,200	$87,683

Footnotes (EXPENSES):

[3] Expenses are increasing at about $ 2,000 per year due to cost of doing business including printing of Addendum Sheets.

[4] Reflects increasing transportation costs.

[5] Increased to provide for one additional meeting to handle possible appeal(s).

[6] See NCWM Policy 1.5.2.; the NCWM adopted this policy in 1979 for budgeting of $ 8,000 per year for participation in the work of the OIML. This amount is augmented by the NIST which pays 50% of the expenses of NCWM participation in selected working groups. Based on anticipated participation, this item is budgeted at $4,000.

[7] These TFs will complete their work in the fall of 1989.

[8] Provides for additional participation in the work of the Regional Associations by the Chairman and the Chairman-Elect.

[9] Reflects general increase in the cost of conducting routine business (paper. services, etc.)

[10] Second annual allocation of $ 10,000 for use in the implementation of the use of the modules.

Appendix F

National Conference on Weights and Measures
Task Force on Energy Allocation

Summary

The National Conference on Weights and Measures (NCWM) Task Force on Energy Allocation met October 6-7, 1988, April 5-6, 1989, and June 19-20, 1989 at NIST in Gaithersburg, Maryland. As a result of extensive study and discussion prior to and during these meetings, the Task Force concluded that:

1) energy or utilities allocation is not a weights and measures concern with respect to device regulation;
2) the NCWM Liaison Committee should approach an organization which might more appropriately regulate energy or utilities allocation systems;
3) information collected by the Task Force should be presented to such organization in the form of a recommended regulation as a basis for that organization to begin its work;
4) the Task Force should assist the Liaison Committee as requested; and
5) guidelines should be provided for use by weights and measures jurisdictions that receive complaints on allocation systems.

Details of all Task Force meetings are available upon request. A copy of the Recommended Regulation for Energy or Utilities Allocation Systems referenced in Item (3) above was printed in NCWM Publication 16 as Appendix G to the Interim Report of the Executive Committee.

In the process of assisting the Task Force with the issue of energy or utilities allocation, members of the energy or utilities allocation industry formed an association known as National Utilities Allocation Association. As a result of the Task Force meetings held since the publication of Appendix G in NCWM Publication 16 and comments received from members of the energy or utilities allocation industry, changes have been made to the recommended regulation. A final version of the recommended regulation is given in a revised version of Appendix G along with a summary of the major changes.

In the process of developing the recommended regulation, the Task Force discussed the use of a standardized complaint form to be used for registering complaints about energy or utilities allocation systems. The Task Force developed samples of a tenant complaint form and a management response form. These sample forms are intended to be presented to the regulating agency for their use in developing their own version of such forms and might also be used by weights and measures jurisdictions. Copies of the forms accompany this report.

A detailed report of the work of the Task Force since its establishment will be available in the form of a National Conference on Weights and Measures publication following the National Conference on Weights and Measures in July 1989.

Background Information

Study of the issue prior to the October meeting provided the Task Force with an overview of the types and capabilities of energy allocation systems in use in the United States. The systems used to allocate costs of energy usage are divided into two broad categories: a gas, oil, or electric fired heating system or a hydronic heating/cooling system. The Task Force reviewed each type of system to determine its ability to provide the actual measurement of energy usage as required by the weights and measures community. It examined the types of systems used with each of these heating methods. The criteria outlined below are considered to be minimum requirements for a system to be appropriate to the weights and measures community. Failure to meet these criteria indicates that "assumptions" are being made to arrive at a supposedly "measured" quantity.

Many of the identified systems may utilize precise measuring instruments for part of the total energy measurement. However, these systems were found to make assumptions about various other parameters

required to arrive at the final energy determination. Because these systems only approximate energy usage and do not provide actual energy measurement, it is the opinion of the Task Force that they do not lend themselves to rigorous certification procedures (for example, testing for repeatability and accuracy) required by weights and measures.

Gas, Oil, or Electric Fired Furnace Systems:

1) Elapsed Time Monitors

Many of these systems do not have all of the parameters considered necessary for determining energy usage. The following features are considered minimal for an elapsed time monitor system to be adequate for determining energy usage.
Note: Elapsed time monitors are not acceptable for use with variable rate heating devices.

a) For constant rate furnaces, monitor the time of gas, electric, or oil delivery (or cubic feet of gas delivered, or kilowatt hours consumed for electric systems, or gallons consumed for oil systems);
b) Provide the rate of consumption of the furnace or, alternatively, the metered rate of gas (cubic feet per hour), electricity (kilowatts), or oil consumption (gallons per hour);
c) Provide means to assure that the timer is activated only when gas, electricity, or oil is being consumed.

Comparisons with devices or systems that do provide measurements must be made prior to concluding whether or not these systems are able to measure or provide a basis for calculation of actual energy usage.

2) BTU Meters

No BTU meters for gas, oil, or electric fired systems are known. (Metered electric kilowatt hours, cubic feet of gas, or gallons of oil do provide a basis for the calculation of BTU energy input.)

3) Time/Temperature

No time and temperature systems for gas, oil, or electric fired systems are known.

4) Comfort Systems

These systems do not provide an acceptable means for determining energy usage; they only monitor the setting of the thermostat; they do not measure actual energy usage.

Hydronic Heated/Cooled Systems Served By In-Building Boilers and Chillers, Or By District Heating and Cooling:

1) Elapsed Time Monitors

These systems are inappropriate since they do not measure two important parameters for energy use determination: the temperature and the flow rate of the water.

If these systems were to measure the temperature of the water and the flow rate, they would then fall into the category of BTU meters.

2) BTU Meters

These meters are capable of completing the BTU Formula by determining the following parameters to be used in calculating the total energy usage:

a) change in temperature of the water;
b) volume of water; and
c) time

These devices appear to be acceptable means of determining energy usage for the purposes of cost allocation since they take into account the parameters required to determine actual energy usage. The landlord will determine a cost per unit of energy for each billing period. When setting the cost per unit of energy, the landlord must take into account the cost of maintaining the heating/cooling system and the amount that was paid for the fuel, electricity, or thermal energy used to run the heating/cooling system. The tenant's bill will be calculated from the amount of energy used (as determined by the BTU meter) and the cost per unit of energy that the landlord set for that billing period.

In determining the cost of operating the hydronic heating system for the building, kilowatt hour meters (for electricity), and Btu meters (for thermal energy) can be used to calculate or directly indicate the BTU energy input. Oil consumption meters (in gallons), or gas consumption meters (in cubic feet), can be used to calculate total BTU energy input including stack loss. (They cannot be used to calculate the portion not including stack loss.)

3) Time/Temperature Monitors

These systems measure time by use of a timing device. They determine temperature using a temperature sensor or by assumption. These systems were determined to be inappropriate from a weights and measures standpoint since they do not measure flow rate, and they may assume temperature. In order to be appropriate, flow rate should be measured, and the temperature value should not be assumed. If these two parameters were to be measured, the system would then fall into the category of a BTU meter.

4) Comfort Systems

The Task Force has determined that, from a weights and measures standpoint, these systems do not provide an acceptable means for determining energy usage. These systems only monitor the setting of the thermostat; they do not measure actual energy usage.

Recommendations

Although energy or utilities allocation systems are not fully acceptable in terms of measurement, Task Force members recognize that they fulfill a need and serve a purpose to landlords and to tenants, and they may provide an incentive to conserve energy. The Task Force feels that weights and measures should not regulate these systems as measurement devices, but that it has an obligation to the members of the National Conference on Weights and Measures to guide the issue in a direction which will ultimately result in resolution. Failure to pursue the issue in this manner would prevent the Task Force from fulfilling the tasks originally delegated to it.

The Task Force makes the following recommendations to the NCWM based on its extensive study and discussion; they address the needs perceived by the members of the National Conference on Weights and Measures.

1) Request that the Liaison Committee work with the Task Force to:

a) approach a national organization, such as the National Association of Regulatory Utility Commissioners, which would more appropriately regulate energy or utilities allocation systems; and

b) work with industry groups such as the International District Heating and Cooling

Association, American Society of Heating and Refrigeration Engineers (ASHRAE), Building Owners and Managers Association (BOMA), or National Utilities Allocation Association (NUAA) to develop guidelines for these systems.

2) Request that the Liaison Committee present the information collected by the Task Force in the form of a recommended "regulation" (along with suggested tenant complaint and management response forms) to the regulating organization. The regulating organization could use the regulation as a basis for establishing its own set of requirements for the regulation of energy or utilities allocation systems. The intent of providing a model "regulation" is to:

   a) provide an incentive for the regulating organization to develop requirements for the regulation of energy or utilities allocation systems; and

   b) increase the likelihood that the requirements identified in the draft will be in the final regulations established by the regulating organization.

3) Provide the benefit of the knowledge of the Task Force members in the area of energy or utilities allocation to the Liaison Committee in encouraging the regulating organization to implement these recommendations through its members in each state.

4) Propose that the following guidelines established by the Task Force for weights and measures officials be utilized by jurisdictions that receive complaints on these systems.

Outline of Procedures for Responding to Complaints About Energy or Utilities Allocation Systems

a) Contact All Parties Involved

i) Gather as much information as possible from all parties involved to ascertain if the complaint pertains to energy or utilities allocation systems. (Complaints which do not pertain to energy or utilities allocation systems should be referred to the appropriate agency.) Include a detailed account of each party's version of the incidents which took place. If possible, include such information as the nature of the complaint, the time period over which the complaint took place, the manufacturer and model of the system involved in the complaint, the names and addresses of all individuals involved, and what other agencies the complainant has contacted.

b) Involvement of Other Agencies

i) If another agency (or agencies) is known to have regulatory authority over such systems, contact that agency (or agencies) and provide them with the information collected in (I)(A). Request that they proceed with the complaint and notify the complainant.

ii) If no other agency is known to have regulatory authority over energy or utilities allocation systems, it will be necessary to identify other agencies which might better provide assistance to the complainant.

iii) Some suggested contacts of regulatory and non-regulatory agencies include:

Consumer Protection Agency of the Office of the Attorney General
Local or State Consumer Protection Office
Landlord/Tenant Organization
National Utilities Allocation Association
Public Service Commission/ Public Utilities Commission
State or Local Building Inspector's Office
State Department of Energy

iv) If the efforts listed in (A) and (B) fail to identify an agency which is able to assist the complainant, an agency which will act as a mediator must be identified. As a final alternative, it may be necessary for the state/local weights and measures office to act as a mediator for the parties involved.

c) **Referral to the NUAA**

i) Advise complainant to contact NUAA at NUAA's toll-free telephone number (This number is to be established in August 1989 and will be distributed to state weights and measures directors for distribution to local weights and measures offices.)

ii) Advise the complainant to contact weights and measures if NUAA is unable to assist them in the resolution of their complaint.

d) **Weights and Measures Office as Mediator**

i) In the event that NUAA is unable to assist the complainant in the resolution of the complaint, it would be advisable for the weights and measures jurisdiction to attempt to mediate the complaint in a non-regulatory role.

ii) If unable to successfully mediate, advise the complainant that, as a last course of action, they may wish to pursue the complaint through their local legal system.

e) **Documentation**

Adequate documentation should be maintained throughout the handling of the complaint. Any forms or procedures normally used by the weights and measures jurisdictions for handling complaints should be used. Documentation should include all details of the complaint, all details of weights and measures participation, and a description of contacts with other agencies. Since it may be necessary for the weights and measures office to participate in the resolution of the complaint, sufficient documentation is essential.

f) **Completion of Complaint**

Whether or not the weights and measures jurisdiction has handled the entire complaint, the weights and measures office should follow up by contacting the complainant after a reasonable period of time to insure that the complaint has been satisfactorily resolved. Use any additional procedures normally used by the jurisdiction for following up on a complaint to determine if the complaint can be closed.

Appendix G

National Conference on Weights and Measures
Task Force on Energy Allocation

Recommended Regulation for Energy or Utilities Allocation Systems
Final Version

The following represents the final version of the recommended regulation originally published as an Appendix to the Interim Report of the Executive Committee on Pages 1-36 to 1-44 of National Conference on Weights and Measures (NCWM) Publication 16. All changes made to the document as a result of the April and June 1989 meetings of the Task Force have been incorporated into this version.

Many weights and measures jurisdictions reported receiving complaints about energy allocation systems, but were often unable to resolve them due to a lack of definitive regulations or of identification of an agency with specific authority to regulate them. The establishment of regulations is necessary in order for energy allocation systems to be controlled and their benefits recognized. The Task Force recommends that this regulation be presented to national associations of regulatory utility or energy commissions (for example the National Association of Regulatory Utility Commissioners) for their use in developing regulations for energy allocation systems for adoption at the state and local level. This recommendation is not intended for adoption by weights and measures jurisdictions.

Although intended for use in non-owner-occupied multi-unit facilities, this recommended regulation may be modified and adapted for application to owner-occupied multi-unit facilities or those multi-unit facilities which utilize a time sharing plan. A time sharing plan can be defined in this context as any arrangement, plan, scheme, or similar device, whether by membership, agreement, tenancy in common, sale, lease, deed, rental agreement, license, or right-to-use agreement or by any other means, whereby a purchaser, in exchange for a consideration, receives a right to use accommodations, or facilities, or both, for a specific period of time less than a full year during any given year, but not necessarily for consecutive years and which extends for a period of more than three years.

Chapter 01 General

01.01 Applicability

A. The requirements contained in this regulation govern the use of energy or utilities allocation systems which allocate to a tenant of an individual unit a portion of the cost of all energy or utilities consumed in a multi-unit facility based upon devices which indirectly approximate energy or utilities usage.

B. An energy or utilities allocation system may not be used unless approved by the Agency [1] under this regulation.

C. This regulation does not apply to submeters from which a separate bill issued by the energy- or utilities-supplying company to the tenant is derived.

[1] The term "Agency" is used in this document to refer to the organization which accepts responsibility for regulating energy or utilities allocation systems.

01.02 Definitions

Adjusted Bill:
a bill issued to a tenant which is based on usage which has been adjusted from the utility company's reported meter readings.

Agency:
the local regulatory authority having jurisdiction over energy or utilities allocation systems.

Approximate Energy or Utilities Use:
the energy or utilities allocated to an individual unit within a multi-unit facility as determined by a means other than actual measurement by meters or submeters such as are routinely employed by regulated utility companies.

Base Usage:
the energy or utilities consumed in maintaining an energy source available for consumption by tenants, such as the boiler fuel consumed in a hydronic heating system during a period of no active load.

Billing Agent:
the entity authorized to issue energy or utilities allocation system billings to the tenant of an individual unit in a multi-unit facility.

Consumer Protection Division:
the Consumer Protection Division of the Office of The Attorney General or equivalent agency.

Costs:

Distributed Costs:

those fees, charges, or assessments for utility usage attributed to an individual unit by use of an Agency-approved method. Industry accepted practices currently include allocation on the basis of parameters such as individual measurement, number of occupants, or square footage.

Measured Costs:

those fees, charges, or assessments for utility usage in an individual unit which are allocated on the basis of regularly recurring measurements of specified measurement units.

Owner-Paid Costs:

those fees, charges, or assessments for utility costs outside individual units or in owner-occupied or shared common areas such as maintenance shops, vacant units, meeting rooms, hall spaces, offices, swimming pools, or model apartments.

Energy or Utilities Allocation Equipment:
a measurement device or other equipment used to determine approximate energy or utilities use.

Energy or Utilities Allocation Procedure:
the method by which the approximate energy or utilities use of an individual unit and the energy or utilities costs billed to a tenant are determined in conjunction with the readings recorded by the energy or utilities allocation equipment.

Estimated Bill:
a bill issued to a tenant which is based on utility company estimated meter readings for either the starting or the ending date of the utility company billing period.

Individual Unit:
a single unit within a multi-unit facility.

Measurement Unit:
the unit used to measure the characteristic recorded by a measurement device.

Measurement Device:
a device which measures characteristics used to determine the approximate energy or utilities use within an individual unit. (for example: furnace operating or running time, baseboard pipe temperature, steam radiator time/temperature, etc.)

Multi-Unit Facility:
a building facility or other complex having multiple units including, but not limited to, apartment houses, retail store complexes (e.g., shopping malls), office buildings, condominiums, etc.

Owner:
a person or entity holding legal title to a multi-unit facility including any authorized agent of the owner.

Regular Bill:
a bill issued to a tenant for energy or utilities consumption on a periodic basis as specified in this regulation. A regular bill is based on determinations made through use of the energy or utilities allocation system in a multi-unit facility.

Substitute Bill:
a bill issued to a tenant in place of the tenant's regular bill and not based on regularly recurring measurements obtained by use of the energy or utilities allocation system. A substitute bill is issued only if the energy or utilities allocation system has been tampered with or is out of order and under the conditions specified in Section 02.04.

Tenant:
the occupant or occupants of a unit in a multi-unit facility who have entered into an agreement with the owner.

Utilities:
the amounts of gas, oil, thermal energy, electricity, water, or other resources consumed in the operation of a multi-unit facility.

Utility:
the regulated public service company which supplies energy or utilities to a multi-unit facility.

Vendor:
the entity which provides the energy or utilities allocation equipment and may also provide billing services for the owner to the tenants of a multi-unit facility.

01.03 Filing Requirements for Owners

A. An owner shall file an application with the Agency for approval of an energy or utilities allocation system.

B. The application shall include the following information:

1. name and address of the owner;
2. name and address of the general partner, if the owner is a partnership;
3. name and address of the Management Agent, if any;
4. name and address of the multi-unit facility;
5. the number of individual units;
6. a copy of all written information provided to an tenant including lease terms; and
7. a copy of the proposed billing format.

C. The owner shall also provide the approval number assigned to the energy or utilities allocation system by the Agency. If the energy or utilities allocation system has not been previously assigned an approval number by the Agency, the owner must also provide the information required in part 01.04.(B).

01.04. Filing Requirements for Vendors

A. If not previously filed by the owner, the vendor shall file an application for approval of a model of energy or utilities allocation equipment with the Agency.

B. The application shall include the following information:

1. a description of the energy or utilities allocation system, including a technical description of the energy or utilities allocation system
2. a description of the method for converting a measurement unit into approximate energy or utilities use in terms of a recognized unit of measurement as described in the definitions of this regulation;
3. a description of any formulas used to arrive at the measurement unit and at the final energy or utilities usage determination; and
4. a description of the method used for calculating the energy or utilities costs directly billed to a tenant, including the calculation of a per unit energy or utilities cost.

01. 05 Distribution of Application

A. The owner shall submit to the Agency an original and (number to be determined by regulating agency) copies of the application, and shall provide copies to all other agencies as designated by the Agency.

01. 06 Waiver of Regulations

The Agency may waive all or a portion of the requirements herein if unreasonable hardship results.

Chapter 02 Approval Required by the Commission

02.01 General Conditions for Approval

A. The Agency may approve an energy or utilities allocation system upon demonstration by the owner or vendor that the system complies with the prevailing guidelines, standards, and recommended practices for energy or utilities allocation systems as established by an organization recognized by the Agency [2] and results in a reasonable determination of the cost of the energy or utilities use attributable to an individual unit.

B. The Agency may require testing and inspection of the energy or utilities allocation system equipment.

C. The Agency may require testing and inspection of any furnace, appliance, or other equipment used in conjunction with the energy or utilities allocation system.

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[2] Organizations such as National Utilities Allocation Association (NUAA), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), and International District Heating and Cooling Association (IDHCA) are currently developing guidelines, standards, and recommended practices which may be referenced by the Agency.

D. If required under (B) or (C), testing shall be performed by the Agency or by another testing facility specifically approved by the Agency.

E. All major measuring elements of an energy or utilities allocation system must be permanently marked with a model designation and a unique identification number.

F. The owner or the vendor shall be notified in writing by the Agency of the acceptance or the rejection of an application within 30 [3] days of filing the application under Section 01.04. If the application is denied, the written grounds for disapproval and an explanation of the steps necessary to have the application approved will be provided with the statement of rejection.

G. If the Agency proposes to revoke a previous owner- or vendor-approval of energy or utilities allocation system, the Agency must provide within 10 days the written grounds for revocation, and an explanation of the steps necessary to have approval of the system reinstated.

H. Upon acceptance of a model of an energy or utilities allocation system, the Agency shall assign a unique approval number to that model of the vendor's energy or utilities allocation system.

02.02 Direct Billing of Energy or Utilities Costs

A. An owner using an energy or utilities allocation system shall directly bill a tenant only for the cost of the approximate energy or utilities usage attributable to an individual unit which shall consist of measured costs and distributed costs as determined through the use of energy or utilities allocation equipment.

B. An owner using an energy or utilities allocation system shall not directly bill a tenant for owner-paid costs.

C. Measured costs shall be determined by direct measurement separately accumulated for each individual unit.

D. Distributed Costs:

1. Domestic water, cooking fuel, water-heating fuel, and base usage attributable to an individual unit shall be cost allocated to the individual unit by an Agency-approved method. Industry accepted practices include allocation based on individual measurement, allocation on a per-occupant basis, and allocation on a square-footage basis

2. Administrative fees or charges may be allocated to each individual unit on a par basis such that each individual unit shares equally in such costs.

02.03 Regular Bill, Format

The owner shall include in each direct billing of energy or utilities costs to the tenant the following information:

A. billing date (the date the bill was prepared);
B. billing period (time period covered by the bill);
C. readings of the measurement device at the beginning and at the end of the billing period;
D. number of measurement units recorded by each measurement device;
E. approximate energy or utilities usage in terms of a recognized unit of measurement for each measurement device;
F. per unit energy or utilities charge for each measured cost category;

[3] Time periods referenced in this document may be changed at the discretion of the regulating agency.

G. distributed usage costs, identified as such, including administrative fees and charges;
H. total energy or utilities costs billed to the tenant;
I. a statement that the bill is not from the utility; and
J. a local or toll-free telephone number for inquiries or complaints about the billing or about the energy or utilities allocation system.

02.04 Alternative Bills

A. Substitute Bills

1. The owner may render substitute bills only if the energy or utilities allocation system has been tampered with or is out of order.

2. A substitute bill shall be distinctly marked as such.

3. The substitute bill shall be based on consumption for a similar billing period if available, or if not available, on a square footage basis.

4. The substitute bill shall include all information required in Section 02.03 for regular bills, with the exception of Sections 02.03 (C) and 02.03 (D).

5. Substitute bills may not be rendered for more than 3 billing periods or 90 days for the same cause unless specifically exempted by the Agency.

B. Estimated Bills

1. If the bill issued to the tenant is based on utility company estimated meter readings, the bill issued by the owner shall be distinctly marked as an estimated bill.

2. An estimated bill shall be reconciled in the billing period following the reconciliation of the utility company's estimated meter readings.

3. An estimated bill shall include all information required in Section 02.03 for regular bills.

C. Adjusted Bills

1. An adjusted bill shall be issued only when the validity of utility company meter readings is questionable or when the bill issued is based upon an adjusted bill from the utility company.

2. An adjusted bill shall be distinctly marked as an adjusted bill.

3. An adjusted bill shall be reconciled in the billing period following the reconciliation of the utility company's meter readings which are in question.

4. An adjusted bill shall contain all information required in Section 02.03 for regular bills.

5. Adjusted bills may not be rendered for more than 2 billing intervals or 60 days for the same cause unless specifically exempted by the Agency.

02.05 Rendering of Bills

A. The owner or his representative shall bill a tenant for energy or utilities costs within 20 days after the owner receives the master bill from the utility company.

B. The owner shall read the measurement devices within 5 working days of the stipulated billing period.

C. The owner shall forward to the billing agent, within 3 working days of taking readings, the monthly

information from the measurement devices.

D. An owner can not consider a bill for energy or utilities costs past due earlier than what is specified in the lease agreement.

02.06 Monitoring of Energy or Utilities Allocation System

A. The owner shall obtain monthly reports from the vendor which identify incidences of unusually high or low usage for individual units.

B. The owner shall investigate any unusually high or low usage and, if it is found that a problem exists or if a written complaint has been filed by the tenant, the owner shall provide a written explanation to the tenant within 20 days of receipt of the monthly report from the vendor.

C. The owner shall take appropriate action, within 10 days of delivering written explanation to the tenant, to correct the cause of the unusually high or low usage occurrence.

02.07 Records

A. Billing Records

1. The owner shall maintain the following records:

a) the bill from the utility company to the owner for each of the preceding 24 months;

b) the calculation of the property-wide average cost of energy or utilities for each particular type of unit for each of the preceding 24 months;

c) the readings of the measurement device in the individual unit of the tenant for each of the preceding 24 months ; and

d) the usage and billings for each individual unit for each of the preceding 24 months.

B. The owner shall maintain a record of all major measuring elements showing model designation, a unique identification number, and their locations.

C. The owner shall maintain a 24 month record of all written complaints received and copies of the inspection reports prepared under Section 03.05 of this regulation.

Chapter 03 Tenant Disclosures - Costs, Payments, and Complaint Procedures

03.01 General Requirement

A. An owner shall disclose in writing to a current or prospective tenant prior to the execution or modification of a lease or upon the installation of an energy or utilities allocation system:

1) that the energy or utilities allocation system:
   a) approximates the amount of energy or utilities consumed in the individual unit by use of an energy or utilities allocation or conversion formula; and
   b) might not measure the actual use of energy or utilities.
2) that the owner will directly bill the tenant for energy or utilities costs as determined by an energy or utilities allocation system;
3) that the billing period shall be monthly unless otherwise stipulated in this disclosure ;
4) how questions and complaints of a tenant concerning bills or about the energy or utilities allocation system will be answered by the owner, including a description of the procedures described in Section 03.05.

5) that, in the event of an unresolved inquiry or complaint concerning the energy or utilities allocation system, the tenant may contact the Consumer Protection Division of the Attorney General's Office, or an equivalent agency, to file a formal complaint.
6) that specific information regarding the operation of the energy or utilities allocation system usage and billing history are available.

B. Upon request, the owner shall disclose to a current or prospective tenant the estimated utilities cost reasonably expected to be incurred by the tenant calculated in a manner as described in Section 03.03.

C. The owner shall include language in the lease agreement which specifies all terms of payment for energy or utilities usage, including any terms for deposits, penalties for nonpayment or untimely payments, and penalties for tampering with the energy or utilities allocation system.

03.02 Disclosure of the Use of an Energy or Utilities Allocation System

A. The owner shall have available in writing for a current or prospective tenant all material aspects of the energy or utilities allocation system including, but not limited to:

1) the measurement unit or pertinent information recorded by the allocation system's device(s);

2) the method for converting measurement units or pertinent information into the approximate energy or utilities costs, including any formulas used to determine the number of measurement units and the final approximate energy or utilities use; and
3) the method for calculating the per unit charge for energy or utilities consumed.

03.03 Estimated Energy or Utilities Costs

A. An owner who has previously determined the approximate energy or utilities usage for an individual unit by use of an energy or utilities allocation system, including use of a system prior to the promulgation of the regulation, shall disclose upon request to a current or prospective tenant:

1) the highest monthly energy or utilities cost billed to the same individual unit in a month the individual unit was fully leased during the preceding 12 months;
2) the lowest monthly energy or utilities cost billed to the same individual unit in a month the individual unit was fully leased during the preceding 12 months, excluding $0.00 bills;
3) the average monthly energy or utilities cost billed to the same individual unit during the preceding 12 months including only months of full occupancy; and
4) the average monthly energy or utilities costs billed to similar-sized leased individual units in the preceding 12 months.

B. If the owner has not previously used an energy or utilities allocation system within the multi-unit facility:

1) the owner shall disclose estimated energy or utilities costs upon request in the following priority:

a) based on the actual billing to similar sized individual units in other multi-unit facilities within the same complex; or
b) based on the actual operating experience of the vendor for similar sized individual units in other multi-unit facility complexes of comparable age, size, equipment, and geographic location; or
c) based on a square footage allocation derived from energy or utilities bills received by the

owner from the utility company and, if necessary, seasonally adjusted.

2) the owner shall provide the estimated energy or utilities costs required in Chapter 03, Section 03.03.B(1) in terms of an average monthly bill, the highest monthly bill, and the lowest monthly bill.

03.04 Disclosures of Influences on Energy or Utilities Usage and Costs

A. The owner shall provide the current or prospective tenant with documentation available concerning energy or utilities conservation and information pertinent to the efficient use of the energy or utilities delivery system [4].

03.05 Procedure for Handling Tenant Complaints

In the event a tenant contacts the owner concerning the correctness of the energy or utilities costs billed to a tenant:

A. The owner shall inform the tenant how questions and complaints concerning bills or about the energy or utilities allocation system will be answered by the owner, including a description of the procedures described in Section 03.05.

B. The owner shall provide to the tenant an Agency- approved complaint form and request the tenant to complete the form.

C. The owner shall provide the tenant with the name and address of the manager of the multi-unit facility or other person who will receive the complaint form.

D. The owner shall provide the tenant with written confirmation from the vendor within 15 business days of receiving a written complaint from a tenant whether the bill does or does not contain a clerical, mathematical, or computational error.

E. If the bill in question does not contain an error described in Section (D), the owner shall inspect the energy or utilities allocation equipment and the individual unit of the tenant to verify that the energy or utilities allocation system is functioning properly. If the energy or utilities allocation system is found to be malfunctioning, the owner shall initiate corrective actions immediately and provide the tenant with written confirmation of the corrective action being taken as specified by Section (F).

F. The owner shall provide the tenant with a copy of the written results of the inspections conducted pursuant to the requirement in Section (E), prepared on Agency- approved forms within 30 days of the receipt of the complaint. If the bill in question contained a clerical, mathematical, or computational error, or an error resulting from a mechanical malfunction, then a corrected bill shall be issued within 10 days of issuing the written results of the inspection. If any remedial actions have been or will be taken, written notification of these actions shall be issued to the tenant within this same 10 day period.

G. In the event a tenant needs assistance in filing written inquiry or complaint, the owner shall provide that assistance within 5 working days of receiving the tenant's request for assistance.

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[4]The title and source of this document is to be identified by the regulating organization (e.g., the Agency). This document will provide the tenant or prospective tenant with information about influences on energy usage and costs. The document should also provide the tenant with information about energy conservation and measures that can be taken to conserve energy and lower heating/cooling costs. The exact title and content of this document may vary from State to State depending upon the decision of the Agency and the nature of energy usage in each State (e.g., influences of climatic conditions and building facilities vary with geographic location).

H. In the event the tenant and owner have followed the procedures for an inquiry or complaint as established in Section 03.05 (A-G) and the tenant wishes to pursue the inquiry or complaint further, he may contact the Consumer Protection Division of the Attorney General's Office, or an equivalent agency, as noted in Section 03.01(A)(5).

Chapter 04 Operating Requirements

04.01 Repairs

A. In the event an owner identifies a malfunctioning measurement device or other abnormal condition, the owner or his representative shall:

1. notify the billing agent, vendor, or other appropriate repair agent within 3 business days of such identification;
2. authorize repair of the malfunctioning equipment or the abnormal condition within 30 days of such identification;
3. provide access to and through such buildings and individual units as reasonably necessary to effect repairs after 24 hours advance access request from the billing agent, vendor, or other appropriate repair agent.

B. In the event the billing agent or vendor identifies a malfunctioning measurement device or other abnormal condition, the owner or his representative shall:

1. provide such on-site examination or evaluation of the malfunctioning measurement device or other abnormal condition as may be reasonably requested by the billing agent, vendor, or other appropriate repair agent within 5 business days of such request.
2. authorize repair of the malfunctioning equipment or abnormal condition within thirty days of such identification.
3. provide access to and through such buildings and/or individual units as reasonably necessary to affect repairs after 24 hours advance access request from the billing agent, vendor, or other appropriate repair agent.

C. In the event the owner or the billing agent identifies measurements which are the result of malfunctioning or tampering with the measurement devices or other constituents of the energy or utilities allocation system, all units affected by such tampering shall be issued a substitute bill consistent with the provisions of Section 02.04(A), Substitute Bills.

D. If the Agency finds that an owner is not operating, maintaining, or repairing an energy or utilities allocation system consistent with the specifications of the manufacturer of the energy or utilities allocation system and the provisions of this regulation, the Agency may revoke approval for the use of the energy or utilities allocation system in that installation. Revocation of approval of the energy or utilities allocation system shall be implemented consistent with the provisions of Section 02.01, General Conditions for Approval.

Final Report of the Laws and Regulations Committee

Kendrick J. Simila, Chairman
Administrator, Weights and Measures Division
State of Oregon

200 Introduction

This is the final report of the Laws and Regulations Committee for the 74th Annual Meeting of the National Conference on Weights and Measures (NCWM). This report is based on the Interim Report (NCWM Publication 16), the Addendum Sheets issued at the meeting, and the actions taken by the membership at the meeting.

Table A identifies items in the Report by Reference Key Number, item title, and page number. The first three digits of the Reference Key Numbers of the items in the Committee's report are assigned from the subject series listed below. Not all subject series will appear in the report. The digits after the hyphen are assigned at the time of assembly of the Interim Meeting agenda in the order of the appearance of the subject of the proposal in the handbooks. Several item numbers are therefore out of sequence with their appearance in the Final Report, because the Committee recommended revisions or additions to different sections or paragraphs from those originally proposed. In addition, several items have been divided into parts since their numbers were assigned; these are delineated with the letters "A," "B," and so on, after the number, for example "231-1A." The titles of voting items are in **bold face print**, with a "V" after the item number. At the Annual Meeting, the committee grouped the less controversial voting items into a consent calendar. These are marked with "VC." In the Report, the key text upon which a vote is to be taken is also highlighted by **bold face print.** Items marked with an "I" after the reference key number are information items. The items marked with a "W" were withdrawn by the Committee.

Much of the Report contains recommendations to revise or amend National Institute of Standards and Technology (NIST) Handbook 130, 1989 edition, "Uniform Laws and Regulations," or NIST Handbook 133, Third Edition, "Checking the Net Contents of Packaged Goods." Proposed revisions to handbooks are shown in bold face print by ~~crossing-out~~ what is to be deleted, and underlining what is to be added. Entirely new paragraphs proposed for handbooks are designated as such and shown in **bold face print.**

Subject Series

HANDBOOK 130 - General	210 Series
LAWS	220 Series
Uniform Weights and Measures Law (UWML)	221 Series
Uniform Weighmaster Law (UWL)	222 Series
Uniform Motor Fuel Inspection Law (UMFIL)	223 Series

Subject Series (Continued)

Table A
Reference Key Items and Index

Table A (Continued)

Table B
Appendices

Order of Presentation

The report was presented to the membership as follows:

1. The Consent Calendar was presented. Item 231-3 was requested to be taken out of the Consent Calendar and made a separate voting item. The Consent Calendar was then adopted.

2. The separate voting items were then presented.

3. The report in its entirety was then ratified.

Table C

Voting Results

Reference Key No.	House of State Representatives		House of Delegates		Results
	Yes	No	Yes	No	
Consent Calendar	47	0	59	0	Passed
221-3	47	0	63	0	Passed
222	47	0	59	0	Passed
232-4	47	0	61	1	Passed
240-3	46	0	62	0	Passed
231-3	46	1	54	7	Passed
Entire Report	47	0	70	0	Passed

Details of All Items

(In the Order They Appear in Table A)

221 Uniform Weights and Measures Law

221-1 VC 1.10. Net Weight

(This item was adopted as part of the consent calendar.)

Last year, the NCWM adopted a definition for net weight in the Uniform Weights and Measures Law. The term "net weight" is defined as the weight of a commodity or collection of commodities. Section 10.5. of the Uniform Packaging and Labeling Regulation, requires that labels on combination packages declare a quantity declaration for each unit. It has been argued that the term "collection of commodities" may conflict with the packaging and labeling requirements since it may be interpreted as not requiring individual net weight declarations on several separate commodities not forming a distinctive food product put up in the same package. See Items 232-3, 232-4, and 232-5 for related information. The Committee is of the opinion that nothing in the definition is lost if the phrase "or collection of commodities" is deleted. The recommended revision is:

1.10. **Net Weight. -- The term "net weight" means the weight of a commodity, ~~or collection of commodities,~~ excluding any materials, substances, or items not considered to be part of the commodity. Materials, substances, or items not considered to be part of the commodity include, but are not limited to, containers, conveyances, bags, wrappers, packaging materials, labels, individual piece coverings, decorative accompaniments, and coupons.**

221-2 VC 17. Method of Sale

(This item was adopted as part of the consent calendar.)

The Committee was asked if Section 6.4. of the UPLR could be interpreted as conflicting with Section 17. of the UWML. Section 6.4. of the Uniform Packaging and Labeling Regulation, which applies to packaged goods only, restricts the net contents labeling of commodities as follows:

6.4. Terms: Weight, Liquid Measure, Dry Measure, or Count.-- The declaration of the quantity of a particular commodity shall be expressed in terms of liquid measure if the commodity is liquid, or dry measure if the commodity is dry, or in terms of weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid, or in terms of numerical count. However, if there exists a firmly established general consumer usage and trade custom with respect to the terms used in expressing a declaration of quantity of a particular commodity, such a declaration of quantity may be expressed in its traditional terms, if such traditional declaration gives accurate and adequate information as to the quantity of the commodity.

Section 6.4. is a subset of the permitted methods of sale in Section 17. of the Uniform Weights and Measures Law, which permits much broader use of measurement units in methods of sale.

In Section 17. of the UWML, there is no prohibition against any method of sale so long as it is accurate. Section 6.4. of the UPLR requires that the terms used be "..accurate and adequate...as to the quantity of the commodity."

The Committee is of the opinion that any method of sale should permit the buyer to make price and quantity comparisons. The Committee does not believe there is any conflict when Section 17. would permit all the types of measurement terms referenced in Section 6.4. The Committee therefore believes it is necessary to update Section 17. of the Law to limit methods of sale to those that permit the purchaser to make price and quantity comparisons. The proposed revision to Section 17 is:

Except as otherwise provided by the director, or by firmly established trade custom and practice:

(a) **commodities in liquid form shall be sold by liquid measure or by weight, and**

(b) **commodities not in liquid form shall be sold ~~only~~ by weight, ~~or~~ by measure, or by count.**

~~so long as t~~The method of sale shall provides accurate and adequate quantity information that permits the buyer to make price and quantity comparisons.

221-3 V Section 22. Offenses and Penalties

(This item was adopted.)

The Task Force on Prevention of Fraud concluded that the penalties for weights and measures offenses were not severe enough to deter fraud; the potential gains from fraudulent activity often far exceed the likely penalties if caught.

The Committee has been concerned about the same issue and had been discussing the need and value of changes to the Uniform Law providing for (1) administrative hearings in lieu of criminal court proceedings, and (2) civil penalties in addition to criminal penalties. As a result of the work of the Task Force on the Prevention Fraud, the Committee discussed a third change, that is classifying certain weights and measures violations as felonies rather than misdemeanors.

Administrative Hearings in Lieu of Criminal Court Proceedings

There are several advantages in removing the weights and measures violations from the criminal court.

1. The burden of proof in the criminal court is "beyond a reasonable doubt; in civil court hearings, the burden of proof is usually "a preponderance of evidence"; in administrative hearings, the burden of proof may be "substantial evidence".

2. Respondents in a civil proceedings will more likely agree to a proposed settlement that has no criminal record implications.

3. An administrative hearing is a relative speedy and efficient procedure, primarily because it eliminates the "discovery" process of criminal and civil procedures. An administrative hearing can often be set within 10 to 14 days after a violation occurs; setting a trial date in civil or criminal court may take more than a year.

The date of a hearing is usually set by mailing a hearing notice that identifies the basic charges and offers the accused the opportunity to provide a defense with or without legal counsel. The administrative hearing officer or law judge issues a ruling based on the evidence produced. Any ruling is subject to review by the Director, Commissioner, Secretary, or similar senior official and is reviewable on appeal to a civil court.

Civil Penalties in Addition to Criminal Penalties

In addition to the relative efficiency of civil litigation, resultant civil penalties are more easily assessed than criminal penalties. Following the commencement of civil litigation (starting a lawsuit by serving a summons and complaint), a civil court is asked to assess a monetary penalty. The court may also be asked to serve an injunction to cease and desist from a specific act or practice. Imprisonment cannot be imposed for past violations; however, monetary fines can be ordered by the court and can be increased in recognition of past violations.

The Committee realizes that some states may not have the authority to administer a range of monetary penalties. It may then be necessary to define a fixed monetary penalty for the first infraction or less severe infraction, and a higher monetary penalty for repeat offenses or more serious infractions (e.g., Illinois Revised Weights and Measures Statute, Chapter 147, paragraph 101 et. seq.). Some states (e.g., Colorado) have adopted regulations that prescribe the specific dollar amount of their civil penalties based on severity, number of offenses, etc.

Felonies in addition to Misdemeanors

Reclassifying certain intentional fraudulent criminal activities (or repetition of misdemeanors) as felonies provides the potential for heavier assessments and would probably be expected to inhibit significant acts of fraud.

Committee Recommendation

The Committee proposes to split Section 22 into three sections: Section 22 (defining prohibited acts), Section 23) (civil penalties), and Section 24 (Criminal Penalties). Additionally, The Committee proposes to revise current Section 23 and renumber it Section 25. Former Sections 24 through 28 will be renumbered.

Section 22. Prohibited Acts

No person shall:

(a) use or have in possession for use in commerce any incorrect weight or measure;

(b) sell or offer for sale for use in commerce any incorrect weight or measure;

(c) remove any tag, seal, or mark from any weight or measure without specific written authorization from the proper authority;

(d) hinder or obstruct any weights and measures official in the performance of his or her duties; or

(e) violate any provisions of this Act or regulations promulgated under it.

Section 23. Civil Penalties

Any person who by himself or herself, by his or her servant or agent, or as the servant or agent of another person commits any of the acts enumerated in Section 22 may be subject to a civil penalty.

23.1. Civil Action: A civil action may be brought by the director in any court of competent jurisdiction to recover a civil penalty of

(a) not less than $_____ nor more than $_____ for a first violation,

(b) not less than $_____ nor more than $_____ for a second violation within two years from the date of the first violation, and

(c) not less than $_____ nor more than $_____ for a third violation within two years from the date of the first violation.

23.2 Administrative Hearing: The director or his/her designee shall be authorized to conduct an administrative hearing and, upon notice and an opportunity to be heard, may assess a civil penalty of

(a) not less than $_____ nor more than $_____ for a first violation,

(b) not less than $_____ nor more than $_____ for a second violation within two years from the date of the first violation, and

(c) not less than $_____ nor more than $_____ for a third violation within two years from the date of the first violation

upon the finding of a violation of any provision of this Act.

The decision of the director shall be subject to appropriate judicial review.

Any civil penalty collected under this Act shall be transmitted to the state treasurer, who shall credit the same to the _____ fund.

Section 24. Criminal Penalties

24.1. Misdemeanors: Any person who commits any of the acts enumerated in Section 22 shall be guilty of a class_____misdemeanor, and upon a first conviction thereof shall be punished by a fine of not less than $_____ nor more than $_____ or by imprisonment for not more than _____ months, or both. Upon a subsequent conviction

thereof, he or she shall be punished by a fine of not less than $_____ nor more than $_____ or by imprisonment for up to _____months, or by fine and imprisonment both.

24.2. Felony: Any person who

(a) intentionally violates any provisions of this Act or regulations under it;

(b) is convicted under the misdemeanor provisions of Section 24(a) more than three times in a 2-year period;

(c) removes or counterfeits the departmental seal; or

(d) uses or has in his or her possession a device which has been altered to facilitate fraud,

shall be guilty of a class _____ felony, and upon a first offense, shall be punished by a fine of not less than $___ or by imprisonment for not more than _____, or by fine and imprisonment both_____.

Section 25. Restraining Order and Injunction

The director is authorized to apply to any court of competent jurisdiction for a restraining order, or a temporary or permanent injunction, restraining any person from violating any provision of this Act.

222 V Uniform Weighmaster Law

(This item was adopted.)

(This carry-over item was Item 222 in the Report of the 73rd NCWM 1988.) Please see the Report of the 73rd National Conference on Weights and Measures 1988, page 149, for the most recent information, or contact the Office of Weights and Measures for a copy of this report.

The recommended revision of the Uniform Weighmaster Law appears in Appendix A, beginning on page 2-42.

The most significant changes proposed in the revised Law are:

1. The definition of "public weighmaster" has been broadened to cover additional measurements performed for hire.

2. Civil penalties and administrative hearings have been introduced instead of classifying all offenses as criminal offenses (as in the 1965 version).

3. Felony as well as misdemeanor classifications have been added to the criminal penalties section.

4. Outdated and nonessential requirements have been removed, such as a fixed rigid date for license expiration, the use of a notary-type of seal, the taking of an oath, the requirements for U.S. citizenship, and the minimum age of 21 years.

5. Statements of purpose and scope have been added.

6. Greater specificity concerning the information required on the certificate has been added.

7. All equipment used must meet Handbook 44 requirements.

8. Sections on offenses and penalties have been revised and reorganized.

9. A new section on prohibited acts has been added.

10. A general requirement empowering the state director to establish the manner in which tare is to be taken has been added. (Some survey respondents recommended that tare be determined in every weighing operation. Several examples were given to indicate that requiring tare in every operation may not be appropriate. As one example, holding truck tare weights in computer memory for short time periods at landfill operations was judged appropriate by some weights and measures officials.)

11. The requirement for annual testing of scales by weights and measures officials (formerly Section 12) has been deleted.

Uniform Packaging and Labeling Regulation

231-1A VC Preamble

(This item was adopted as part of the consent calendar.)

The Uniform Packaging and Labeling Regulation was originally written and promulgated to provide price and quantity information in a standardized format for use by the purchaser. It was revised to conform to the provisions of the Federal Fair Packaging and Labeling Act (FPLA). However, the UPLR covers a broader spectrum of packaged goods than does the FPLA. State weights and measures agencies are asked to provide guidance to packagers as to appropriate units for package net contents declarations. It is often difficult to explain to them why the provisions in the Uniform Packaging and Labeling Regulation must be followed when the UPLR has no specific reference to its purpose and guiding principle. It is recommended that a preamble be added to the Uniform Packaging and Labeling Regulation taken from the Federal Fair Packaging and Labeling Act.

Preamble

The purpose of this regulation is to provide accurate and adequate information on packages as to the identity and quantity of contents so that purchasers can make price and quantity comparisons.

231-2 I 2.1. Commodity in Package Form

(This is an information item and was adopted when the report as a whole was ratified.)

A new training module, Module 22, is being developed on Handbook 130. The Education Committee has asked the L&R Committee to provide an interpretation of the definition for "commodity in package form." The definition reads as follows:

2.1. Commodity in Package Form. -- A commodity put up or packaged in any manner in advance of sale in units suitable for either wholesale or retail sale. An individual item or lot of any commodity not in package form as defined in this section, but on which there is marked a selling price based on an established price per unit of weight or of measure, shall be considered a commodity in package form. Where the term "package" is used in this regulation, it shall mean "commodity in package form" as here defined.

The Committee makes the following observations and interpretations.

- "Put up...in units..." means "premeasured." A premeasured amount of goods constitutes a commodity in package form whether or not contained in a package.

- Items "on which there is marked a selling price based on an established price per unit of weight or of measure" applies to items that are priced by unit of weight or volume or area, but not packaged or bundled in any manner. Items for sale by count would ordinarily have to be bundled, wrapped, or

packaged.

A commodity in package form can be assessed in the following ways:

1. Whether or not wrapped, has the commodity been measured before sale?

2. Is the quantity of commodity intended to be increased or decreased?

Commodities weighed or measured at the time of sale can generally be considered sales from bulk; however, if they are wrapped or packaged in any way, they may be "commodities in package form" and therefore subject to the rules set out in the UPLR. The UPLR in Section 1. APPLICATION spells out those types of wrappings to which the packaging and labeling regulation does not apply; this includes open carriers or transparent wrappers with no written or graphic matter on them, retail "tray pack displays," outer wrappings with no printing pertaining to any particular commodity, shipping containers used solely for transportation, and inner wrappings not intended to be individually sold. Even if an item comes under the definition of a commodity in package form, it may not be required to meet all labeling requirements. For example, most fresh fruits and vegetables, even though wrapped in clear packaging showing graphic matter, are exempted from: (1) identity requirements if they "can easily be identified through the wrapper or container" (Section 19 of the Uniform Weights and Measures Law); (2) net contents requirements if they are weighed or measured "at the point of retail sale" (Subsection 11.28. of the Uniform Packaging and Labeling Regulation); and (3) statement of responsibility requirements if they are packaged on the premises where sold (Section 5 of the Uniform Packaging and Labeling Regulation).

Even if the item is not wrapped, but has been premeasured, the commodity can be considered to be in package form. For example, firewood stacked in 1/10 cord amounts has been "put up" in advance of sale. Using the two guidelines listed above, a hammer stamped with the price does not constitute a commodity in package form even though one might say that it has an established price per each (per count) on it. Section 2.1. is not intended to be applied to items which are not premeasured by weight, measure, or count prior to sale. However, it applies to trimmer line sold by 10-foot lengths and sold loose from a box, with a price per 10 foot length on a sign above the box. (The sign constitutes the label.) It applies to six coat hooks wrapped with a rubber band. It applies to fresh fruits or vegetables, such as bananas or watermelons marked with various prices directly on the fruit, because they are priced per pound. These latter items are random packages and, if marked only with a selling price, do not meet the minimum requirements for labeling a random package, which must show net weight, unit price, and total price.

Another example of a commodity in package form, rather than one sold from bulk, is a bunch of grapes sold loose or in a mesh bag with no printed or graphic matter on it. If the bag is open so that the purchaser can remove product, the sign above the grapes reads $.69/lb, and the grapes are weighed at the checkout stand (deducting for the weight of the mesh bag as tare), then the grapes are exempt from labeling a net contents declaration. If a price is marked on each bag, for example, $.69, then the grapes are a commodity in package form and must either meet the labeling requirements for standard pack commodities (type size, location, net weight, free space, dual declaration, etc.) or have a random package label on each bag. Note that the Uniform Packaging and Labeling Regulation permits the label to be adjacent to the package (i.e., a sign) rather than on the package.

231-4 I 2.8. Multi-Unit Package

(This is an information item and was adopted when the report as a whole was ratified.)

It was recommended that the definition in Section 2.8. MULTI-UNIT PACKAGE be changed to delete that part of the definition that narrowed multi-unit packages to only those for which the component packages are labeled in full compliance with all requirements of the regulation. The argument in favor of this change is that requiring a multi-unit declaration only when the components are fully labeled is a loophole that should be closed. That is, if the individual units inside a package are not labeled in full compliance with all packaging and labeling requirements, then a package containing a number of such units would not have to declare the number of units and their individual net weights as required by Section 10.4.; such package would only have to declare the total net weight. The example given of packages to which the multi-unit definition should apply was Halloween candy.

These packages are composed of separately wrapped candy bars, which the consumer buys on the basis of count as well as total net weight. Because each individual bar is not fully labeled, no company provides the count and net weight of each bar (although a few companies give supplemental information on the back of the package concerning the approximate count per package.) It is argued, however, that such packages should be required to be labeled by the number of individual bars, the net weight of each bar, and the total net weight.

The Committee is sympathetic to the request. However, the current definition of multi-unit package in paragraph 2.8. of the Uniform Packaging and Labeling Regulation tracks the definitions in the Code of Federal Regulations for both food (21 CFR 101.105 (s)) and non-food consumer (16 CFR 500.24 (a)) packages. Only when the units inside the package are in full compliance with labeling requirements and could be sold individually must a multi-unit package declare count, individual package quantity, and total quantity.

The Committee believes that it could be argued that the count and quantity of each unit is necessary for the specific example of Halloween candy under Section 6.4.1. COMBINATION DECLARATION, paragraph (a) which reads:

> A declaration of quantity in terms of weight shall be combined with appropriate declarations of the measure, count, and size of the individual units unless a declaration of weight alone is fully informative.

The Committee members believe that weight alone is not fully informative. Therefore, the Committee will request the Liaison Committee to petition the FDA to require count on specialty items, such as Halloween candies, that are purchased as much by count as by total weight. The Committee will also contact the Chocolate Manufacturers Association and the Confectioners Association to determine if voluntary supplemental information can be provided on the package that would meet the needs of the purchaser.

231-5B VC 2.9. Combination Package; 2.10. Variety Package

(This item was adopted as part of the consent calendar.)

Section 2.8. defines MULTI-UNIT PACKAGE separately from the requirements and exemptions that apply to them. Definitions for COMBINATION PACKAGE and VARIETY PACKAGE need to be added to the Uniform Packaging and Labeling Regulation (UPLR) separate from the sections that set out requirements; exemptions for these types of packages have no definitions to which to refer. It is recommended that the definitions in the Code of Federal Regulations under the Federal Trade Commission (FTC) (see 16 CFR 500.25 and 500.26), together with appropriate examples from Subsections 10.5 and 10.6 of the UPLR, be added as paragraphs 2.9. and 2.10. in the UPLR and paragraph 2.9. PETROLEUM PRODUCTS be renumbered 2.11. (There are no definitions for variety and combination packages in the regulations for food packages under the jurisdiction of the Food and Drug Administration.) The recommended additions are:

> **2.9. Combination Package. -- A package intended for retail sale, containing two or more individual packages or units of dissimilar commodities. (Examples: an antiquing or housecleaning kit; sponge and cleaner; seasonal gift package of wine and cheese; lighter fluid and flints.)**
>
> **2.10. Variety Package. -- A package intended for retail sale, containing two or more individual packages or units of similar but not identical commodities. Commodities that are generically the same, but that differ in weight, measure, volume, appearance, or quality, are considered similar but not identical. (Examples: 2 sponges of different sizes; plastic tableware, consisting of 4 spoons, 4 knives, and 4 forks; seasonal gift packages of different varieties of cheeses; and packages of mixed types of cold cereal.)**

See Items 231-5C and 231-5D for related changes to Subsections 10.5, 10.6, and 11.19.

231-1B VC 6.4. Terms: Weight, Liquid Measure, Dry Measure, or Count

(This item was adopted as part of the consent calendar.)

See the discussion in Item 231-1A. The UPLR was written to provide requirements for standardized quantity information so that the purchaser can make price and quantity comparisons. The regulation tracks the Federal Fair Packaging and Labeling Act (FPLA). State and local weights and measures agencies are often asked to advise on appropriate units to use in declaring the net contents on a package. Section 6.4. TERMS: WEIGHT, LIQUID MEASURE, DRY MEASURE, OR COUNT is too vague to specify terms for packages that will allow price and quantity comparisons. For example, Section 6.4. permits dry measure if the commodity is dry, or weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid. Many products are both "dry" and "solid," such as sand, garden potting mixtures, etc., so they can be labeled either by weight or by dry measure. This leads to differing units on packages of competing commodities and purchasers not given enough information to make price and quantity comparisons. Section 6.4. permits, but does not require, the use of other terms "if there exists a firmly established general consumer usage and trade custom" and "if such traditional declaration gives accurate and adequate information as to the quantity of the commodity." However, both FDA and FTC require the declaration that has been firmly established by trade custom and consumer use in order to permit purchasers to make price and quantity comparisons (see Item 232-7). Also, additional clarification of what is intended by the term "adequate" in Section 6.4. is needed; therefore, the Committee recommends the addition of a sentence to the definition as follows:

> 6.4. **Terms: Weight, Liquid Measure, Dry Measure, or Count. -- The declaration of the quantity of a particular commodity shall be expressed in terms of liquid measure if the commodity is liquid, or dry measure if the commodity is dry, or in terms of weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid, or in terms of numerical count. However, if there exists a firmly established general consumer usage and trade custom with respect to the terms used in expressing a declaration of quantity of a particular commodity, such a declaration of quantity may be expressed in its traditional terms, if such traditional declaration gives accurate and adequate information as to the quantity of the commodity. Any net contents statement that does not permit price and quantity comparisons is forbidden.**

231-5C I 10.5. Combination Packages; 10.6. Variety Packages

(This is an information item and was adopted when the report as a whole was ratified.)

As a result of studying the provisions in the UPLR for combination and variety packages (see Items 221-1, 231-5A, and 231-5B), the Committee believes the requirements in the UPLR need modification so that they track the requirements that implement the FPLA in the FTC regulations. FTC requirements are essentially the same for variety and combination packages, that is,

- a variety package must declare the number of units of each identical commodity, a total net contents for each identical commodity, and then the total quantity for the variety package;

- a combination package must also declare the number of units of each identical commodity and the total net contents for each commodity. (The total net contents statement for the package is the listing of the individual commodities in the package.)

These requirements conflict with the UPLR. Subsection 10.5. COMBINATION PACKAGES requires a quantity declaration for each unit; however, Subsection 10.6. VARIETY PACKAGES requires only a total quantity declaration. Because the requirements as presently written in the UPLR are different for combination and variety packages, it is necessary to categorize what type of package is being labeled. Therefore, in the example given at the end of paragraph 10.6. in the UPLR for plastic tableware, the total of each identical commodity, (for example, the number of spoons) must be declared following the requirements under FTC; Subsection 10.6. VARIETY PACKAGES as currently written requires only a total quantity (i.e., total pieces of tableware) declaration. There are additional requirements in the Federal regulations under the FTC that the UPLR should

track (16 CFR 500.25 and 500.26). (There are no references or definitions for combination or variety packages in those regulations under the FDA.) The Committee planned to recommend replacing Section 10.5. and 10.6. with the following:

10.5. Combination Packages. -- The declaration of net quantity shall contain an expression of weight, volume, measure, or count or a combination thereof, as appropriate for each individual package or unit, but the quantity statements for identical packages or units shall be combined.

Dual declarations shall be included where applicable.

Examples:

(i) Lighter fluid and flints: "2 cans -- each 8 fl oz; 1 package -- 8 flints."

(ii) Sponges and cleaner: "2 sponges each 4 in x 6 in x 1 in; 1 box cleaner - Net Wt 6 oz."

(iii) Picnic Pack: "20 spoons, 10 knives, and 10 forks; 10 2-ply napkins 10 in x 10 in; 10 cups -- 6 fl oz."

10.6. Variety Packages.-- The declaration of net quantity for a variety package shall be expressed as follows:

(a) the number of units for each identical commodity followed by the weight, volume, or measure of that commodity including dual declarations when applicable; and

(b) the total quantity by weight, volume, measure, and count, as appropriate, of the variety package.

Dual declarations may be omitted from the total quantity statement.
The statement of total quantity shall appear as the last item in the declaration of net quantity and shall not be of greater prominence than other terms used.

Examples:

(i)
2 sponges 4-1/2 in x 4 in x 3/4 in
1 sponge 4-1/2 in x 8 in x 3/4 in
4 sponges 2-1/4 in x 4 in x 1/2 in
Total 7 sponges

(ii)
2 soap bars Net Wt 3.2 oz each
1 soap bar Net Wt 5.0 oz
Total 3 bars Net Wt 11.4 oz

(iii) Liquid Shoe Polish:
1 brown 3 fl oz
1 black 3 fl oz
1 white 5 fl oz
Total 11 fl oz

(iv) Picnic Ware:
34 spoons
33 forks
33 knives
Total 100 pieces

Comments on the above recommendation were received on the need to clarify the proposed language, that there could be misinterpretations on the required quantity statements as proposed. In addition, further study is

needed to determine the full impact of the recommended changes on food products. Therefore, the Committee recommends carrying this item over.

See also Item 231-5D.

231-5A VC 10.9.4. Exemption: Variety Textile Packages

(This item was adopted as part of the consent calendar.)

In the course of developing Training Module 22 on Handbook 130, the contractor has noted that Section 10.9.4. of the Uniform Packaging and Labeling Regulation is entitled "Exemption: Variety Textile Packages," but requires a combination package declaration (See Section 10.5.) for the quantity of each individual unit. It therefore, appears that this section should be revised and retitled. It should also be moved from Section 10. REQUIREMENTS: SPECIFIC CONSUMER COMMODITIES, NONCONSUMER COMMODITIES, PACKAGES, CONTAINERS to Section 11. EXEMPTIONS.

~~10.9.4.~~ 11.31. **~~EXEMPTION: VARIETY~~ TEXTILE PACKAGES.-- ~~Variety p~~ Packages of textiles that are required by ~~reason of~~ subsection 6.4.1. to provide a combination declaration stating the quantity of each individual unit and the count shall be exempt from the requirements in this regulation for:**

(a) location (see subsection 8.1.1.),

(b) free area (see subsection 8.1.4.), and

(c) minimum height of numbers and letters (see subsection 8.2.1.)

240-3 V 10.13. Polyethylene: Variations from Declared Weight

(This item was adopted.)

This carryover item was Item 240-4B in the Report of the 73rd NCWM, 1988 (page 175). An MAV of 7% for thickness is permitted for a single package (this is an average of several measurements). Thickness can be translated directly into weight by a formula adopted by the Conference. (See Item 230-3, Report of the 72nd NCWM 1987, p. 142.) However, the MAV for weight is much less than 7% (for example, the MAV for 11 lb is 0.22 lb, or 2%). Some industry members have asked whether the MAV's for thickness and for weight of polyethylene can be made consistent.

The State of Florida supplied the Committee with its package checking reports from four inspectors from July 1, 1988 to July 1, 1989. These reported contained the results of all tests conducted on this commodity, not just failed lots. Of 133 lots tested, only 87 averaged at or above the declared net weight, compliance level of only 65.4%. Of the 87 lots that met the average requirement, 14 (or 16%) would have failed to meet the individual package requirement if the MAV were set at 4% of the labeled weight. Seven (or 8%) would have failed if the MAV were set at 5% of the labeled weight. Five lots (or 6% of the 87 lots that met the average) would have failed if the MAV were set at 7% of the labeled weight.

Two years ago, the Committee was supplied data from one polyethylene manufacturer that was cited as proof that 7% was too loose. In this instance 262 lots were checked by the manufacturer as the product came off the packaging line. Only 166 (or 63%) of the lots had average net weights that equalled or exceeded the labeled net weight. Of the 166 lots that met the average requirement, 27 (or 16%) would have failed the requirements if the MAV were set at 4% of the labeled net weight. 21 (or 13%) would have failed if the MAV were 5% of the labeled weight, and 10 (or 6%) would have failed if the MAV were 7% of the labeled weight. Since there is overwhelming support for an MAV of 4%, and since the level of compliance will not drop precipitously if the MAV is changed to 4% (from 63% to 53% for the data supplied by one manufacturer and from 65% to 55% for the data supplied by Florida), the Committee recommends an MAV for the weight of polyethylene products of 4%. In addition, since the thickness is directly related to the weight, the Committee also recommends that

the MAV for thickness be changed to 4% of the labeled thickness. Finally, the Committee recommends inserting the minimum density of polyethylene of 0.92 g/cm^3 to be used to calculate the net weight (adopted by the Conference for Handbook 133) into the Uniform Regulation for the Method of Sale of Commodities. Revise Section 10.12.(b) as follows.

10.12. (b) Average thickness for a single package:

The average thickness of a single package of polyethylene sheeting, film, or bags may be as much as ~~7~~ 4 percent below the labeled thickness (i.e., at least ~~93~~ 96% of the labeled thickness).

Add Section 10.13.:

10.13. Polyethylene Products: Variations from Declared Weight[1] -- An individual package minus variation greater than 4 percent of the declared weight shall be considered unreasonable.

[1]In Addition, the net contents of lots, shipments, or deliveries must equal or exceed the labeled net contents. See Section 12.1.

Add to the end of Section 2.12.4. of the Uniform Regulation for the Method of Sale of Commodities as follows:

For the purpose of this regulation, the minimum density shall be 0.92 g/cm^3.

In addition, the Committee recommends that references to UPLR subparagraphs 10.12 and 10.13 be added to Section 2.13. EXCEPTIONS TO THE MAV'S and Table 2-8 MAV'S FOR AN INDIVIDUAL PACKAGE LABELED BY WEIGHT as a footnote in Handbook 133. (Section 2.13.1 quotes subparagraph 10.12, but the reference to the UPLR was inadvertently left out.)

231-3 VC 11.2. Random Packages

(This item was adopted as part of the consent calendar.)

When prepackaging fresh fruits and vegetables in retail stores, random-package label printers have been used to indicate count, rather than weight. Section 11.2 exempts random package labels from type size, dual declaration, placement, and free area requirements; however, random packages are defined as packages with no fixed pattern of weight, not count. A proposal was made to broaden the definition of random packages to include other measures. The Federal Fair Packaging and Labeling Act, as well as the regulations promulgated under it, define random packages only as those that have varying weights.

However, Section 11.2 exempts uniform weight packages of cheese and cheese products from the type size, dual declaration, placement, and free area requirements as long as such packages are labeled in the same manner and by the same type of equipment as random packages. The Committee recommends adding fresh fruits and vegetables suitable for sale by count to this section. The recommended revision is as follows:

11.2. Random Packages. -- A random package bearing a label conspicuously declaring:

(a) the net weight,

(b) the price per kilogram or pound, and

(c) the total price

shall be exempt from the type size, dual declaration, placement, and free area requirements of this regulation. In the case of a random package packed at one place for subsequent sale at another, neither the price per unit of weight nor the total selling price need appear on the package, provided the package label includes both such prices at the time it is offered or exposed for sale at retail.

This exemption shall also apply to uniform weight packages of cheese and cheese products labeled in the same manner and by the same type of equipment as random packages exempted by this section.

This exemption shall also apply to packages of fresh fruit or vegetables labeled by count in the same manner and by the same type of equipment as random packages exempted by this section.

Weights and measures officials should note that the Conference adopted guidelines for appropriate methods of sale for fresh fruits and vegetables. (See NCWM Publication 3, "Policy, Interpretations, and Guidelines" 2.3.2. Fresh Fruits and Vegetables.) According to the guideline, the following commodities are suitable for sale by count: apples, artichokes, avocados, whole cantaloupes, celery, coconuts, corn on the cob, cucumbers, eggplant, garlic, grapefruit, lemons, lettuce, limes, mangoes, whole melons, nectarines, oranges, papaya, peaches, pears, peppers, persimmons, pineapples, pomegranates, pumpkins, and tangerines.

231-5D VC 11.19. Combination Packages

(This item was adopted as part of the consent calendar.)

In order to track Federal requirements for variety and combination packages, this exemption from location, free area, and minimum height of numbers and letters should apply not only to combination, but also to variety packages (see 16 CFR 500.6). The recommended revision is:

11.19. Combination and Variety Packages. -- Combination and variety packages are exempt from the requirements in this regulation for

(a) location (see subsection 8.1.1.),

(b) free area (see subsection 8.1.4.), and

(c) minimum height of numbers and letters (see subsection 8.2.1.).

231-6 I 11.23. Camera Film

(This is an information item and was adopted when the report as a whole was ratified.)

The Western Weights and Measures Association recommended that Section 11.23 of the Uniform Packaging and Labeling Regulation be broadened to provide for new products in the film industry beyond "camera film," "movie film" and "bulk still film." The recommendation was to add language to cover audio tapes, video film, and magnetic film. After consultation with members of the American National Standards Institute Image Board, the following revision to Section 11.23. is proposed. Because of the lack of time for the membership to study the extensive revisions and for the industry to comment, the Committee will carry this item over until next year. Regional Associations are encouraged to comment.

11.23. Camera Film, Video Recording Tape, Audio Recording Tape and Other Image and Audio Recording Media Intended for Retail Sale and Consumer Use.

Imaging and audio media ~~Camera film~~ packaged and labeled for retail sale is exempt from the net quantity statement requirements of this regulation that specify how measurement of commodities should be expressed; Provided that:

(a) Unexposed or Unrecorded Media. -- The net quantity of contents of unexposed or unrecorded image and audio media ~~on packages of movie film and bulk still film~~ is expressed ~~in terms of~~

(1) for still film, tape, or other still image media, in terms of the usable or guaranteed number of available still image exposures. The length and width measurements of the individual exposures expressed in millimeters or inches, are authorized as an optional statement. (Example, "36 exposures, 36 millimeters x 24 millimeters" or "12 exposures, 2-1/4 inches x 2-1/4 inches.")

(2) For bulk or movie film, in terms of length (in meters or feet) of film available for exposure, and

(3) For all other image and/or audio media, in terms of length of time of electronic media available for recording, together with recording and/or playing speed or other machine settings as necessary. Supplemental information concerning the length of the media may be provided.

Supplemental information may be provided on other than the principal display panel. ~~number of linear meters or feet of usable film contained therein.~~

Note: Size, length of media, and format details to ensure interchangeability and other characteristics of audio and imaging media are available in the applicable American National Standards.

(b) Exposed, Recorded, or Processed Media. -- The net quantity of contents of exposed or processed film or prerecorded electronic media shall be ~~on packages of movie film is~~ expressed in terms of the length of ~~running~~ time that is of entertainment value. ~~of the exposed film for that portion of film that is of entertainment value.~~

"Entertainment value" is defined as that portion of a film, tape, or other media, that commences with the first frame of sound or picture, whichever comes first after the countdown sequence (if any), and ends with either: (a) the last frame of credits; or (b) the last frame of the phrase "The End," or (c) the end of sound, whichever is last.

~~(c) The net quantity of contents on packages of still film is expressed in terms of the number of exposures the contents will provide. The length and width measurements of the individual exposures, expressed in millimeters or inches, are authorized as an optional statement. (Example: "36 exposures, 36 millimeters x 24 millimeters" or "12 exposures, 2-1/4 inches x 2-1/4 inches")~~

231-7 I 11.28. Commodities' Variable Weights and Sizes

(This is an information item and was adopted when the report as a whole was ratified.)

The Southern Weights and Measures Association recommended that all wholesale packers be required to print the tare weight of random packages on their shipping containers, whether the random packages are weighed by the wholesaler or weighed and marked by the retailer (for example, hams or poultry). It is argued that field inspectors are required to destroy packages to determine the actual tare weight for products packaged at locations other than the retail store where tested. It is also contended that store and market personnel are often unaware of actual tare weights for packages and will often guess at a tare weight rather than destroy a package.

Labeling the tare weight of random packages of poultry is already required on the shipping container by regulations under the Wholesome Poultry Products Act. No specific rules are followed by poultry packagers concerning the weighing equipment or rounding methods to obtain these tare weights. Many weights and measures officials and retailers have complained about the lack of accuracy of the weights that are printed on poultry shipping containers. One of the objectives of the Task Force on Commodity Requirements was to establish rules for all packagers in determining tare; however, a majority of weights and measures officials who responded to the Task Force's inquiries placed a low priority on this objective, presumably because of their lack of confidence in the printed tare weights. The Task Force established rules concerning the number of decimal

places to which the tare should be recorded and the minimum quality of weighing devices used by the packer to determine tare. For example, to be of value to the retailer, tare weights rounded up to 0.01 lb are sufficient. For weights and measures officials' equipment with 0.001 lb divisions, one would need more precise tare weights to be printed on the shipping containers, but the weights may vary by more than 0.001 lb among the individual tares in a production lot. An individual shipment, however, may show little variability in tare weights.

The question arises as to how the enforcement official or store labeler is to trust printed tare information any more than the net weight declaration. The proposal was as follows:

> 11.28. Commodities' Variable Weights and Sizes. --Individual packaged commodities put up in variable weights and sizes for sale intact, and intended to be weighed and marked with the correct quantity statement prior to or at the point of retail sale, are exempt from the requirements of SECTION 6. DECLARATION OF QUANTITY: CONSUMER PACKAGES, while moving in commerce and while held for sale prior to weighing and marking; provided that the bin container bears a label declaration of the total net weight and the tare weight or tare weights for the individual packages contained within.

Regulations under the Wholesome Poultry Products Act administered by the U.S. Department of Agriculture already require bulk packages of poultry to be labeled with the tare weight of the random consumer-sized packages contained within. The request of the Southern Association seeks to broaden this requirement to bulk packages of meat. Therefore, the Committee requests the Liaison Committee to petition the USDA to add the tare weight information to their regulations covering meat and meat products.

UNIFORM REGULATION FOR THE METHOD OF SALE OF COMMODITIES

232-1 VC Preamble

(This item was adopted as part of the consent calendar.)

It is recommended that a statement of purpose be added to the regulation. See also Item 231-1. The proposal is as follows:

Preamble

The purpose of this regulation is to require accurate and adequate information about commodities so that purchasers can make price and quantity comparisons.

232-2A VC 1.1. Berries and Small Fruits; Delete "Open"

(This item was adopted as part of the consent calendar.)

It was proposed that Section 1.1. Berries and Small Fruits be broadened to allow the sale of these commodities by volume, whether or not they are sold in "open" measure containers.

The current regulation permits berries and small fruit to be sold by weight, or by volume when in measure containers. (This latter method of sale is exempt from labeling requirements.)

California weights & measures officials have observed berries enclosed or covered, in legal measure containers. The Western Association believes that this method of protecting the berries is acceptable, hence should also be exempt from the labeling requirements from which measure containers are exempt. The Laws and Regulations Committee agrees; however, regulations written by the FDA (21 CFR 101.100 (c)) exempt only open measure containers or those covered by an uncolored transparent wrapping. The regulation reads:

> An open container (a container of rigid or semirigid construction, which is not closed by lid, wrapper, or otherwise other than by an uncolored transparent wrapper which does not obscure the contents) of a fresh fruit or fresh vegetable, the quantity of contents of which is not more than 1 dry quart, shall be

exempt from the labeling requirements of section 403(e)(g)(2)(with respect to the name of the food specified in the definition and standard) and (i)(1) of the act; but such exemption shall be on the condition that if two or more such containers are enclosed in a crate or other shipping package, such crate or package shall bear labeling showing the number of such containers enclosed therein and the quantity of the contents of each.

The Committee concurs with this further explanation in the Federal regulations: a wrapping should not exempt the container from labeling requirements if the fruit cannot be seen in its natural color.

Therefore, the Committee recommends the following revision:

1.1. **Berries and Small Fruits.-- Shall be offered and exposed for sale and sold by weight, or by volume if in measure containers that are either open or else covered by uncolored transparent lids or other wrappings that do not obscure the contents and having capacities per subsection 1.1(a) or subsection 1.1(b), ~~and w~~. When ~~sold~~ selling berries and small fruits by volume in measure containers, whether or not covered, the measure containers themselves shall ~~be deemed~~ not ~~to~~ be packages for labeling purposes.**

(a) Inch-Pound Capacities 1/2 dry pint, 1 dry pint, or 1 dry quart.

(b) Metric Capacities - 250 milliliters, 500 milliliters, or 1 liter.

If two or more measure containers are placed in a shipping package, the crate or package shall show the number of measure containers and the quantity of contents of each.

The Committee will entertain a new item next year to define the term "small fruits." The Committee would like to suggest that either a list of products that constitute "small fruit" or a maximum diameter of the product for a given size of measure container be generated. The Regional Associations are encouraged to submit possible definitions.

232-2B I 1.1. Berries and Small Fruits; Minimum Weights for Unit Volumes

(This is an information item and was adopted when the report as a whole was ratified.)

The Western Weights and Measures Association proposed that berries and small fruits sold by volume have a corresponding minimum weight specified. It was argued that the field inspector cannot determine whether the level of fill of the measure container is acceptable without minimum weight requirements. As proposed, these minimum weights would not be part of the net contents declaration on the label, but a specified minimum amount of commodity would be required in a measure container. Such requirements have been in place in California since the 1930's.

It was argued that, even though a berry basket or box will test within H-44 requirements using rape seed, certain designs of berry baskets, (for example, those with narrow grooves in their base) hold significantly fewer berries than others. This places some berry packagers at a competitive disadvantage and prevents consumers from making value comparisons. The minimum net weights recommended were taken from the California regulation: 8 oz of berries or small fruits for 1/2 dry pint, 12 oz for 1 dry pint, and 1 lb 6 oz for 1 dry quart. (The reason that 1/2 dry pint can contain 8 oz and 1 dry pint only 12 oz is that the traditional design of a 1/2-pint basket differs from that of the 1-pint basket only in height. This allows the surface "heap" of fruit to be proportionally larger for a 1/2-dry-pint container than for a 1-dry-pint basket.)

The Committee members believe that the intent of Section 1.1 of the UMSCR is to permit packagers to fill and label by volume as an alternative to weight. Consequently, "farmers' markets," for example, are not required to have a commercial scale in order to sell berries and small fruits. The above proposal would require sellers of small fruits and berries to weigh all filled containers (or at least checkweigh filled containers periodically) to

ensure that the minimum weight has been delivered. This requirement would thus defeat the primary reason for this section. If there is sufficient sentiment to do so, the Conference could eliminate the sale of small fruits and berries by volume as a permitted method and require sale by weight only. If sellers are required to weigh these types of commodities, then the purchasers should be informed as to the weight. The Committee therefore recommends no change to Section 1.1. at this time.

If certain berry baskets or boxes with thin grooves or indentations are designed to hold the necessary amount of rape seed, but not the correct amount of small fruits or berries, their designs are unsuitable for their intended use. The Committee requests the Specifications and Tolerances (S&T) Committee to review the Notes subsection of Section 4.47 of Handbook 44 and add information on testing berry baskets so that their suitability for use is also tested (taping over small grooves, for example). See Item 347-1 of the S&T Report.

232-3 I 1.5.1. In Combination with Other Foods

(This is an information item and was adopted when the report as a whole was ratified.)

Section 1.5.1. permits a total net weight statement when meat, poultry, fish, or seafood is combined with other food elements to form a "distinctive food product." The Committee has been asked to define what constitutes a distinctive food product under the meaning of this section. For example, packages of "chicken cordon bleu" and "chicken kiev" (denoting a specific recipe or type of preparation) and products with fanciful names or names without generic definition ("shrimp stir fry") have been cited as falling under this section, whereas some weights and measures enforcement officers would classify some of these types of products under Section 1.5.2. Stuffed Fish, Seafood, Poultry, or Meat Products, which requires a minimum net weight statement of the fish, seafood, poultry or meat in the product. Many jurisdictions have asked whether they can require the net weight of the meat portion only to be labeled on a store-prepared package of raw meat and vegetables sold as a "pot roast stew," for example. However, frozen dinners have traditionally been permitted to declare only a total net weight statement. (This must be accompanied with a statement listing the ingredients in order of their predominance by weight.)

The Committee did not have time to study this issue in any depth. It appears appropriate to consult with the U.S. Department of Agriculture (USDA) concerning the standards of identity for foods containing meat or poultry and named "chicken stir fry" or "beef stew." The Committee will hold this item over, asking the regional weights and measures associations to provide input concerning any problems they experience in interpreting and, thus, enforcing this section.

232-4 V 1.5.2. Stuffed Fish, Seafood, Poultry, or Meat Products

(This item was adopted.)

Subsection 1.5.2 reads:

> 1.5.2. Stuffed Fish, Seafood, Poultry, or Meat Products. -- In the case of ready-to-cook stuffed fish, seafood, poultry, or meat products, the label must show the total net weight of the stuffed fish, seafood, poultry, or meat product and the minimum net weight of the fish, seafood, poultry or meat in the product excluding the fish, seafood, meat, or poultry that may be part of the stuffing.

Two different recommendations were made concerning Subsection 1.5.2:

1. Subsection 1.5.2 doesn't refer to "packages," but does refer to "label." Delete references to the label. Reason: in unpackaged stuffed chicken, fish, or pork chops prepared by the retail store and weighed at the time of purchase, the purchaser often cannot see the amount of stuffing, whether or not it is prepackaged.

2. Delete this subsection and permit stuffed items to be sold by total net weight. Reasons for: more than the protein ingredient is being sold; a stuffed item is a convenience food. A stuffed

meat or fish item is a subcategory of "distinctive food product" described in Subsection 1.5.1. In Combination with Other Foods. Subsection 1.5.1 permits distinctive food products to be labeled by a total net weight. It is difficult for a packager or retailer to sort by minimum weights the meat, poultry, or fish portion of the product before stuffing.

Subsection 1.5.2 was originally written to conform with USDA labeling requirements for packaged stuffed poultry and poultry products. (See Report of the 54th NCWM 1969, p. 211.) It was broadened to include other protein-based products in 1982 and 1985. When the subsection was broadened in scope, the Committee Report indicated that the requirement was to be applied to convenience foods prepared and displayed in the retail meat case. However, at the present time, the Committee can find no jurisdiction enforcing these requirements and requiring retailers to post a minimum net weight for the meat, poultry, fish, or seafood portion of a stuffed item. The Committee recommends deleting this subsection and modifying Subsection 1.5.1. In Combination with Other Foods by incorporating into the main body of text the footnote that indicates that an ingredient statement must also appear on the label. Subsection 1.5.1 will then read:

1.5.1. In Combination with Other Foods. -- When meat, poultry, fish, or seafood is combined with some other food element to form a distinctive food product, the quantity representation may be in terms of the total weight of the product or combination, and a quantity representation need not be made for each element, provided that a statement listing the ingredients in order of their predominance by weight must also appear on the label.

Please see the discussion in Item 232-5 for related information.

232-5 I 1.5.3. Meat, Poultry, Fish, and Seafood -- Packaged with Other Packages of Food

(This is an information item and was adopted when the report as a whole was ratified.)

An increasing number of packaged fresh meat, poultry, fish, and seafood items are appearing with packets of condiments in the package, but with only a total net weight declaration (meat and gravy, for example) on the package. Since the meat or poultry item has not been combined with other food elements to form a distinctive food product (such as a meat stew, for example), but is packaged together with another package, the Western Weights and Measures Association has recommended that these types of packages be treated as combination packages (see Section 10.5 of the Uniform Packaging and Labeling Regulation) and be required to declare the quantity of the packets separately from the quantity of the meat. This proposal stems from a City of Everett, WA, finding that turkey breasts of about 2-3 lb in weight were wrapped around 1/2 lb packets of gravy, and only a total net weight statement appeared on the label. The Liaison Committee has been working with the U.S. Department of Agriculture (USDA) on the turkey problem, since the USDA gave prior label approval for the turkey product in question. The Western Weights and Measures Association now recommends that a more generic solution be adopted since many types of combination packages other than turkey and gravy are on sale at retail stores. These are often packaged at retail, for example, Chinese pork packed with small packets of sesame seed, hot mustard, and soy sauce; or beef ribs with packets of barbecue sauce.

The Committee planned to recommend adding a new subsection to Section 1.5. Meat, Poultry, Fish, and Seafood:

1.5.3. Packaged with Packages of Other Foods. -- When meat, poultry, fish, or seafood is packaged with other packages of food, (for example, pork with a separate packet of barbecue sauce, or turkey with a separate package of gravy), the net weight of the meat, poultry, fish, or seafood portion in the combination package must be declared separately. If the total selling price is computed from the net weight of the meat, poultry, fish, or seafood portion only, then only the net weight of meat, poultry, fish, or seafood portion must be declared. In such instance, a separate declaration of the net contents of the other packages included with the meat, poultry, fish, or seafood is permitted, but not required.

The Committee was informed that the Liaison Committee's request to the U.S. Department of Agriculture to

revise their regulations to conform with the proposed addition to Section 1.5. would be considered along with other comments on the net weight proposal made by USDA, since the portions of the Code of Federal Regulations dealing with this matter were those being proposed for revision by the agency. Therefore, the Committee will carry this item over until resolution by USDA.

232-6 VC 1.5.3.1. Definition of the Term "Processed"

(This item was adopted as part of the consent calendar.)

This carry-over item was Item 232-2 in the Report of the 73rd NCWM, 1988 (page 157). Section 1.5.3.1 concerns the method of sale for "processed" clams, mussels, and oysters. A clarification of the term "processed" in Section 1.5.3.1 was requested by the Shellfish Institute of North America (SINA). SINA asked whether merely breaking the shellfish open (for example, oysters on the half shell) constitutes "processing", or whether the shellfish must be taken out of its shell before Section 1.5.3.1 applies. SINA points out that the meat is often still attached to the shell, and that there is considerable variability in meat to shell weight, making estimates of the net weight very difficult.

The Committee consulted with a representative from the Food and Drug Administration (FDA) at the Interim Meetings. It was the opinion of the FDA representative and the Committee that a declaration of total net weight including the weight of the shell would be meaningless, since the weight of the shell is a significant fraction of the total weight. It was also the opinion of the Committee that a net weight declaration would be impossible without removing the meat from the shell. The Committee decided that merely breaking the shellfish open, or even cutting the meat out of the shell and then placing it back on the shell in a raw state, should not constitute processing. Neither would adding sauces or spices to the whole shellfish meat constitute "processing". In such instances, the shellfish could be sold by count. The Committee believes the purchaser's concern is the number of servings (i.e., count). It would be useful if standardized terminology for size were also provided, (e.g., "standard," "select," etc.); however, these terms are not well defined in all parts of the industry and the purchaser may not know, without considerable consumer education efforts, what the size designations mean. However, it is the belief of the Committee that this product is similar to the purchase of eggs, that is, that count is the most meaningful net quantity designation.

The Committee believes that taking the meat out of the shell and mixing it in any way with ingredients other than sauces or spices requires a net weight statement excluding the weight of any shell. In this instance, the shell is merely a serving container. The term "processed" is specifically defined as the chopping, cutting, or commingling of the meat with other solid foods. The proposed revision to the subsection, including minor editorial reorganization, is as follows:

1.5.3.~~1~~1. Whole clams, oysters, or mussels in the shell (fresh or frozen) shall be sold by weight (including the weight of the shell, but not including the liquid or ice packed with them), dry measure (e.g., bushel), and/or count. In addition, size designations may be provided.

1.5.3.2. Whole clams, oysters, or mussels on the half shell (fresh, cooked, smoked, or frozen, with or without sauces or spices added) shall be sold by weight (excluding the weight of the shell) or by count. Size designations may also be provided.

1.5.3.3. Fresh oysters, clams, or mussels removed from the shell and placed in a container shall be sold by fluid volume. A maximum of 15 percent free liquid by weight is permitted.

1.5.3.~~1~~4. Processed clams, mussels, or oysters on the half shell (fresh or frozen) shall be sold by net weight excluding the weight of the shell. The term "processed" means removing the meat from the shell and chopping it or cutting it or commingling it with other solid foods.

1.5.3.~~2~~5. Canned (heat-processed) mussels, clams, or oysters shall be sold by net weight. A maximum of 41 percent free liquid by weight is permitted for canned oysters.

It was recommended that other products such as pink scallops, and cockles were appearing in the marketplace and needed method of sale requirements. Therefore, retitle the section:

1.5.3. Clams, Mussels, Oysters, and Other Mollusks

Add the term "and other mollusks" to all subsections in that section.

232-7A I 1.5.3.3. Oysters by Net Drained Weight

(This is an information item and was adopted when the report as a whole was ratified.)

This carry-over item was Item 232-3 in the Report of the 73rd NCWM, 1988, (page 157). Section 1.5.3.3. requires that fresh oysters, clams, or mussels removed from the shell be sold by fluid volume. A maximum of 15% free liquid by weight is permitted.

North Carolina reported that the largest number of complaints from restaurants and institutions in the state concerns short-measure oysters. Investigators have found product coming from many regions with the proper fluid volume, but with free liquid amounts much higher than the permitted 15% by weight. There were also instances in which gallon-sized plastic containers similar to those used by ice-cream manufacturers were being used as containers for oysters. The problem frequently encountered was that a one-gallon container has a one-gallon capacity only when brim full (as ice-cream would normally fill such containers); when filled with oysters, the containers can not be brim-filled, and therefore were all found short measure by volume.

The Southern Weights and Measures Association requested the Liaison Committee and the L&R Committee to study the feasibility of net drained weight, rather than fluid volume, as the required method of sale. The Committee discussed this problem with a representative of the Seafood Institute of North America and asked that its industry members determine the feasibility of drained weight as an alternative declaration. SINA reported that their association is opposed to labeling of shucked oysters by drained weight, although individual companies are not opposed. SINA argues that the consumer would be confused if there appeared different weights of oyster meat in containers of the same size. The Committee discussed this issue with a representative of the Food and Drug Administration at the Interim Meetings to determine if there are legal impediments to permitting drained weight as an alternative net contents declaration for fresh oysters removed from the shell. The FDA representative was adamant that the Federal Fair Packaging and Labeling Act requires that consumers be able to make value comparisons, and that the trade custom is to sell oysters by fluid volume. Therefore, fluid volume is the only permitted net contents declaration. The National Marine Fisheries Service, FDA, SINA, and state representatives all applauded the NCWM for standardizing the legal maximum amount of free liquid in shucked oysters to 15%. Therefore, the Committee recommends no change to Subsection 1.5.3.3. However, the test method published in the Report of the 73rd NCWM, 1988, will be recommended for inclusion in Handbook 133. See Item 232-7B on page 2-38 and Appendix B.

232-8 VC 1.6. Fluid Milk Products

(This item was adopted as part of the consent calendar.)

The Committee received a request for the addition of a 12-fl-oz size to the list of permitted fluid milk sizes. The Milk Industry Foundation supported the proposal, but not at the expense of dropping the 10-fluid-ounce size. Testimony at the Interim Meetings indicated that the 12-fl-oz size (in plastic containers) competed at retail with similarly packaged soft drink and juice items. The 12-fl-oz packages of milk were authorized in Delaware, where they are reportedly not in competition with the 10-fl-oz "gable roof" style fibre containers which have their own distinct place in the marketplace.

The Committee recognizes arguments on both sides of the question as to whether fluid dairy products (or other products) should be limited in number and size of permitted packages. While lacking complete agreement on this wider question, the Committee does believe that the specific issue of the proposed 12-fl-oz package size (and a corresponding size of 350 ml in the metric series) should be put before the Conference for its decision.

The following change in Section 1.6. is therefore submitted:

(a) **Inch-Pound Volumes - 1 gill, 1/2 liquid pint, 10 fluid ounces, 12 fluid ounces, 1 liquid pint, 1 liquid quart, 1/2 gallon, 1 gallon, 1-1/2 gallons, 2 gallons, 2-1/2 gallons, or multiples of 1 gallon.**

(b) **Metric Volumes - 125 milliliters, 250 milliliters, 350 milliliters, 500 milliliters, 1 liter, or multiples of 1 liter.**

232-10 W 1.9.2. Price Advertising

(This item was withdrawn as part of the Interim Report and is reprinted below for information purposes.)

This subsection requires the price of bulk food commodities to be advertised or displayed in terms of whole units of pounds or kilograms. It does not require the price or identity to be displayed. Utah weights and measures officials point out that many stores post no prices at all for the bulk food commodities, or post the prices in such a way that they are unreadable (too small print, too far from the consumer, or hidden by equipment). There is often no clear connection between the product offered and the price charged. Since these stores are not self-serve, the customer must ask for the product and can ask the price. The problem is that the customer has no idea about the price per pound of many items sold from bulk, for example, in a candy store, a boutique cookie store, etc. It is argued that the absence of posted pricing is in itself deceptive, i.e., many purchasers select one or two cookies costing $1.00 without realizing that they are priced at $6.95 per pound. Many purchases are on impulse; the consumer cannot make a value comparison if he doesn't know the price. When many customers are in line, a person might have to wait quite some time before being able to ask a clerk the price of a product to decide whether to make the purchase. Customers may be embarrassed to refuse the product when it costs more than expected. If the price is clearly posted, they can readily decide whether to buy. Utah weights and measures recommends requiring that the unit price be posted. The revision recommended was:

1.9.2. Price Advertising. - The price of bulk food commodities or food commodities not in package form and sold by weight shall be advertised or displayed in terms of whole weight units of pounds or kilograms only, not in common or decimal fractions or in ounces, and shall be prominently displayed on each tray or bin along with the common or usual name of each product. A supplemental declaration in common or decimal fractions, or in ounces, in print no larger than the whole unit price, is permitted.

The Committee found merit to the proposal, but had difficulty determining what the limits should be. For example, it was noted that most meat or fish counters display a price per pound on or near the item, but rarely identify the product "pork chop" or "flounder." How much identification is necessary? Must the seller distinguish lean hamburger from regular or post the percentage fat? Must a candy counter identify the type of peanut being sold, or the type of hard candy? (Candies are often given fanciful names which are also the common or usual name, for example, "chocolate turtles.") Bakery products permitted to be sold by count would not be covered. Some cookies have traditionally been sold by count rather than weight. What about fresh fruits and vegetables sold at a farmer's market by volume measure? Should the identification of the commodity be required in these instances, even though the product is not sold by weight?

These questions suggest that the regional weights and measures associations should further explore this issue and make recommendations together with arguments for their positions. Therefore, the Committee withdraws this item until a regional association develops the issue.

232-11 W 1.12. Ready-to-Eat Food

(This item was withdrawn as part of the Interim Report and is reprinted below for information purposes.)

Several recommendations have been made concerning this section.

1. Subsection (a) exempts items "sold for consumption on the premises" from being sold by weight, which exempts restaurants from selling food by weight. With the blurring of types of retail businesses, such as grocery stores with a small eat-in delicatessen, it becomes increasingly difficult to determine when food is sold for consumption on the premises. One recommendation is to define "sold for consumption on the premises" as requiring either (a) a restaurant license or (b) table space in the store. Some states exempt restaurants from sales tax. Other distinctions may be available in different jurisdictions.

2. Subsection (b) exempts items of at least three elements excluding condiments sold as a "ready-to-eat meal" from being sold by weight, whether or not sold for consumption on the premises. It is argued that exempting meals of three items from sale by weight is inconsistent with requiring meals of two items to be sold by weight. Further, it is inconsistent to exempt carry-out "meals," but not carry-out ready-to-eat food of other sorts (for example, barbecued ribs).

The Committee did not have time to explore this issue at the Interim Meetings, nor was it provided with a specific proposal. It therefore requests the regional and state associations to develop these issues and carry forward recommendations for the NCWM for next year.

232-9 VC 2.X. Advertising and Price Computing of Bulk Commodities

(This item was adopted as part of the consent calendar.)

The Southern Weights and Measures Association recommended broadening Subsection 1.9. Advertising and Price Computing of Bulk Food Commodities to address non-food items. Very small and/or expensive seed and many other non-food commodities are most often sold from bulk on a price per 1/4- or 1/2-pound basis. In the interest of equity and uniformity, any commodity sold on the basis of weight from bulk and not in packaged form should be required to be sold in terms of whole units of weight. The proposal was to delete all references to food. In addition, the Committee believes it is necessary to delete references to pricing only by the pound. Construction materials may more appropriately be priced by the ton. Very expensive seed could legitimately be priced by the ounce. Since the UMSCR is divided into a food and a non-food section, the Committee recommends adding the following subsection to the beginning of Section 2. Nonfood Products:

2.X. Advertising and Price Computing of Bulk Commodities. - The price of bulk commodities or commodities not in package form and sold by weight shall be advertised, displayed, and computed in terms of whole units of weight (i.e., pounds, ounces, grams, kilograms, etc.), and not in common or decimal fractions.

232-12A I 2.15. Liquefied Petroleum Gas Cylinder Tare Weights/ Compressed or Liquefied Gases in Cylinders

(This is an information item and was adopted when the report as a whole was ratified.)

This is carried over from Item 232-5 in the Report of the 73rd NCWM 1988 (page 160) and Item 214-6 in the Report of the 72nd NCWM 1987 (page 134). See those reports for further information.

The Committee developed substantial revisions to Section 2.15 in 1987. The committee delayed recommending changes until a complete test procedure was also available for incorporation into Handbook 133 to permit safe testing of cylinders. The Compressed Gas Association (CGA) volunteered to review the test procedures and proposed additional precautions and procedures to protect the less experienced testing official and to address the full range of product cylinder sizes. CGA has reviewed the test procedures (printed in the 73rd NCWM Report), but has not provided input on cylinder sizes. The committee wishes to thank CGA for their help in this important matter. This is an area in which many weights and measures officials are not well informed and it appears to be poorly monitored. (See Items 232-12B, 232-12C, and 232-13.) The committee will propose the revision to Subsection 2.15 below plus the test procedures (printed in Appendix D to the L&R Report in the 1988 Proceedings) to be incorporated into H-133 next year. The Committee urges weights and measures officials to visit cylinder refilling operations in their jurisdictions during the following year to become familiar

with the practices for the measurement and sale of these commodities. Officials should note the amounts being charged for these important and widely used systems. The following is for information only; it will be proposed to replace the current 2.15:

2.15. COMPRESSED OR LIQUEFIED GASES IN REFILLABLE CYLINDERS

This Section does not apply to disposable cylinders of compressed or liquefied gases.

2.15.1. NET CONTENTS. - The net contents shall be expressed in terms of cubic feet or cubic meters; pounds and ounces; or kilograms. A standard cubic foot of gas is defined as a cubic foot at a temperature of 70 °F and a pressure of 14.696 psia (or metric equivalent) except for liquefied petroleum gas as stated in Section 2.20.

2.15.2. CYLINDER LABELING. - Whenever cylinders are used for the sale of compressed or liquefied gases by weight, or are filled by weight and converted to volume, the following shall apply:

2.15.2.1. TARE WEIGHTS - The tare weight shall be legibly and permanently stamped or stenciled on the cylinder. All tare weight values shall be preceded by the letters "TW" or the words "tare weight." The tare weight shall include the weight of the cylinder (including paint), valve, and other permanent attachments. The weight of a protective cap shall not be included in tare or gross weights.

(a) ALLOWABLE DIFFERENCE. - The allowable difference between the actual tare weight and the stamped (or stenciled) tare weight for a new or used cylinder shall be one percent of the actual tare weight. However, when cylinders are filled by weight, the actual tare weight of the cylinder shall be used in computing the net weight or cubic volume derived from the net weight.

(b) AVERAGE REQUIREMENT. - The tare weights of cylinders at a single place of business found to be in error predominantly in a direction favorable to the seller and near the allowable difference limit shall be considered to be not in conformance with these requirements.

2.15.2.2. ACETYLENE GAS CYLINDER TARE WEIGHTS. - Acetone in the cylinder shall be included as part of the tare weight.

2.15.2.3. ACETYLENE GAS CYLINDER VOLUMES. - The volumes of acetylene shall be determined from the product weight using approved tables such as those published in NBS Handbook 133 or those developed using 70 °F and 14.7 cu ft per pound at one atmosphere as conversion factors.

2.15.2.4. COMPRESSED GASES SUCH AS OXYGEN, ARGON, NITROGEN, HELIUM, AND HYDROGEN. - The volumes of compressed gases such as oxygen, argon, nitrogen, helium, or hydrogen shall be determined using the tables and procedures given in NBS Technical Note 1079, Tables of Industrial Gas Container Contents and Density for Oxygen, Argon, Nitrogen, Helium, and Hydrogen and supplemented by additional procedures and tables in NBS Handbook 133.

232-12B I 2.15. Liquefied Petroleum Gas Cylinder Tare Weights/Stamped Tare Weights

(This is an information item and was adopted when the report as a whole was ratified.)

Subsection 2.15 presently requires:

2.15. Liquefied Petroleum Gas Cylinder Tare Weights -- whenever stamped tare weights on cylinders are employed in the sale of liquefied petroleum gas, the following shall apply.

2.15.1. Allowable difference. -- The allowable difference between the actual tare weight and the stamped tare weight for a new or used cylinder shall be one percent of the actual tare weight. The tare weight shall include the weight of the cylinder (including paint), valve, and other permanent attachments. The weight of a protective cap shall not be included in tare or gross weights.

2.15.2. Average requirement. -- The tare weights of cylinders at a single place of business found to be in error predominantly in a direction favorable to the seller and near the allowable difference limit shall be considered to be not in conformance with these requirements.

North Carolina enforcement officials checked the tare weights of 20- and 100-pound compressed gas cylinders.

- 10 out of 14 (or 71%) of a lot of 22-lb cylinders were beyond the 1% allowable difference;
- 14 out of 26 (or 54%) of a lot of 18-lb cylinders were beyond the 1% allowable difference; and
- 14 out of a lot of 25 (or 56%) of 68-lb cylinders were beyond the 1% allowable difference.

All but one of the cylinders that were outside the allowable difference in one lot were uniformly heavier than their stamped tare weights. This means that, for any gases put into these cylinders by weight, the actual net weights (or any volume computed from those weights) would all be less than the gross weights minus the stamped tare weights. The Committee urges weights and measures officials to test LPG-gas-cylinder tare weights and to enforce requirements.

232-12C I 2.15. Liquefied Petroleum Gas Cylinder Tare Weights/Acetylene

(This is an information item and was adopted when the report as a whole was ratified.)

One of the continuing issues discussed at the Interim Meeting concerned the sale of acetylene by weight or volume (14.7 cu ft per lb at 70 °F) and the methods employed by the businesses that refill these cylinders to determine the final net weight or volume. Acetylene is a relatively expensive material used mainly by industry and business in the manufacturing or repair sectors (e.g., welding). Acetylene is a highly unstable gas that is placed in cylinders containing a porous material and liquid acetone, which acts as a solvent into which the acetylene is absorbed in a stabilized condition. Acetylene cylinders are stamped with tare weights that include the weight of the acetone. As acetylene is withdrawn from the cylinder, acetone will also be withdrawn. Therefore, when the cylinders are returned for refilling, they must have acetone added to bring them back to their stamped tare weights. Not all businesses that fill acetylene cylinders "reacetone" the cylinders to the stamped tare weight. Weights and measures officials have found some businesses not adding acetone to small tanks, or only adding acetone to 1 lb less than the stamped tare weight "to reduce spitters." This practice means that, if such businesses do not weigh tanks before and after filling, the "expected" amount of acetylene will not enter the cylinders due to insufficient acetone to absorb it. Thus, one jurisdiction found the 40-cu-ft cylinders in one business from 13 to 50% short measure. California regulations require that, if the tare weight is not brought back to the stamped tare weight, then the tag must show the tare weight to which the cylinder was reacetoned; this requirement forces the refiller to weigh his cylinders prior to filling. California weights and measures officials maintain that this tare weight can be determined (and the resulting tare weight used in determining final charges) to within 1/4%. The Compressed Gas Association (CGA) has pointed out that the regulations of the Department of Transportation (DoT) require that tare weights be stamped and accurate within 1% of actual. Although safety is of prime importance, the degree of agreement between the stamped tare weight and the actual tare weight is not the concern of weights and measures officials unless (a) refilling businesses are not adding enough acetone to permit a given cylinder to reabsorb the amount of acetylene that it is expected to contain, or (b) these businesses are not weighing their cylinders both before and after filling to determine whether the tanks contain the amount of acetylene for which they are charging. The issue of safety is separate from that of good measurement practices in the sale of acetylene. The Committee will continue to study this issue in the coming year. Several questions must be answered:

1. What are the acetylene refilling practices in different parts of the country? Are gross and tare weights taken on all acetylene cylinders?

2. When charging by the cubic foot, what is the conversion factor(s) or other formula(s) used to get from weight to volume?

3. Is the practice of uniformly reacetoning to less than the stamped tare weight safe? How much less than the stamped tare weight can a cylinder be reacetoned and still be safe?

4. Are many acetylene refilling businesses not weighing the tanks after filling (or subtracting the stamped rather than the actual tare weight) to ensure that the correct amount of acetylene went into the tank?

232-13 VC 2.X. Liquid Oxygen Used for Respiration

(This item was adopted as part of the consent calendar.)

The County of Summit, Ohio, has requested that the Committee consider adding a requirement concerning liquid oxygen used for respiration to the Uniform Regulation for the Method of Sale of Commodities.

Liquid oxygen is sold by weight and delivered to homes of people with respiratory problems. Rented oxygen cylinders are removed from the home and "transfilled" from a large tank on the delivery truck. Liquid oxygen costs from $.95 to $1.50 per pound, and the average delivery is 80-100 pounds per week. Medicare, Medicaid, or other insurance is often billed for the product.

The truck may be equipped with a platform or similar scale to weigh the cylinder before and after filling. Often, the truck operator does not use the scale to weigh the cylinder at all. Summit County officials have weighed cylinders immediately prior to and after filling and have documented monetary errors of $8 to $25 per delivery. They estimate 1000 customers for this product in their county alone.

An alternative method of determining the amount delivered is to use a volume gauge. In investigations, Summit County officials have found charts to convert from the gauge reading to a weight for invoicing purposes. When liquid oxygen is sold by weight, it must be weighed, not measured by volume. The following method of sale is recommended:

2.X. Liquid Oxygen Used for Respiration. --

a. If sold by weight, the liquid oxygen must be weighed on an appropriate, sealed commercial scale. A pressure or other type of gauge may not be used to determine weight.

b. A delivery ticket or sales invoice shall be provided and shall contain at least the following information:

(1) date delivered,

(2) name and address of vendor,

(3) name and address of the purchaser

(4a) if sold by weight:

weight of cylinder before filling,

weight of cylinder after filling, and

the net weight of liquid oxygen delivered,

(4b) if sold by measure:

method of measurement and any computation used to arrive at the net quantity of liquid oxygen delivered,

(5) the unit price,

(6) the total computed price,

(7) weigher's or measurer's signature.

The Committee will seek further input on appropriate methods of sale when liquid oxygen is not sold by weight (i.e., metered or gauged.)

236 I UNIFORM REGULATION FOR NATIONAL TYPE EVALUATION

(This is an information item and was adopted when the report as a whole was ratified.)

The Executive Secretary conducted a survey to determine the extent of adoption of the Uniform Regulation for National Type Evaluation (URNTE) by the States. Several states indicated in their responses that they had not adopted the URNTE because they did not plan to establish an NTEP Participating Laboratory. The Committee wants to make it clear that the URNTE is intended for all states, not just those establishing Participating Laboratories. The key language in this regulation is as follows:

Section 3. Certificate of Conformance. The Director may require any weight or measures, or any weighing or measuring instrument or device, to be issued a Certificate of Conformance prior to use for commercial or law enforcement purposes.

The Committee will add the following to the Intent statement found on page IV-109 introducing the Uniform Regulation:

If a state does not wish to establish a Participating Laboratory, Section 2.4. Participating Laboratory and Section 4. Participating Laboratory may be deleted.

237 UNIFORM MOTOR FUEL REGULATION

237-1 VC Octane Ratings for Blend Dispensers

This carry-over item was Item 237-1 in the Report of the 73rd NCWM 1988 (page 169).

Additional trends bearing on this issue are:

- The sale of motor fuel from blending dispensers will likely increase in use throughout the country:
- In order to reduce the possibility of underground leaks, the number of underground tanks will be reduced; there are inherent economies of operation with fewer tanks.
- Marketing practices are generating purchaser demand for more choices in octane for a given type of motor fuel.
- A third type of motor fuel may soon be introduced, needing its own storage tanks.

There are two types of blending dispensers: (1) those that blend at or close to the nozzle (requiring a double

hose to the nozzle) and (2) those that blend within the dispenser at a valve where the delivery hose connects to the dispenser (requiring only a single hose to the nozzle). Blending systems of type (1) provide motor fuel of the selected octane almost instantaneously. Their drawback is the cumbersomeness of the double hose; in those jurisdictions that presently require or are planning to require Stage II vapor recovery, the third hose for vapor recovery makes the final hose configuration more unwieldy. Delivery systems of type (2), however, by their very design, contain in the delivery hose residual fuel of the octane selected by the previous purchaser. Under worst case conditions, this may be 87 octane gasoline prior to a customer selecting 92 octane. The questions to be answered are:

- What is the minimum purchase amount necessary for a customer to obtain essentially the advertised octane under worst case conditions?

- Is this minimum purchase amount equitable for most purchasers?

- What is the minimum flush necessary before taking samples for octane testing by weights and measures officials or motor fuel quality testing officials?

With the cooperation of Gilbarco, Inc. and Arthur Price, Motor Fuel Quality Laboratory for the State of Maryland, the North Carolina Standards Division performed extensive testing of octane blends rendered by a Gilbarco blend dispenser of the single hose configuration. Their objective was to establish a uniform sampling procedure for blend dispensers. The particular blender provided four octane levels between 87 and 92 octane. A standard 10 1/2 foot hose was attached. Tests were conducted where the hose was charged with 87 octane and the next delivery was set to deliver 92 octane fuel. Each laboratory performed octane tests on 24 samples; the first set represented the hose fully charged with 87 octane fuel; the second set after 0.1 gallon flush; the third set after a 0.2 gallon flush and so on up to 0.7 gallon flush. Between sets of samples the hose was fully charged with 87 octane fuel. Figure 1 gives the average octane determination for each set of samples. A 0.3 gallon flush is the point after which 92 octane fuel is delivered. Tests on the base fuels, nominally 87 and 92 octane, indicated octanes of 87.2 and 92.1 respectively.

Based upon the study conducted, a minimum flush of 0.3 gallon is necessary. A larger amount will be necessary if the spread between maximum and minimum octane levels is larger or if the hose length is longer (as, for example, at a marina).

Based upon these data, a customer who purchases at least 2-1/2 gallons will obtain the advertised octane. Marketing research results provided by Sun Oil Company based on a four-city survey of 2400 transactions in March and April determined that for those customers buying all grades, a "fill up" averaged 9.6 gallons: none buy less than 1 gallon and 99.2% buy 2 gallons or more. For those customers buying high octane product (those subject to the worst case example), none buy less than 1 gallon and 99.5% buy 2 gallons or more. There may be some bias since this data only recorded vehicle fillings (including motorcycles, if any), but not container fillings. However, preliminary information indicates that blending dispensers of the single hose design do appear to deliver the advertised octane to 99% or more of all customers.

The Committee recommends that the following policy be added to NCWM Publication 3, "Policy, Interpretations, and Guidelines":

> **A minimum of 0.3 gallon of motor fuel shall be flushed from the dispenser before taking a sample for octane verification. The flush shall be returned to the storage tank containing the lowest octane.**
>
> **Note: This guideline does not apply to a multi-product dispenser that is not a blender but has a single delivery hose.**

The Examination Procedure Outline for Motor-Fuel Dispensers (NCWM Publication 12) recommends a fast and slow delivery on both extremes of octane for blending dispensers. In order to reduce the amount of product drawn from the dispenser, it is possible to incorporate this flush when testing motor-fuel quantity and quality by the following:

- Set the dispenser to the lowest octane and dispense 5 gallons each in a slow flow and regular delivery; draw an octane sample for the lowest octane indicated.

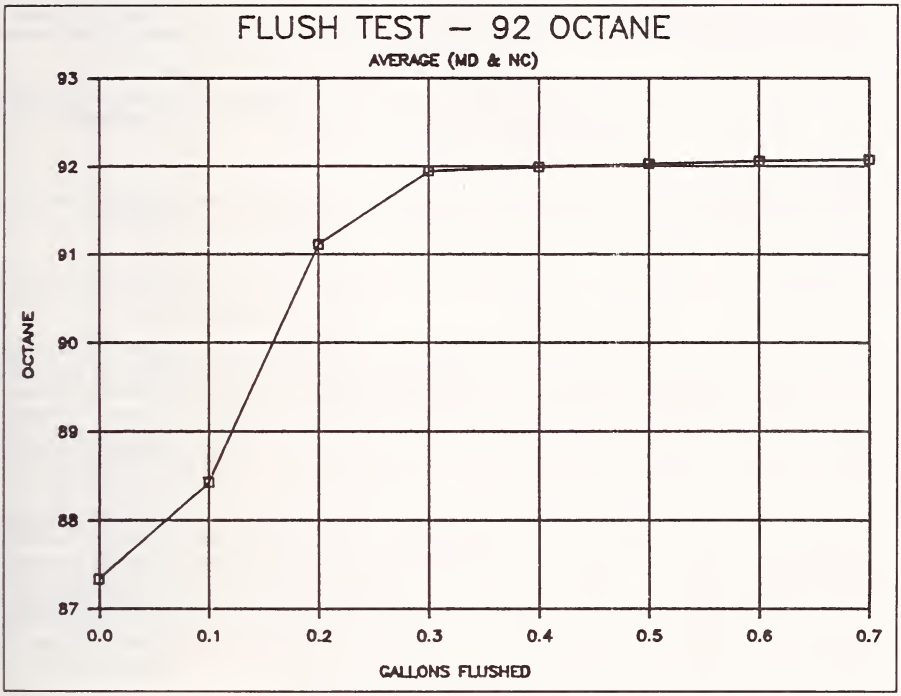


Figure 1

- Set the dispenser to the highest octane; dispense 0.3 gallons as indicated on the dispenser; then draw an octane sample for the highest octane tested.

- Continue to run slow flow and other quantity tests at the highest octane setting.

The Committee will submit this draft to the S&T Committee to be incorporated in their review and update of the EPO's for blending dispensers.

240 HANDBOOK 133

240-1A I Proposed Sampling Plans and Smaller MAV'S

(This is an information item and was adopted when the report as a whole was ratified.)

The Northeastern Weights and Measures Association endorsed a new sampling plan and MAV proposal prepared by New York and proposed these changes to the sampling plans and MAV's in Handbook 133. The proposal would revise the sampling plans in Handbook 133 to permit more individual packages in any given sample to exceed the MAV, and to reduce the MAV's in the present Handbook 133. To quote from a letter from New York transmitting part of its supporting data: "Since the NY plan allows packages outside the MAV,

it recognizes the occasional outlier. However, it penalizes the packer with overall poor control. We think a sampling plan should discriminate against this condition and our plan is much more sensitive to this situation than the current HB 133."

Data on 103 lots using Category B sampling and 75 lots using Category A sampling were given to the Committee at the Interim Meeting to show how package lots would fare as compared with the present Handbook 133. This data is available upon request from the Office of Weights and Measures.

Category B
Of 103 lots tested using Category B plans, two lots would have failed the NY plans, none would have failed Handbook 133 plans. Category B sampling plans are used for routine inspection at retail stores.

Category A
Of 85 lots tested using Category A plans, 7 of 85 lots (excluding a coffee lot about which NY expressed reservations) would fail the NY plans, none would have failed Handbook 133 plans.

Three lots that failed the NY Category A plans but passed the Handbook 133 plans consisted of fruit cookies packed in cellophane wrappers which might have lost moisture during distribution. However, to quote again from the letter of transmittal from New York: "This is a perfect example of lots that we in New York want to control. This is a case of a packer with poor net weight control, who is targeting at the mean. A consumer buying one of these packages has a 16% (or 1 in 6) chance of getting short weights from 3.5 to 4.5% of the labeled weight. It is our view that this does not meet the intent of the net weight regulation, that no individual package error shall be unreasonably large."

New York proposes Tables 2-2, 2-5, 2-8, 2-9, 3-1 and 4-2 printed on pages 115 through 121 to replace the tables with the same names in Handbook 133. Figures 2 and 3 on page 119 show the difference between the Handbook 133 and the New York proposed MAV's, along with a comparison with the European Economic Community (EEC) individual package limits. Although the New York proposed MAV's are smaller than the Handbook 133 MAV's, both of the New York proposed Category A and Category B sampling plans permit more packages that are short weight or measure to exceed the MAV's. (Compare the fourth columns in proposed Tables 2-2 and 2-5 with the current tables.) For example, the current number of minus package errors allowed to exceed the MAV is 0 (zero) for a sample size of 10 (Category B plan); the proposed number is 1. This would allow one package in every sample of 10 to exceed the MAV without failing the lot.

With the small amount of data submitted, it is difficult to determine the benefits of switching to the NY sampling plans. Since the preliminary data indicate about the same level of pass/fail of the New York proposed revisions, with Handbook 133 it is unclear how the changes in sampling plans and MAV's would penalize a packer with poor overall control unless the packer used a checkweigher or unless the weights and measures official tested the entire lot and sorted out all packages that exceeded the MAV. If an attempt is made to obtain a random sample, the number of packages in a sample with shortages exceeding the MAV are not "outliers": they are the direct result of the underlying distribution of package weights. In a sample of 10, if one package exceeds the MAV, this implies that as much as 10% of the lot is comprised of packages that exceed the MAV. If the MAV's are reduced and the number of package shortages allowed to exceed them is increased, there may be no net difference. Costs would accrue to inspection agencies to teach their field inspectors new procedures. Moreover, similar or higher costs would be borne by packagers.

Other points considered at the Interim Meetings were:

- Test data were provided only from retail food stores in New York City.
- No data were provided on fresh fruits and vegetables in packaged form and labeled by weight (for example, 5-lb bags of potatoes, onions, etc).
- No data were provided on items often packaged by the retail stores themselves (fresh meat, poultry, fish, or seafood in random weight packages).
- No data were provided on a vast variety of commodities not commonly available at retail food stores, for example, gardening and yard materials such as mulch, potting soil, and chemicals, and hardware store/handy-man products such as polyethylene sheeting, nails, and portland

cement.

- No data were provided on meat or poultry products, (either fresh or processed) from Federally inspected plants under USDA jurisdiction.

- Although the NY proposal also seeks to change the MAV's for packages labeled by liquid measure, no data were provided for these types of products.

- Although the NY-proposed MAV's are smaller than Handbook 133's MAV's, the NY-proposed sampling plans permit more packages in a sample to exceed the MAV before they would fail the lot. This is the reason that the results from testing using the NY proposal are about the same as those using the current procedures. Since NY City currently levies fines and takes administrative action based on individual packages that fail to comply, it might be possible for the city to continue to take action on a package-by-package basis. This is not the intent of lot sampling nor of Handbook 133; nor was it the intent of Handbook 67 (which New York cites in their present regulations).

- Although the NY proposed MAV's are about the same as those used in the European Economic Community (EEC) (see Figures 3 and 4) the EEC plans are intended for use at the production or plant level, not at retail, where the NY proposal would be applied.

The Committee did not feel that enough information was submitted with the proposal to make a decision or recommendation to the voting membership of the NCWM, nor was there enough time for weights and measures or industry to determine the effects of the proposal on their operations. Therefore, the Committee publishes the proposal for comment and will carry the item over. This proposal has been submitted for rulemaking by the State of New York. New York has agreed to share the results of their deliberations with the Conference.

The Committee proposes language (see Item 240-1B) to be included in Handbook 133 concerning the appropriate action to be taken on individual packages that exceed the MAV yet do not fail the lot (i.e., take the packages off-sale, but do not levy fines or other penalties on these individual packages).

Table 2-2. Sampling plans of Category A.

1	2	3	4
Lot size (number of packages in lot)	Sample size (number of packages in sample)	Tare sample size[a] (number of packages chosen for tare determination)	Number of package errors allowed to exceed the MAV[b]
N	n	n_t	
30 or less	all	2	0
31-800	30	2	2
801-2,000	50	5	4
2,001-5,000	80	5	6
5,001-15,000	125	5	9
15,001 and greater	200	10	13

[a]Special rules for tare sampling apply when Section 2.11.4. is followed (this is the tare procedure for variable tare and must be used for glass or aerosol packages).

[b]See Tables B-9 through B-14, and Sections 2.12., and 2.13.

Table 2-5. Sampling plans of Category B.

1	2	3	4
Lot size (number of packages in lot)	Sample size (number of packages in sample)	Tare sample size[a] (number of packages chosen for tare determination)	Number of minus package errors allowed to exceed the MAV[b]
N	n	n_t	
Up to and including 250	10	2	1
251 and greater	30	2	2

[a]Special rules for tare sampling apply when Section 2.11.4. is used (glass or aerosol packages).

[b]See Tables 2-8 through 2-11 (pages B-9 to B-14), Sections 2.12. and 2.13.

Table 2-8. MAV's for an individual package labeled by weight[a].

Avoirdupois units			Metric units	
Labeled weight	MAV		Labeled weight	MAV
Pounds or ounces	Decimal pounds	Fractional ounces	grams	grams
up to and including 0.09 lb up to and including 1.40 oz	9% of labeled weight		up to and including 40 g	9% of labeled weight
0.09+[b] to[c] 0.17 lb 1.40+ to 2.70 oz	0.008	1/8	40+ to 75 g	4
0.17+ to 0.32 lb 2.70+ to 5.10 oz	0.012	3/16	75+ to 150 g	5
0.32+ to 0.47 lb 5.10+ to 7.50 oz	0.016	1/4	150+ to 200 g	7
0.47+ to 0.72 lb 7.50+ to 11.5 oz	0.020	5/16	200+ to 300 g	9
0.72+ to 0.91 lb 11.5+ to 14.6 oz	0.024	3/8	300+ to 400 g	10
0.91+ to 1.18 lb 14.6+ to 18.9 oz	0.028	7/16	400+ to 550 g	12
1.18+ to 1.62 lb	0.032	1/2	550+ to 750 g	14
1.62+ to 2.30 lb	0.038	9/16	750+ to 1000 g	18
2.30+ to 2.90 lb	0.046	3/4	1000+ to 1300 g	22
2.90+ to 3.60 lb	0.054	7/8	1300+ to 1600 g	26
3.60+ to 4.20 lb	0.064	1	1600+ to 2000 g	30
4.20+ lb	1.5% of	label weight	2000 g +	1.5% of label weight

[a]Applies only to shortages in package weight (that is, the MAV is compared with minus package errors only)

[b]0.08+ means "greater than 0.08"

[c]"to" means "to and including"

Table 2-9. MAV's for an individual package labeled by volume-- Liquid or Dry.[a]

Inch-Pound			Metric		
Labeled Volume fl oz	MAV fl oz	Labeled Volume cubic inches	MAV cu in	Labeled Vol milliliters	MAV mL
Up to & incl 1.40 fl oz	9% of label vol[b]	up to and incl 2.5 cu in	9% of label vol	Up to and incl 40 mL	9% of label vol[b]
1.40+[d] to[e] 2.70 fl oz	0.13	2.5+ to 4.9 cu in	0.23	40+ to 75 mL	4
2.70+ to 5.10 fl oz	0.17	4.9+ to 9.2 cu in	0.34	75+ to 150 mL	5
5.10+ to 7.50 fl oz	0.23	9.2+ to 13.5 cu in	0.45	150+ to 200 mL	6
7.50+ to 11.5 fl oz	0.30	13.5+ to 20.7 cu in	0.56	200+ to 320 mL	8
11.5+ to 14.6 fl oz	0.34	20.7+ to 26.3 cu in	0.68	320+ to 420 mL	10
14.6+ to 18.9 fl oz	0.40	26.3+ to 34.0 cu in	0.80	420+ to 540 mL	12
18.9+ to 25.9 fl oz	0.48	34.0+ to 46.6 cu in	0.90	540+ to 750 mL	14
25.9+ to 36.8 fl oz	0.60	46.6+ to 66.2 cu in	1.1	750+ to 1050 mL	17
36.8+ to 46.4 fl oz	0.75	66.2+ to 83.5 cu in	1.3	1050+ to 1320 mL	22
46.4+ to 57.6 fl oz	0.83	83.5+ to 104 cu in	1.5	1320+ to 1650 mL	28
57.6+ to 67.2 fl oz	1.00	104+ to 120 cu in	1.8	1650+ to 2000 mL	30
over 67.2 fl oz	1.5% of label vol	over 120	1.5% of label vol	over 2000 mL	1.5% of label vol

[a]Applies to shortages in package volume (that is, minus package errors).

[b]Use laboratory glassware.

[c]Use laboratory glassware.

[d]0.50+ means "greater than 0.50."

[e]"to" means "to and including."

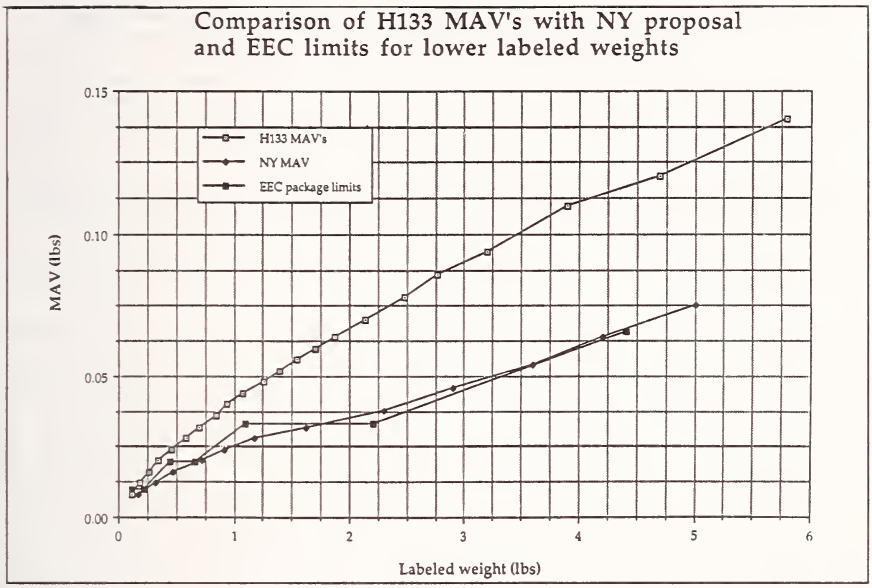


Figure 2

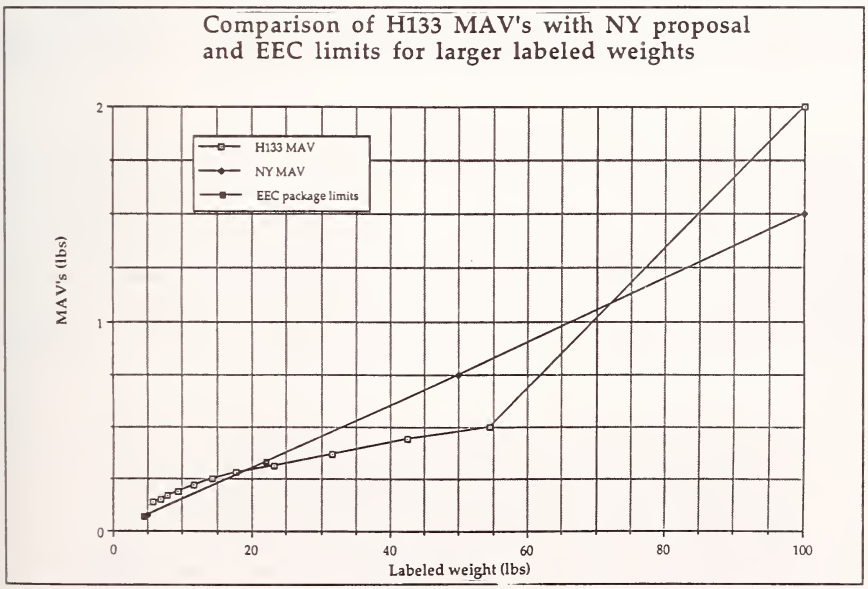


Figure 3

Table 3-1. Recommended maximum units of measure to be used in recording package weights.

Avoirdupois			Metric units	
Labeled weight	Units of measure (oz avoir)	(lb)	Labeled weight (g or kg)	Units of measure (g)
Up to and including 0.09 lb Up to and including 1.4 oz	a	a	Up to and including 40 g	a
0.09+ to 0.47 lb 1.4+ to 7.5 oz	1/32[b]	0.002[b]	40+ to 200 g	0.001[b]
0.47+ to 2.3 lb 7.5+ to 36.8 oz	1/16	0.005	200+ to 1 kg	0.002
2.3+ to 5.3 lb 36.8+ to 85 oz	1/8	0.01	1+ to 2.6 kg	0.005
5.3+ to 13.3 lb	1/4	0.02	2.6+ to 5.3 kg	0.01
13.3+ to 26.6 lb	1	0.05	5.3+ to 13.3 kg	0.02
26.6+ to 54 lb	2	0.1	13.3+ to 26.6 kg	0.05
54+ to 120 lb	4	0.2	26.6+ to 53.3 kg	0.1
120+ lb	8	0.5	53.3 kg +	0.2

[a]An analytical or other high accuracy balance will be necessary for weighing packages in this category.

[b]The equal-arm package scale must be used as null-indicator for packages labeled from 1.92 to 5.44 oz or 82 to 250 g to eliminate effects of possible tower errors.

Table 4-2. Recommended maximum units of measure to be used for recording the weights of packaged goods labeled by liquid volume.

Inch-Pound			Metric	
Labeled volume fl oz or gal	Units of measure (oz avoir)	(lb)	Labeled volume mL or L	Units of measure (g)
Up to and including 4.50 fl oz	a	a	Up to and including 130 mL	a
4.5+ to 14.0 fl oz	1/32[b]	0.002[b]	130+ to 420 mL	1[b]
14.0+ to 44.0 fl oz	1/16	0.005	420+ mL to 1.25 L	2
44.0+ to 100 fl oz	1/8	0.01	1.25+ to 2.90 L	5
100+ to 200 fl oz 0.78+ to 1.56 gal	1/4	0.02	2.90+ to 5.80 L	10
1.56+ to 6.25 gal	1	0.05	5.80+ to 23.8 L	20
6.25 gal +	2	0.1	23.8 L +	50

[a]Use analytical or other high accuracy balance.

[b]Use package checking scale as null indicator.

240-1B VC 2.9. Individual Packages

(This item was adopted as part of the consent calendar.)

Part of the discussion at the Interim Meeting centered around individual packages with shortages that exceed the MAV but which don't fail the entire lot. Per Handbook 133 (Third Edition), in order for a lot to pass Category B sampling plans, a sample may contain no packages with shortages that exceed the MAV: if any are found, the entire lot is out of compliance. Handbook 133, Category A sampling plans permit some packages to exceed the MAV, but the language is vague as to handling these individual packages. In the New York proposal presented in Item 240-1A, more packages are permitted with shortages beyond the MAV without failing the entire lot. The Committee discussed this issue in open session at the Interim Meeting and believes it necessary to clarify what is appropriate action on packages that exceed the MAV's in Handbook 133. It was the consensus of those enforcement officials at the meeting that no fines or other penalties should be levied for individual packages that are short weight or measure by more than the MAV; the packages should be called off-sale. The proposal follows:

2.9. Individual Packages

In ~~Even when~~ a lot complying~~s~~ with the package requirements as determined by either a Category A or B sampling plan, individual packages in the sample might be short weight or measure from the labeled quantity by more than the MAV ~~from the labeled quantity. However, any individual package~~ These are called "defective" packages. Enforcement action should be taken on the entire lot if the number of defective packages is greater than the allowed number in Category A (Table 2-2) or Category B (Table 2-5). ~~that is short by more than the MAV from the labeled quantity is considered defective.~~ No fines or other penalties should be levied for defective packages, if the

number of such packages is less than the number that would require the lot to be rejected. Defective packages should be ordered off-sale. Defective packages should not be reintroduced into commerce.

Disposition of such packages may be recorded on the report forms on pages A-1 or A-2, under "Comments."

232-7B VC 4.16. Fresh Oysters Labeled by Fluid Volume

(This item was adopted as part of the consent calendar.)

See the discussion on Item 232-7A concerning the sale of fresh shucked oysters by drained weight for the background on this item. Since fresh oysters must be labeled by fluid volume, the only way to control the amount of water that is packed with the oysters is to limit the amount of free liquid. Section 1.5.3.3 of the UMSCR sets a limit of 15% free liquid by weight. Thus, the testing official must test the capacity and fill of the container in which fresh shucked oysters are sold to determine that the volume declaration has been met, and must also weigh the amount of oysters and the amount of free liquid after draining the oysters to determine that the 15% limit has not been exceeded. This test method was published in the Report of the 73rd NCWM, 1988, and is reprinted in Appendix B. **The Committee recommends its adoption as Section 4.16. in Handbook 133.**

240-2 I 4.12. Mulch/Test Measure

This was Item 240-3C in the Report of the 73rd NCWM, 1988 (page 174). Based upon product measurement tests conducted by the National Bark and Soil Producers Association (NBSPA) for various forms of mulch, the industry requested revision of the test procedure to replace the 3- or 4-foot-high test measure with a 1-cubic-foot measure. The justification was to better approximate the intended consumer use of mulch products (recommended mulch thicknesses of 4 to 6 inches, for example) and the industry packaging procedures (a depth of 9 to 10 inches of material is conveyed by belt into the packages). The NBSPA believes that this change will eliminate the volume compression that results from using the 3-foot-high test measure as compared with the 1-foot-high test measure on 2-cubic-foot and larger sized packages. Data submitted by the NBSPA shows that the quantity determined when using a 1-cubic-foot test measure on 3-cubic-foot packages of bark is greater than that determined when using a 3-cubic-foot test measure. The Committee asked volunteers to intercompare the differences in testing time and results.

Data was analyzed for 28 lots of packaged mulch: hardwood, pine bark (shredded and nuggets), and cypress. Figures 4 and 5 show the results for these lots. Nine of the 28 lots (or 32%) failed to average the labeled volume when using either the 1-cu-ft or the 3-cu-ft test measure. Eighteen of the 28 lots (or 64%) averaged at or above the labeled volume using either the 1-cu-ft or the 3-cu-ft test measure (see Figure 4). Only one of the 28 lots would have passed using a 1-cu-ft test measure but failed using a 3-cu-ft test measure. Whether the tests were conducted at retail or at the bagging plant did not affect the results in net contents compliance.

Only one of the 28 lots was found to have the same average error using either the 3-cu-ft measure or the 1-cu-ft measure. Nine lots (or 32%) gave greater results with a 3-cu-ft measure than with a 1-cu-ft measure (see Figure 5), but a majority of lots, (18 or 64%) indicated larger volumes when using the 1-cu-ft measure than with the 3-cu-ft measure. The 3-cu-ft measure probably yielded larger volumes than the 1-cu-ft measure when large pieces of bark wedged in the corners of the test measure. The inspector was more aware of this "wedging" problem with the 1-cu-ft measure.

It took much less time to use the 3-cu-ft test measure than the 1-cu-ft measure. Out of 21 tests using two inspectors, times to measure one bag in a 3-cu-ft measure ranged from 0.87 min (52 sec) to 1.95 min (117 sec); times for the 1-cu-ft measure ranged from 1.73 min (104 sec) to 5.17 min. The multiple dumps into a 1-cu-ft measure take considerably longer and cause housekeeping problems (cleaning up loose material).

The NBSPA believs that the 1 cubic foot measure should be the standard. One might argue that a test measure only 6 inches high would be more appropriate with respect to the recommended mulch thickness. However, the industry appears to be going to a 2-cubic-foot package; this negates much of the argument about compaction in a 3-foot-high measure. There is less compaction in a 2-foot-high column.

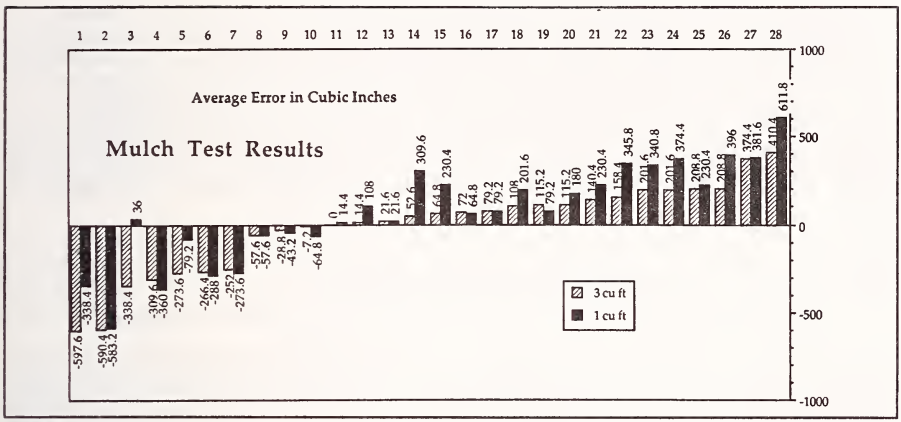


Figure 4

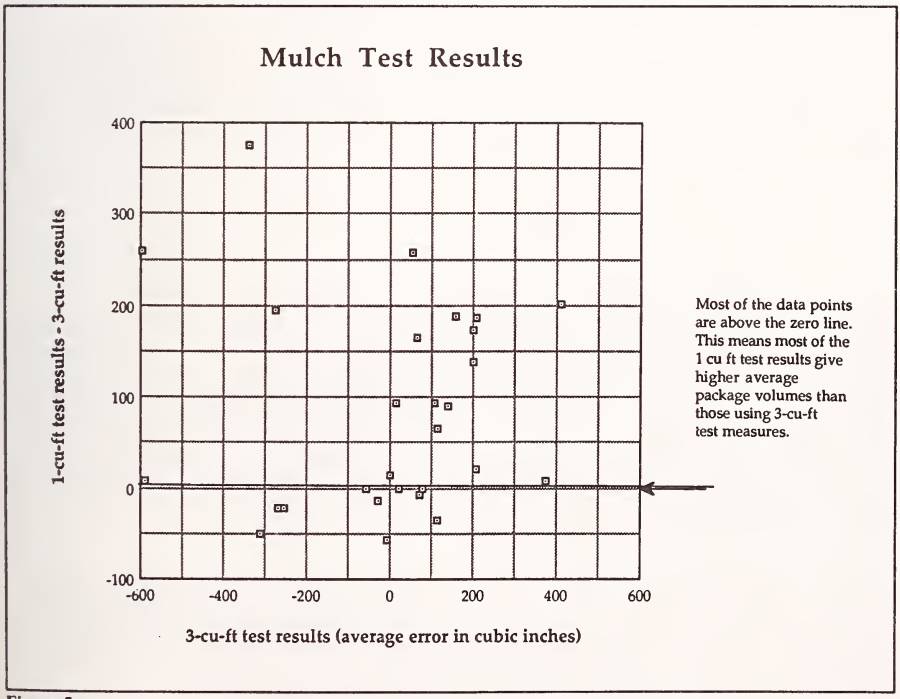


Figure 5

The Committee is convinced that the cost of switching to a 1-cu-ft measure far outweighs the benefits. The additional time to test the packages is most significant. Weights and measures officials said that the additional time and clean-up necessary when using a 1-cubic-foot measure made fewer tests possible in a given work day. As can be noted from the data, 32% of the lots tested failed to comply with the net volume requirements; this means weights and measures officials should be testing more of this product, not less. If all packers are now using the 3-cu-ft measure to calibrate their filling machines, there should not be any significant problem. In fact, the packaging industry would share the same problems experienced by the testing official with the 1-cu-ft measure. One weights and measures official said "It's difficult enough to get [industry] to make checks in a three cu. ft. test measure." Therefore, the Committee recommends no change to the test measure for package testing mulch.

240-4 I Polyethylene/Test Methods for Bags

(This is an information item and was adopted when the report as a whole was ratified.)

This carry-over item was Item 240-4C in the Report of the 73rd NCWM, 1988. The Committee was asked to recommend test procedures for use by the industry when declaring the capacity of bags and by weights and measures officials when test the capacity, since a capacity statement is required. (See the Uniform Regulation for the Method of Sale of Commodities, Sections 2.12.2.2. and 2.12.2.3. and the Uniform Packaging and Labeling Regulation, Section 10.8.2.)

The Committee was provided a draft test procedure by an industry representative. This procedure is very straightforward and measures the usable capacity of a bag by determining how much vermiculite (a very light particulate material) a large bag will hold and how much water a small bag will hold. The Committee planned to recommend that these test methods be incorporated into Handbook 133 for bag capacity. Several comments were received before the Annual Meeting that vermiculite is a test product that should be improved upon; it is dangerous to the inspector unless he/she wears a dust mask (recommended in the test procedure) and it breaks up too much in use and does not reliably hold its volume. In addition, the method tests for tie-off volume only; it does not test the capacity of bags labeled "fits x-gallon can." Therefore, the Committee recommends carrying this item over. The methods are printed in Appendix C.

240-5A I Moisture Loss for Ice-Packed Poultry and Other Meat and Poultry Items

(This is an information item and was adopted when the report as a whole was ratified.)

The Task Force on Commodity Requirements completed its work at the 73rd Annual Meeting. Ongoing efforts to refine test methods and define specific approaches for different commodities subject to moisture loss were left to the Laws and Regulations Committee and the Liaison Committee. The Task Force recommended that the Committee take up the issue of moisture-loss for ice-packed poultry shipped in bulk for repackaging by retail stores. Weights and measures agencies have repeatedly found gross shortages in bulk shipments of ice-packed poultry and have been frustrated in their efforts to decrease the occurrences of shortages. The Task Force was unable within the time allotted to it to design a data collection study that would shed light on the amounts of shortages that are caused by the loss of moisture during shipping. The U.S. Department of Agriculture (USDA), Food Safety and Inspection Service, has volunteered its help in collecting the necessary data. It may not be possible to simulate the unused tare weights in order to accommodate moisture loss and determine the net weights as in the case of retail consumer sized packages.

USDA has also proposed five more product categories (in addition to ice-packed poultry) for which to determine gray areas: (1) cured pork products (hams, shoulders, loins, and picnics); (2) cured beef products (corned beef, corned beef brisket, and tongues); (3) raw meat products (chopped beef, ground beef, hamburger, and beef patties); (4) ham patties, chopped ham, pressed ham, spiced ham and similar products; and (5) meat and poultry products that are cooked in vacuum packaging. Again, USDA has volunteered to obtain data for moisture loss by tracking product from selected Federal establishments. This recommendation and offer of assistance from USDA is evidence of the strong commitment USDA has to improve net weight compliance procedures and achieve uniformity in net weight compliance test results. The Committee will communicate with USDA, the American Meat Institute, and with the National Broiler Council to plan the next steps in achieving the above objectives.

240-5B I Moisture Loss for Pet Foods

(This is an information item and was adopted when the report as a whole was ratified.)

Representatives of the Pet Food Institute met with the L&R Committee and the Liaison Committee at the Interim Meetings to express their interest in proposing moisture loss procedures for dry pet food using the guidelines adopted by the Conference at the 73rd Annual Meeting and published in NCWM Publication 3, "Policy, Interpretations, and Guidelines."

The Pet Food Institute provided information concerning their dry pet food products, which are composed principally of ground grains (cereal grains and soybean products) with other ingredients added. Their moisture content typically ranges from 7 to 12% at the time of pack. They are packaged in paper or materials with greater moisture barriers that retard the speed of moisture loss, but not the final moisture content, which is 6 to 7% at the lowest.

The members of the Pet Food Institute manufacture 95% of the pet food in the U.S. Dry pet food products account for 54% of all retail pet food sales. Pet food ranked number 2 in the top 10 dry grocery food product groups in dollar sales in 1987.

The association will prepare its recommended test methods and propose them at a future meeting of the Conference. The Liaison Committee will then invite the Food and Drug Administration to work with the weights and measures community to determine the viability of their proposal.

240-5C I Moisture Loss for Pasta

(This is an information item and was adopted when the report as a whole was ratified.)

Representatives from the National Pasta Association met with the Liaison and L&R Committees at the Interim Meetings to express their interest in proposing moisture loss procedures using the guidelines adopted by the Conference at the 73rd Annual Meeting and published in NCWM Publication 3, "Policy, Interpretations, and Guidelines."

The membership of the National Pasta Association manufactures 80% of the pasta sold in the U.S. There are now only five major domestic manufacturers. Imported pasta constitutes 8% of the U.S. pasta market. All pasta is comprised of the same ingredients (semolina - or durum wheat - and water) and derives its name (spaghetti, rigatoni, etc.) from the final shape. Pasta is packaged either in paperboard boxes, in which the product takes 2 to 3 months to dry to its final moisture content, or in flexible bags, which lose moisture more slowly. All U.S. manufacturers make moisture tests on the final product at least every 2 hours when the packaging line is running just before product is packaged. The Association reported that it had submitted a moisture loss study to the Food and Drug Administration several years ago when FDA solicited information from industry concerning appropriate moisture loss allowances. They provided this same information to the L&R and Liaison Committees. It is available upon request. The Association will submit its proposed test methods in the future. This meeting was intended to familiarize the weights and measures regulatory officials with the product and in-plant controls used in the industry.

Kendrick J. Simila, Oregon, Chairman
Fred Clem, Columbus, Ohio (appointed to Mr. Rosenthal's remaining term)
Sidney A. Colbrook, Illinois
Allan M. Nelson, Connecticut
Stuart Rosenthal, New York (resigned before the Annual Meeting)
N. David Smith, North Carolina

Carroll S. Brickenkamp, NIST, Technical Advisor

Committee on Laws and Regulations

Appendix A

PROPOSED REVISION OF UNIFORM WEIGHMASTER LAW

SECTION 1. PURPOSE

This Act licenses and regulates public weighmasters in order to ensure accurate measurements by disinterested third parties to a transaction.

SECTION 2. SCOPE

This Act establishes a registration, licensing, and enforcement program; provides authority for license fee collection; and empowers the state to promulgate regulations as needed to carry out the provisions of the Act. It provides for optional or voluntary licensing when the employing organization or other organizations require it as part of the condition for employment. It also provides for civil and criminal penalties.

SECTION ~~1~~3. DEFINITIONS.

When used in this Act:

3.1. PUBLIC WEIGHING means the weighing, measuring, or counting, upon request, of vehicles, property, produce, commodities, or articles other than those that the weigher or his/her employer, if any, is either buying or selling.

3.2. PUBLIC WEIGHMASTER means any person who shall perform public weighing as defined in 3.1.

~~1.1 LICENSED PUBLIC WEIGHMASTER -- The term "licensed public weighmaster" shall mean and refer to a natural person licensed under the provisions of this Act.~~

~~1.2~~ 3.3. VEHICLE ~~-- The term "vehicle" shall~~ means any device except railroad freight cars in, upon, or by which any property, produce, commodity, or article is or may be transported or drawn.

~~1.3~~ 3.4. DIRECTOR ~~-- The term "director"~~ means the _____ of the Department of _____.

SECTION ~~2~~4. ENFORCING OFFICER: RULES AND REGULATIONS

The director is authorized to enforce the provisions of this Act and shall issue from time to time reasonable regulations for the enforcement of this Act, which regulations shall have the force and effect of law. The director may adopt rules that include, but are not limited to, determining the qualifications of the applicant for a license as a public weighmaster; renewal or refusal of a license; period of license validity; measurement practices that must be followed, including the measurement or recording of tare; the required information to be submitted with or as part of a certificate; the period of recordkeeping.

SECTION ~~3~~ 5. QUALIFICATIONS FOR WEIGHMASTER

A ~~citizen of the United States or a~~ person ~~who has declared his or her intention of becoming such a citizen, who is a resident of the State of _____, not less than 21 years of age, of good moral character,~~ who has the ability to weigh or measure accurately, ~~and~~ to make correct ~~weight~~ certificates, possesses such other qualifications as required by regulation, and who has received from the director a license as a ~~licensed~~ public weighmaster, shall be ~~styled and~~ authorized to act as a ~~licensed~~ public weighmaster.

SECTION ~~4~~ 6. LICENSE APPLICATION

An application for a license as a ~~licensed~~ public weighmaster shall be made upon a form provided by the director and the application shall furnish evidence that the applicant has the qualifications required by Section ~~3~~ 5 of this Act and regulations promulgated under the Act.

SECTION ~~5~~ 7. EVALUATION OF QUALIFICATIONS OF APPLICANTS: RECORDS

~~The director may adopt rules for determining the qualifications of the applicant for a license as a licensed public weighmaster.~~ The director may pass upon the qualifications of the applicant upon the basis of the information supplied in the application, and such other supplementary information as may be required, may examine such applicant ~~orally or in writing, or both,~~ for the purpose of determining his or her qualifications. The director shall grant licenses as ~~licensed~~ public weighmasters to such applicants as may be found to possess the qualifications required by Section ~~3~~ 5 of this Act. The director shall keep a record of all such applications and of all licenses issued thereon.

SECTION ~~6~~ 8. LICENSE FEES

The director shall have the authority to set fees for the administration of the licensing program. Before the issuance of any license as a ~~licensed~~ public weighmaster, or any renewal thereof, the applicant shall pay to the director a fee of $____ for the purposes of administering and effectively enforcing the provisions of this Act. ~~Such fees shall be deposited with the State Treasurer to be credited to a fund to be used by the director for the administration of this Act.~~

~~SECTION 7. LIMITED LICENSES~~

~~The director may, upon request and without charge, issue a limited license as a licensed public weighmaster to any qualified officer or employee of a city or county of this State or of a State commission, board, institution, or agency, authorizing such officer or employee to act as a licensed public weighmaster only within the scope of his official employment in the case of an officer or employee of a city or county or only for and on behalf of the State commission, board, institution, or agency in the case of an officer or employee thereof.~~

SECTION ~~8~~ 9. LICENSES: PERIOD, RENEWAL

Each license as ~~licensed~~ public weighmaster shall be issued for a period to expire as established by the director. ~~on the thirty-first day of December of the calendar year for which it is issued. Provided, That any such license shall be valid through the thirty-first day of January of the next ensuing calendar year or until issuance of the renewal license, whichever event first occurs, if the holder thereof shall have filed a renewal application with the director on or before the fifteenth day of December of the year for which the current license was issued: And provided further, That any license issued on or after the effective date of this Act and on or before the thirty-first day of December 19__, shall be issued to expire on the thirty-first day of December of the next ensuing calendar year. Renewal applications shall be in such form as the director shall prescribe.~~

~~SECTION 9. LICENSED WEIGHMASTER: OATH, SEAL~~

~~Each licensed public weighmaster shall, before entering upon his or her duties, make oath to execute faithfully his or her duties. The issuance of a license as licensed public weighmaster shall not obligate the State to pay to the licensee any compensation for his or her services as a licensed public weighmaster. Each licensed public weighmaster shall, at his or her own expense, provide himself or herself with an impression seal. His or her name and the word(s) (insert name of State) shall be inscribed around the outer margin of the seal and the words "licensed public weighmaster" shall appear in the center thereof. The seal shall be impressed upon each weight certificate issued by a licensed public weighmaster.~~

SECTION 10. ~~WEIGHT~~ CERTIFICATE: REQUIRED ENTRIES

The director shall prescribe the form of ~~weight~~ certificate to be used by a ~~licensed~~ public weighmaster. The ~~weight~~ certificate ~~shall~~ may include, but is not limited to, the following information:

(a) The name and license number of the public weighmaster
(b) The kind of commodity weighed, measured or counted
(c) The name of the owner, agent or consignee of the commodity
(d) The name of the recipient of the commodity, if applicable
(e) The date the certificate is issued
(f) The consecutive number of the certificate
(g) The identification, including the identification number, if any, of the carrier transporting the commodity, and the identification number or license number of the vehicle
(h) Such other information as may be necessary to distinguish or identify the commodity from a like kind.
(i) The number of units of the commodity, if applicable
(j) The measure of the commodity, if applicable
(k) The weight of the commodity and the vehicle or container (if applicable) broken down as follows:
    (1) The gross weight of the commodity and the vehicle or container thereof;
    (2) The tare weight of the unladened vehicle or container; or
    (3) Both the gross and tare weight and the resultant net weight of the commodity
(l) Signature of public weighmaster who determined the weight, measure, or count.

~~state the date of issuance, the kind of property, produce, commodity, or article weighed, the name of the declared owner or agent of the owner or of the consignee of the material weighed, the accurate weight of the material weighed, the means by which the material was being transported at the time it was weighed, and such other available information as may be necessary to distinguish or identify the property, produce, commodity, or article from others of like kind.~~ Such ~~weight~~ certificate, when so made and properly signed and sealed, shall be prima facie evidence of the accuracy of the ~~weights~~ measurements shown.

SECTION 11. ~~WEIGHT~~ CERTIFICATE: EXECUTION, REQUIREMENTS

A ~~licensed~~ public weighmaster shall not enter on a ~~weight~~ certificate issued by him or her any ~~weight~~ measurement values but such as he or she has personally determined, and shall make no entries on a ~~weight~~ certificate issued by some other person. A ~~weight~~ certificate shall be so prepared as to show clearly that ~~weight or weights~~ measurements were actually determined.

If the certificate form provides for the entry of gross, tare, and net weights, in any case in which only the gross, the tare, or the net weight is determined by the weighmaster, he or she shall strike through or otherwise cancel the printed entries for the weights not determined or computed. If gross and tare weights are shown on a weight certificate and both of these were not determined on the same scale and on the day for which the certificate is dated, the weighmaster shall identify on the certificate the scale used for determining each such weight and the date of each such determination.

SECTION 12. ~~SCALE~~ MEASUREMENT PRACTICES & EQUIPMENT USED: TYPE, TEST

When making a ~~weight determination~~ measurement as provided for by this Act, a ~~licensed~~ public weighmaster shall use measurement practices and equipment in accordance with ~~a weighing device that is of a type~~, all requirements of the latest edition of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices," ~~suitable for the weighing of the amount and kind of material to be weighed and, that has been~~ All measuring equipment must be examined, tested and approved for use by a weights and measures officer of this State. ~~within a period of 12 months immediately preceding the date of the weighing.~~

SECTION 13. ~~SCALE USED: CAPACITY, PLATFORM SIZE,~~ ONE-DRAFT WEIGHING

A ~~licensed~~ public weighmaster shall not weigh a vehicle, or combination of vehicles, when part of the vehicle or connected combination, is not resting fully, completely, and as one entire unit on the scale. ~~use any scale to weigh a load the value of which exceeds the nominal or rated capacity of the scale. When the gross or tare weight of any vehicle or combination of vehicles is to be determined, the weighing shall be performed upon a scale having a platform of sufficient size to accommodate such vehicle or combination of vehicles fully, completely, and as one entire unit. If a combination of vehicles must be broken into separate units in order to be weighed as prescribed herein, each such separate unit shall be entirely disconnected before weighing and a separate weight certificate shall be issued for each such separate unit.~~

When weighing a combination of vehicles that will not rest fully, completely, and as one complete unit on the scale platform, the combination shall be disconnected and weighed separately. The weights so taken may be combined for the purpose of issuing a single certificate, provided that the certificate indicates that the total represents a combination of single draft weighings.

SECTION 14. COPIES OF ~~WEIGHT~~ CERTIFICATES

A ~~licensed~~ public weighmaster shall keep and preserve for the ~~at least one year, or for such longer~~ period ~~as may be~~ specified in the regulations authorized to be issued for the enforcement of this Act, a legible ~~carbon~~ copy of each ~~weight~~ certificate issued by him or her, which copies shall be open at all reasonable times for inspection by any weights and measures officer of this State.

SECTION 15. RECIPROCAL ACCEPTANCE OF ~~WEIGHT~~ CERTIFICATES

Whenever in any other State that licenses public weighmasters, there is statutory authority for the recognition and acceptance of the ~~weight~~ certificates issued by ~~licensed~~ weighmasters of this State, the director of this State is authorized to recognize and accept the ~~weight~~ certificates of such other State.

SECTION 16. OPTIONAL LICENSING

The following persons shall not be required, but shall be permitted, to obtain licenses as ~~licensed~~ public weighmasters: (1) a law enforcement or weights and measures officer, or other qualified employee of a state, city, or county agency or institution when acting within the scope of his official duties; (2) a person weighing property, produce, commodities, or articles that he or his employer, if any, is either buying or selling; and (3) a person weighing property, produce, commodities, or articles in conformity with the requirements of Federal statutes or the statutes of this State relative to warehousemen or processors.

SECTION 17. PROHIBITED ACTS

~~No person shall assume the title of licensed public weighmaster, or any title of similar import, perform the duties or acts to be performed by a licensed public weighmaster under this Act, hold himself or herself out as a licensed public weighmaster, issue any weight certificate, ticket, memorandum, or statement for which a fee is charged, or engage in full-time or part-time business of public weighing, unless he or she holds a valid license as a licensed public weighmaster. "Public weighing," as used in this section, shall mean the weighing for any person, upon request, of property, produce, commodities, or articles other than those that the weigher or his employer, if any, is either buying or selling.~~

It is a prohibited act for any person to:

(a) use any device for certification purposes that does not meet Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices;"
(b) operate devices in a manner not in accordance with applicable Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices" requirements;
(c) use or have in his possession a device which has been altered to facilitate fraud;
(d) falsely certify any gross, tare, or net weight or measure required by the Act to be on the certificate;
(e) ~~Any licensed public weighmaster who~~ falsify~~ies~~ a ~~weight~~ certificate;
(f) issue a certificate simulating the certificate in the Act;
(g) refuse without cause to weigh or measure any article or thing which it is his duty to weigh or measure, or refuse to state in any certificate anything required to be therein;
(h) hinder or obstruct in any way the director or his authorized agent in the performance of the director's official duties under this act;
(i) assume the title of public weighmaster, or any title of similar import, without a valid license;
(j) perform the duties or acts to be performed by a public weighmaster without a valid license;
(k) hold himself or herself out as a public weighmaster without a valid license;
(l) issue any certificate, ticket, memorandum, or statement for which a fee is charged without a valid license;
(m) engage in full-time or part-time business of measuring for hire without a valid license;
(n) ~~who~~ delegate~~s~~ his authority to any person not licensed as a ~~licensed~~ public weighmaster; ~~who prescals a weight certificate with his official seal before performing the act of weighing,~~
(o) request a public weighmaster to weigh, measure, or count any vehicle, property, produce, commodity, or article falsely or incorrectly;
(p) request a false or incorrect certificate;
(q) violate any provision of this Act or any regulations promulgated under it;
(r) violate any provision of this Act or any regulation promulgated under this Act for which a specific penalty has not been prescribed.

SECTION 18. SUSPENSION AND REVOCATION OF LICENSE

The director is authorized to suspend or revoke the license of any ~~licensed~~ public weighmaster (1) when he or she is satisfied, after a hearing upon 10 days' notice to the licensee, that the said licensee has violated any provision of this Act or of any valid regulation of the director affecting ~~licensed~~ public weighmasters, or (2) when a ~~licensed~~ public weighmaster has been convicted in any court of competent jurisdiction of violating any provision of this Act or of any regulation issued under authority of this Act, or (3) convicted of any felony.

SECTION 19 . ~~OFFENSES AND~~ CIVIL PENALTIES

Any person who by him/herself, by his/her servant or agent, or as the servant or agent of another person commits any of the acts enumerated in Section 17 may be subject to a civil penalty.

19.1. Civil Action. A civil action may be brought by the Director in any court of competent jurisdiction to recover a civil penalty of

(a) not less than $ ___ nor more than $ ___ for a first violation,

(b) not less than $ nor more than $ for a second violation within two years from the date of the first violation, and

(c) not less than $ nor more than $ for a third violation within two years from the date of the first violation.

19.2. Administrative Hearing. The Director or his/her designee shall be authorized to conduct an administrative hearing and, upon notice and an opportunity to be heard, may assess a civil penalty of

(a) not less than $ nor more than $ for a first violation,

(b) not less than $ nor more than $ for a second violation within two years from the date of the first violation, and

(c) not less than $ nor more than $ for a third violation within two years from the date of the first violation

upon a finding of a violation of any provision of this Act.

The final decision of the Director shall be subject to appropriate judicial review.

Any civil penalty collected under this Act shall be transmitted to the state treasurer, who shall credit the same to the fund.

~~Any person who requests a licensed public weighmaster to weigh any property, produce, commodity, or article falsely or incorrectly, or who requests a false or incorrect weight certificate, or any person who issued a weight certificate simulating the weight certificate prescribed in this Act and who is not a licensed public weighmaster, shall be guilty of a misdemeanor and upon conviction for the first offense shall be punished by a fine in any sum not less than twenty-five dollars or more than one hundred dollars; and upon a second or subsequent conviction such person shall be punished by a fine in any sum not less than one hundred dollars or more than five hundred dollars, or by imprisonment for not less than thirty days or more than ninety days, or by both such fine and imprisonment.~~

SECTION 20. ~~OFFENSES AND~~ CRIMINAL PENALTIES: ~~MALFEASANCE~~

~~Any licensed public weighmaster who falsifies a weight certificate, or who delegates his authority to any person not licensed as a licensed public weighmaster, or who presents a weight certificate with his official seal before performing the act of weighing, shall be guilty of a misdemeanor and upon conviction shall be punished by a fine in any sum not less than fifty dollars or more than five hundred dollars, or by imprisonment for not less than thirty days or more than ninety days, or by both such fine and imprisonment.~~

20.1. Misdemeanor. Any person who by him/herself by his/her servant or agent, or as the servant or agent of another person commits any of the acts enumerated in Section 17 or violates any other provision of this act shall ~~requests a licensed public weighmaster to weigh any property, produce, commodity, or article falsely or incorrectly, or who requests a false or incorrect weight certificate, or any person who issued a weight certificate simulating the weight certificate prescribed in this Act and who is not a licensed public weighmaster, shall~~ be guilty of a Class misdemeanor and upon conviction shall be punished by a fine ~~in any sum~~ not less than $ nor more than $ ~~fifty dollars $ or more than five hundred dollars~~ or by imprisonment for not less than nor more than ~~thirty days or more than ninety days,~~ or by both such fine and imprisonment.

20.2. Felony. Any person who by him/herself by his/her servant or agent, or as the servant or agent of another person intentionally commits any of the acts enumerated in Section 17 or repeatedly violates any other provision of this act shall be guilty of a Class felony and upon conviction shall be punished by a fine not less than $ and/or by imprisonment for not less than nor more than or more than .

~~SECTION 21. OFFENSES AND PENALTIES. GENERAL~~

~~Any person who violates any provision of this Act or any rule or regulation promulgated pursuant thereto for which no specific penalty has been provided shall be guilty of a misdemeanor and upon conviction shall be punished by a fine in any amount not less than twenty-five dollars or more than one hundred dollars.~~

SECTION 21. RESTRAINING ORDER AND INJUNCTION

The director is authorized to apply to any court of competent jurisdiction for a restraining order, or a temporary or permanent injunction restraining any person from violating any provision of this Act.

SECTION 22. VALIDITY OF PROSECUTIONS

Prosecutions for violation of any provision of this Act are declared to be valid and proper notwithstanding the existence of any other valid general or specific Act of this State dealing with matters that may be the same as or similar to those covered by this Act.

SECTION 23. SEPARABILITY PROVISION

If any provision of this Act is declared unconstitutional, or the applicability thereof to any person or circumstance is held invalid, the constitutionality of the remainder of the Act and the applicability thereof to other persons and circumstances shall not be affected thereby.

SECTION 24. REPEAL OF CONFLICTING LAWS

All laws and parts of laws contrary to or inconsistent with the provisions of this Act, and specifically _____ _____, are repealed insofar as they might operate in the future; but as to offenses committed, liabilities incurred, and claims now existing thereunder, the existing law shall remain in full force and effect.

SECTION 25. CITATION

This Act may be cited as the "Public Weighmaster Act of _____."

SECTION 26. EFFECTIVE DATE

This Act shall become effective on _____.

Appendix B

4.16. Fresh Oysters Labeled by Volume

Packaged fresh oysters removed from the shell are required to be labeled by volume, for example, "8 fl oz" or "1 gallon." In addition, the maximum amount of permitted free liquid is 15% by weight. Testing the quantity of contents of fresh oysters therefore requires a determination of total volume, total weight of solids and liquid, and the weight of the free liquid only.

Ordinarily, the contents of a package labeled by fluid volume can be poured into an inspector's field flask to determine the fluid volume (with an appropriate correction given for clingage remaining in the package). This can be done when testing gallon-size containers or larger. However, oysters will not fit through necks of the smaller field flasks. Therefore, the procedure below determines the package net volume by measuring the volume of water delivered to the package container when filled to the same level as the original oyster contents. Determining the amount of free liquid requires draining the oysters and weighing the free liquid drained away. Worksheets are provided with the following method.

Equipment

Small-capacity package testing scale
Depth gauge
Bubble level
Field flasks and graduate
No. 8, 8-inch U.S. Standard sieve and receiving pan for small packages; 12-in sieve for 1-gallon containers
Rubber spatula
Stopwatch

Procedure

Every package in the sample must be opened. The following steps apply to each package:

1. Gross weigh the package. Record the weight on a worksheet.

2. Set the package container on a level surface. Open container. Use depth gauge to determine the level of fill. Lock depth gauge. Mark location of gauge on the package.

3. Weigh a dry 8-inch or 12-inch receiving pan. Record the weight in box e on the worksheet. Set sieve over receiving pan.

4. Empty contents from package container onto sieve. Do not shake. Tip the sieve slightly to help it drain. Time drain for 2 minutes. Remove sieve with oysters. A mucous is often associated with the oysters and will not go through the sieve. This is natural. Do not force the mucous through the sieve.

5. Weigh the receiving pan and liquid. Record the weight in box d. Subtract the weight of the dry receiving pan from the weight of pan and liquid to obtain the weight of free liquid. Record the weight in box f.

6. Wash and wipe the package container (as necessary) and weigh it dry. Record the weight in box b. This is the tare weight of the package. Subtract the tare weight recorded in box b from the gross weight recorded in box a to obtain the total weight of the oysters and liquid. Record this total weight in box c.

7. Determine percent of free liquid by weight as follows:

$$\text{Percent of free liquid by weight} = \frac{\text{weight of free liquid}}{\text{weight of oysters + liquid}} \times 100$$

Record percentage in box g.

8. Set up depth gauge on dry package container exactly as in step 2.

9. Deliver water from flasks and graduate as needed to re-establish the level of fill in step 2. Record all volumes in part II of the worksheet in boxes h through k. Sum all volumes. This is the actual net volume for that package.[4]

[4]Some containers will only hold the declared volume when filled brim full; they may have been designed for ice-cream or similar products, rather than for oysters. If a shortage is found in the net volume (per step 9), determine whether the container being used to package the product will only contain the volume if filled to the brim. Under such circumstance, the package net volumes will all be short measure because the container cannot be filled to the brim with a solid and liquid mixture such as oysters. A minimum head space is needed (space between the liquid level and the lid) in order to get the lid onto the container without losing any liquid.

Worksheet for Determining Net Volume of Oysters and Percent of Free Liquid

I. Amount of Free Liquid

a. Package gross weight	
b. Package tare weight	
c. Weight of oysters and liquid = a - b =	
d. Weight of receiving pan and drained liquid	
e. Weight of dry receiving pan	
f. Weight of free liquid = d - e =	
g. Percentage of free liquid = $\frac{f}{c} \times 100 =$	

II. Net Volume

Establish the Level of Fill of package containing oysters using depth gage.
Reestablish the Level of Fill using water and depth gage set to same depth as oyster liquid level.
Record below the amount(s) of water needed to reestablish liquid level.

h. Flask size	
i. Flask size	
j. Graduate	
k. Graduate	
l. TOTAL VOLUME = Sum all volumes recorded above =	

Appendix C

4.17. Capacity of Plastic Trash and Food Bags and Similar Containers

Safety

1. Review the techniques for proper lifting.

2. Wear a dust mask and filter to avoid breathing the dust from vermiculite.

Equipment

For large bags:

1. 2000 mL beaker or other suitable container of known capacity.

2. Vermiculite.

   Vermiculite is the preferred material for bags because it is a stable, non-combustible, and light-weight material.

For small food storage bags:

1. 1000 mL graduated cylinder for measuring water.

2. Water.

3. Jar or box similar in dimensions to bag to support bag while filling it.

Procedure:

1. Select one bag from the sample. The bag must be free from holes, cuts, ragged edges, or other visible defects.

For large bags:

4a. Fill the bag to the top with vermiculite.

4b. The bag should be tied off using the tie, drawstring, or other closure provided in the package. The unused bag length (above the twisted closure that closes the top end) shall be at least 1 in and no more than 3 in. This does not apply to press-to-close, drawstring, or handle-tie closures, which are to be closed per instructions on the package.

4c. Measure the vermiculite from the bag in 2000 mL portions. The total capacity of the bag is reported in gallons. To convert mL to gallons, divide the capacity in mL by 3785.

For small food storage bags:

4. Fill the graduated cylinder with water, then add water to the bag. If a tie-off is required to close the bag, fasten the closure to the bag before completing the filling operation. If the bag presses to close, close it almost completely before completing the fill.

Final Report of the Specifications and Tolerances Committee

Ross J. Andersen, Chairman
Metrologist, Bureau of Weights and Measures
State of New York

REFERENCE
KEY NO.

300 Introduction

This is the final report of the Committee on Specifications and Tolerances for the 74th Annual Meeting of the National Conference on Weights and Measures. This report is based upon its Interim Report (NCWM Publication 16), the Addendum Sheets at the Annual Meeting, and the actions taken by the membership at the Annual Meeting.

Table A identifies the items in the Report by Reference Key Number, Item Title, and Page Number. The item numbers are those assigned in the Interim Meeting Agenda. Voting items are identified in **bold face print**, as well as by the suffix "**V.**" Information items are identified by the suffix "**I.**" Withdrawn items are identified by the suffix "**W.**" Items marked with a "**W**" generally will be referred back to the regional weights and measures associations because they either need additional development, analysis, and input, or did not have sufficient support of the Committee to bring them before the NCWM. Any new items were assigned the next number in sequence to maintain a correlation between the Interim Meeting Agenda and the Report.

The attached Report contains many recommendations to revise or amend National Bureau of Standards (NBS) Handbook 44, 1989 Edition, "Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices." Proposed revisions to the handbook are shown in **bold face print** by ~~crossing out~~ what is to be deleted, and underlining what is to be added. Requirements that are proposed to be nonretroactive are printed in *italics*. Entirely new paragraphs or sections proposed for addition to the handbook are designated as such and shown in **bold face print**.1

Table A
Index to Reference Key Items

Table A (Continued)

Table A (Continued)

Order of Presentation

The report was presented to the membership as follows:

1. The Consent Calendar was presented. Item 331-1 was requested to be removed from the Consent Calendar and made a separate voting item. The Consent Calendar was then adopted.

2. The separate voting items were then presented.

3. The report in its entirety was then ratified.

Table B
Voting Results

Reference Key No.	House of State Representatives		House of Delegates		Results
	Yes	No	Yes	No	
Consent Calendar	46	1	69	0	Passed
310-5	41	2	67	5	Passed
310-6	27	20	54	18	Passed

Table B (Continued)
Voting Results

Reference Key No.	House of State Representatives		House of Delegates		Results
	Yes	No	Yes	No	
320-4	48	0	71	0	Passed
320-7	46	2	66	0	Passed
320-320-12	43	2	63	3	Passed
320-13	2	44	3	58	Failed
320-14	Motion to table this item.				
	30	16	38	28	Tabled
320-15	47	0	73	0	Passed
330-1A	Part (b) of UR.3.3. was removed for a separate vote as Item 330-1A (1). Vote taken on the remainder of 330-1A.				
	36	5	58	3	Passed
330-1A (1)	14	30	12	55	Failed
330-1B	46	1	60	0	Passed
330-4	44	3	52	7	Passed
331-1	45	1	59	0	Passed
331-3	44	2	64	0	Passed
335-1	44	2	66	0	Passed
Entire Report	48	0	60	0	Passed

Details of all Items
(In the order they appear in Table A)

310 General Code

310-1 VC G-A.6. Nonretroactive Requirements and the Definition for Nonretroactive

(This item was adopted as part of the consent calendar.)

Differences in language in G-A.6. and in the definition of nonretroactive could be confusing. The specific categories of devices to which the nonretroactive requirements apply must be deduced by reading both G-A.6. and the definition.

The Committee recommends that G-A.6. be editorially changed to identify those specific devices to which the nonretroactive requirements apply. The Committee emphasizes that the revision does not change the range of devices to which the nonretroactive requirements apply; this is a clarification and combining of G-A.6. and the definition.

The Committee recommends that G-A.6. be amended to read:

> **G-A.6. NONRETROACTIVE REQUIREMENTS. - "Nonretroactive" requirements are enforceable after the effective date for: ~~and only with respect to: devices that are manufactured in or brought into the State after that date.~~**
>
> **1. devices manufactured within a State after the effective date;**
>
> **2. both new and used devices brought into a State after the effective date; and**
>
> **3. devices that have been used in noncommercial applications and are then being placed into commercial use after the effective date.**
>
> **Nonretroactive requirements are not enforceable with respect to devices that are in commercial service in the State as of the effective date or to new equipment in the stock of a manufacturer or a dealer in the State as of the effective date.** ***(Nonretroactive requirements are printed in italic type.)***

For ease of reference, the Committee recommends that the current definition of "nonretroactive" be eliminated and the information in G-A.6. be repeated in the definition as follows:

> **nonretroactive. "Nonretroactive" requirements are enforceable after the effective date for:**
>
> **1. devices manufactured within a State after the effective date;**
>
> **2. both new and used devices brought into a State after the effective date; and**
>
> **3. devices that have been used in noncommercial applications and are then being placed into commercial use after the effective date.**
>
> **Nonretroactive requirements are not enforceable with respect to devices that are in commercial service in the State as of the effective date or to new equipment in the stock of a manufacturer or a dealer in the State as of the effective date.** ***(Nonretroactive requirements are printed in italic type.)***

310-2 I G-S.1. Identification; Certificate of Conformance Number

(This is an information item and was adopted when the report as a whole was ratified.)

Two proposals, Items 310-2 and 310-3, were submitted with the objective of requiring that each device be marked with the NTEP (National Type Evaluation Program) Certificate of Conformance number issued to each device and the year of manufacture of the device. They would also address the need expressed by some weights and measures officials for a marking that clearly distinguishes devices that are designed to comply with Handbook 44 from those that are "not legal for trade." (See item 320-2.) The marking of the NTEP Certificate number would be one way to distinguish among these devices. Weights and measures officials would like to know, at the time of field inspection, whether or not a device has received a Certificate of Conformance. The Certificate number would inform the weights and measures official and prospective purchasers of devices that a device has undergone NTEP type evaluation.

A rather large number of marking requirements have been added to Handbook 44 since 1985, particularly for scales marked with an accuracy class. The requirements for scales were added to provide both scale distributors/installers and enforcement officials with the information needed to ensure that (1) a device is properly installed with respect to the number of scale divisions and (2) that the complete scale complies with the influence factor requirements within the parameters for which the scale or its main elements and load cells were tested. The amount of information under various marking requirements, particularly for scales, has been questioned. There has been a suggestion that some information could be omitted if the Certificate of Conformance number were marked on the device.

The Committee believes that the subject should be reviewed before more marking requirements are adopted. The review should determine if new requirements might eliminate other marking requirements, and if a marking could clearly identity those devices that are designed to comply with Handbook 44 from those designed only for noncommercial applications. The Technical Committee of the Scale Manufacturers Association is reviewing the requirements and may suggest possible action to the S&T Committee. Consequently, the Committee does not recommend any action on this item.

310-3 W G-S.1. Identification; Year of Manufacture

(This item was withdrawn.)

This proposal would require the year of manufacture to be marked on a device to assist in the proper application of nonretroactive requirements. It was suggested that the year of manufacture be placed adjacent to the serial number, and that a uniform method of marking the date of manufacture be established, rather than permitting each manufacturer to use an individual company code. Several manufacturers already use date codes and support the use of different codes.

The Committee withdrew this item for the reasons given in Item 310-2.

310-4 W G-S.6. Marking, Operational Controls, Indications, and Features

(This item was withdrawn.)

This was information Item 310-1 in 1988. The suggestion was to change the language of G-S.6. to reflect interpretations that have been applied in type evaluation and to permit the use of some international symbols (from a draft international document) without defining the symbols in a legend.

There has been general support for the change to the language of G-S.6.; however, the responses from the regional associations indicate that this is a low priority item. There has been significant opposition to accepting the international symbols before the international community has formally accepted them. Consequently, the Committee has withdrawn this item.

310-5 V G-S.8. Provision for Sealing Electronic Adjustable Components

(This item was adopted.)

Expanding the Scope of G-S.8.

There appears to be general support by weights and measures officials to expand the scope of G-S.8. to include protection of device operation parameters that may affect the validity of measurements or the proper operation of selective device features. However, the proposal made in 1988, which required all metrological characteristics to be sealable, was too broad. Several representatives of the scale industry oppose the term "metrological characteristics" and suggest the term "metrological integrity" in its place. The Committee has incorporated this suggestion into its recommendation; however, this latter term has a very different meaning in the international community. The Committee would prefer a term other than "metrological integrity" to specify the functions, parameters, and features that must be sealed to help ensure the integrity of a transaction. The Committee has not yet found the specific language to identify those features to be sealed while excluding those for which sealing is not critical.

The primary purpose of a security seal is to provide evidence if someone has had access to the adjustment mechanism of the device since the last inspection or the last authorized adjustment. As discussed in the information item 310-2 in 1988, additional forms of security, specifically, electronic data trails, are available on electronic devices and provide the same information as (or better information than) a physical security seal. One possible approach is to require that a device retain in memory the dates for the last several (perhaps 10) adjustments and maintain a count of the number of times the calibration mode has been accessed. Another possible form of security is a non-resettable counter of the calibration operations, with or without the dates of adjustment.

The Committee believes that those features that can affect the validity of a measurement, along with the selection of the features and methods of operation, should be sealed. Examples of the features to be sealed are the parameters for the automatic zero-setting mechanism, width of zero, motion detection capability, the selection of measurement units when the selection is through an internal switch or programming set-up procedure, any adjustment for measurement accuracy, the gallon-to-liter conversion switch on retail motor-fuel dispensers or consoles, and the selection of the value of the quantity division. The parameters for motion detection include the settings for digital filtering, the motion detection setting, the display update rate, and the averaging time or number of readings for the display update when they affect the motion detection characteristics of a scale. Due to the opposition of putting a definition in Handbook 44 listing device features, functions, and operations to be sealed, the Committee is explaining its intent as to the types of characteristics that are to be sealed if the recommended change is adopted by the Conference. Further clarification of the device characteristics to be sealed will have to be provided through the type evaluation process and Technical Committee sectors as the issues arise.

Further explanation of the concept of an audit trail is necessary to indicate more clearly what the Committee thinks is acceptable when device operation can be changed through software. As a minimum:

1. a code or password is needed to access the part of the software that permits changes to the operating parameters, features, and accuracy adjustment;

2. the system must automatically maintain (even during an extended power failure) a count of the number of times the calibration and parameter selection software has been accessed; and

3. the device must be equipped with a means by which the enforcement official can easily access this information during an inspection of the device.

The Committee recommends that manufacturers include the automatic storage of the date and time during which the software has been accessed and provide for the entry of some identification of the individual who accessed the software. It is recommended that this information be retained for at least the last 10 entries to the software to provide a history of adjustment and to serve as a basis for determining if the adjustment capability is being abused. The Committee prefers that devices still be designed to require the breaking of a physical seal to gain access to a switch that would enable the software calibration and the selection of features and operating parameters.

The Scales Code requirement on the provision for sealing is comparable to the General Code requirement, but it provides an exemption for class I scales. This paragraph should be changed at the same time to provide consistency. Because the proposal provides for additional methods for sealing, but requires the sealing of more parameters, the proposed changes for 1989 are to be nonretroactive.

To eliminate confusion by retaining both the original nonretroactive requirements in G-S.8. and S.1.11., the Committee recommends that the current text in G-S.8. of the General Code and S.1.11. of the Scales Code be deleted and new text added as follows.

G-S.8. PROVISION FOR SEALING ELECTRONIC ADJUSTABLE COMPONENTS

~~*Provision shall be made for applying a security seal in a manner that requires the seal to be broken before an adjustment can be made to any electronic adjusting mechanism that affects the performance of the device.*~~
~~*[Nonretroactive as of January 1, 1986.]*~~

A device shall be designed with provision(s) for applying a security seal that must be broken, or for using other approved means of providing security (e.g., data change audit trail available at the time of inspection), before any change that affects the metrological integrity of the device can be made to any electronic mechanism.
[Nonretroactive as of January 1, 1990.]

S.1.11. PROVISION FOR SEALING ~~*ADJUSTABLE COMPONENTS ON ELECTRONIC DEVICES.*~~

~~*Except on Class I scales, provision shall be made for applying a security seal in a manner that requires the security seal to be broken before an adjustment can be made to any component affecting the performance of an electronic device.*~~
~~*[Nonretroactive as of January 1, 1979.]*~~

Except on Class I scales, a device shall be designed with provision(s) for applying a security seal that must be broken, or for using other approved means of providing security (e.g., data change audit trail available at the time of inspection), before any change that affects the metrological integrity of the device can be made to any electronic mechanism.
[Nonretroactive as of January 1, 1990.]

Further Review Recommended

Although the Committee recommends that the permitted methods of sealing be expanded to include electronically stored audit trails, the Committee believes that the justification for requiring a provision for sealing should be reviewed. The continuing trend to placing more device characteristics and selectable features in software rather than hardware and the increasing use of systems utilizing flexible software raises the question of whether or not sealing a device provides adequate control of device operation. Manufacturers change software as problems and requests for specific features arise. It is not realistic to submit every version of software to type evaluation. Although manufacturers appear to submit major revisions to software for evaluation, not all minor revisions are submitted. The inability to seal computers, which are being used in commercial applications in increasing numbers, limits the practical application of the provision for sealing requirement. One example is that the temperature compensating software used in many loading-rack meter applications cannot be sealed, but it certainly can affect the performance of the metering system. The Committee recommends that the regional weights and measures associations review the benefits of requiring

provision for sealing to determine if the concept has become outmoded in view of the increased use of computers and user-accessible software.

310-6 V G-T.1. Acceptance Tolerances

(This item was adopted.)

Acceptance tolerances are usually applied to devices undergoing type evaluation. These may be new devices submitted for laboratory evaluation; however, many devices must also undergo field evaluation and field permanence testing. They may have been installed and used for several months before the type evaluation is conducted. In these instances, the manufacturer usually tests and adjusts these devices within acceptance tolerance prior to the type evaluation testing. These devices have been required to be within acceptance tolerance throughout the permanence testing for type evaluation.

A proposal was received to amend G-T.1. to clearly indicate that acceptance tolerances apply to equipment undergoing type evaluation. Comments have been received from the industry suggesting that the time during which acceptance tolerances apply during type evaluation be limited to 30 days. The Committee decided against the 30-day limitation because some devices are installed for type evaluations in locations where they receive limited use. In these cases, the NTEP laboratories arrange with the device manufacturer to extend the time required for the field permanence test to offset the fact that the scale is receiving less than "normal" use. In some cases, the devices are installed at the manufacturer's plant and special arrangements must be made to establish regular use of the device during the permanence test. In other cases, the NTEP representatives are unable to return to a device within a 30-day period. If the second test takes place 35 days after the initial test, a device that is performing properly should not have shifted to the limit of the maintenance tolerance. On the other hand, the Committee appreciates the concern of the industry that acceptance tolerances may continue to be applied for an excessive amount of time after the initial test. If the NTEP representatives are unable to conduct the second set of performance tests within approximately 30 days and prior arrangements have not been made with the manufacturer to extend the test period, then NTEP should use judgement when analyzing the data and apply either acceptance or maintenance tolerances as determined to be appropriate.

To specifically recognize that acceptance tolerances are applicable during type evaluations, the Committee recommends that G-T.1. be amended to read:

G-T.1. ACCEPTANCE TOLERANCES. - Acceptance tolerances shall apply to ~~as follows~~:

(a) ~~to any~~ equipment ~~about to~~ being put into commercial use for the first time;

(b) ~~to~~ equipment that has been placed in commercial service within the preceding 30 days and is being officially tested for the first time;

(c) ~~to~~ equipment that has been returned to commercial service following official rejection for failure to conform to performance requirements and is being officially tested for the first time within 30 days after corrective service;

(d) ~~to~~ equipment that is being officially tested for the first time within 30 days after major reconditioning or overhaul; and

(e) equipment undergoing type evaluation.

310-7 W Separate General Code for Scales and Meters

(This item was withdrawn.)

A suggestion was made to explore the possibility of simplifying the language of the General Code and avoiding potential conflicts by splitting the General Code into two separate General Codes, one for weighing devices and one for measuring devices.

The Committee was not convinced that there were enough requirements applicable to scales but not to measuring devices, and vice versa, to justify splitting the General Code. Consequently, the Committee has withdrawn this item.

310-8 I Interpretation of G-UR.2.2. and G-UR.3.3.

(This is an information item and was adopted when the report as a whole was ratified.)

The Committee was requested to review the 1976 interpretation of the application of General Code paragraphs G-UR.2.2. and G-UR.3.3. and to issue an updated interpretation.

G-UR.2.2. requires that a device be installed such that "there is no obstruction between a primary indicating or recording element and the weighing or measuring element; otherwise there shall be convenient and permanently installed means for direct communication, oral or visual, between an individual located at a primary indicating or recording element and an individual located at the weighing or measuring element." The objective of the requirement is to make certain that the weighing or measuring process is proceeding properly. For example, in the case of a vehicle scale, the person at the indicating element must have complete information concerning the application of the load on the load-receiving element, such as whether or not all of the truck axles are scale-borne and whether or not the driver is on the truck. This requirement applies to BOTH direct and indirect sales applications; however, G-UR.3.3. must also be satisfied for direct sale applications. In direct sales applications (except for prescription scales), the primary indicating element must be positioned in such a manner "that its indications may be accurately read and the weighing or measuring operation may be observed from some reasonable customer position." In the case of a vehicle scale, if, in the normal weighing operation, the driver of a truck does not normally get out of the truck to go to where the primary indication is readily visible to the driver, then a remote customer display must be provided to the truck driver at the weighing element so that it is visible from a "reasonable customer position."

In summary, G-UR.2.2. applies to both direct and indirect sales; however, satisfying G-UR.2.2. is not sufficient for direct sale applications; G-UR.3.3. must also be satisfied along with any other Handbook 44 requirements that apply to the device and its application.

320 Scales Code

320-1 I S.2.3. Tare; Point-of-Sale Systems

(This is an information item and was adopted when the report as a whole was ratified.)

Two proposals involving tare taken through point-of-sale systems were part of this agenda item. One proposal was to require that the tare taken through a point-of-sale system be recorded on the receipt. The Committee does not support the recording of tare on the receipt, believing that the information would confuse consumers and be of very limited benefit. It is unlikely that the customer would be able to verify the accuracy of the tare weight. The recording of tare was introduced several years ago by a manufacturer of point-of-sale systems, but the feature was dropped on later systems due to customer confusion and the additional paper costs to equipment owners. The sale of bulk items by net weight is required by the weights and measures law, and Handbook 44 specifies that the net weight be recorded on the receipt.

The second proposal suggested that tare is taken for the tare associated with individually wrapped items purchased from bulk. The most efficient method of assuring that tare is taken for both the tare wrapping on individual items and the bag or container into which the bulk items are placed appears to require point-of-sale systems to take a fixed tare for the container and a percentage tare for the wrapping on individual items. Equipment with this capability does not appear to be available at this time. The Committee recommends that equipment manufacturers design this capability into equipment available for application to this method of sale. Until the equipment problems and the associated requirements of supermarket software used for management purposes are more fully addressed, the Committee is not willing to propose requiring the fixed and percentage tare capability on point-of-sale systems. Until further progress is made in this area, the Committee believes that

jurisdictions should enforce the existing net weight requirements when bulk items are not being sold on the basis of net weight.

320-2 W Marking Noncommercial Devices

(This item was withdrawn.)

A proposal was submitted to require that weighing and measuring devices that are not designed to meet Handbook 44 requirements be marked "Not Legal For Trade" or similar statement. This issue is repeatedly submitted to the Committee because noncommercial devices routinely appear in commercial applications. This is a chronic problem for weights and measures officials.

The Committee believes that a requirement to mark noncommercial devices as such would create a major enforcement problem. Many devices that are not intended for commercial use, such as rulers for school children, would not be marked "Not Legal For Trade" and would violate the requirement, but they do not now appear in commercial applications. The weights and measures law was changed recently to make it a violation to sell an incorrect device. The Committee believes that the adoption and enforcement of this portion of the weights and measures law will have a greater impact than requiring a marking on all devices not designed to Handbook 44 requirements. Consequently, the Committee has withdrawn this item.

320-3 I S.6.8. Weighing Elements and S.6.9. Indicating Elements; Not Permanently Attached

(This is an information item and was adopted when the report as a whole was ratified.)

Additional marking requirements were adopted in 1987 for weighing elements not permanently attached to indicating elements (S.6.8.). To clarify which weighing elements must carry this marking, the Technical Committee on National Type Evaluation - Weighing Industry Sector concluded that any time weighing and indicating elements can be "mixed and matched," then they should be considered not permanently attached. This conclusion means that dials and weighbeams are considered not permanently attached to the weighing element. On the other hand, when a weighing element and indicating element share a common enclosure or housing, then the two are considered to be permanently attached.

A definition of "not permanently attached" is needed, but the Committee has no proposal at this time. Some indicating elements process only digital information received from the weighing element, and their performance is not affected by temperature. However, it may not be apparent to an enforcement official or user which indicators have analog-to-digital converters and which process only digital information. The existence of "smart" printers complicates the situation because it is often not clear what information is processed by the printer and what by the indicating element. Suggestions for a clear definition of "not permanently attached" are encouraged.

320-4 V Location of Marking Information

(This item was adopted.)

A proposal was made to permit more flexibility in the location of the marking information required by G-S.1. as it applies to scales with a capacity of more than 2,000 lb. An exemption from the requirement that the information be "readily observable without the necessity of the disassembly of a part requiring the use of any means separate from the device" was requested. The basis for this proposal was that:

1. the identification information for a pit-type vehicle and floor scale must be marked in a protected area because if it were marked on a surface visible after installation, then the identification information could be destroyed by traffic over the scale; and

2. since weights and measures officials must do some disassembly to verify that the v_{min} rating of a load cell is appropriate for the scale application, then the identification information could be located in a protected area, but still conveniently available to the official when verifying the load cell information.

The Committee recognizes that, for floor scales installed such that the platform is the only visible surface of the weighing and load-receiving elements, a junction box under a cover plate is the only realistic location for the marking information. In these cases, the information is in an "easily accessible" location although a tool may be required to gain access.

The Committee does not support an exemption for all large-capacity scales, or even just for vehicle scales, because there usually are readily available places for locating the required information. Permitting all large-capacity scales to have the marking information in an area to which access is achieved only by the use of a tool would make it very difficult for the enforcement official to find the required information since the locations would not be standardized.

The Committee recommends that an exemption be written to permit floor scales (whether installed on the floor or in a pit) and all other scales for which the top of the load-receiving element is the only portion of the weighing element and load-receiving element that is visible, to have the marking information in a location that may require the use of a tool. The Committee recommends that the current paragraphs S.6.9. and S.6.10. be renumbered as S.6.10. and S.6.11., respectively, and a new retroactive paragraph S.6.9. be added to read:

> **S.6.9. LOCATION OF MARKING INFORMATION. - Scales that are not permanently attached to an indicating element and for which the load-receiving element is the only part of the weighing/load-receiving element visible after installation, may have the marking information required in G-S.1. of the General Code and S.6. of the Scales Code located in an area that is accessible only through the use of a tool provided that the information is easily accessible (e.g., the information may appear on the junction box under an access plate). The identification information for these scales shall be located on the weighbridge (load-receiving element) near the point where the signal leaves the weighing element or beneath the nearest access cover.**

320-5 I T.1. Tolerance Values for Unmarked Scales

(This is an information item and was adopted when the report as a whole was ratified.)

The Committee received one request in 1987 and three requests in 1988 to modify T.1.1., T.1.1.1., T.1.2., and T.1.3. to simplify the tolerance application to unmarked scales with less than 2,000 and more than 5,000 divisions. The Committee reviewed two proposals and concluded that one, which would have referred only digital scales with less that 2,000 scale divisions to Table 6, would still result in considerable confusion for both service personnel and enforcement officials.

The Committee believes that it would be better to substantially simplify the tolerance application for unmarked scales although it would result in significantly larger tolerances for some scales. Consequently, the Committee recommends that the tolerances for all unmarked scales with 5,000 scale divisions or less, except those with tolerances specified in T.1.3. through T.1.11., be the tolerances in Table 6. To further simplify the tolerances and offset some of the increased tolerances for some scales, the Committee recommends that the additional one-half scale division tolerance given to digital indicating scales as specified in T.1.1.2. be dropped. The additional 0.5 division tolerance didn't make much difference in the past because the fractions of a division were truncated when the tolerance was applied. The extra tolerance for the decreasing-load test would be retained for scales with more than 5,000 scale divisions. Scales with less than 5,000 scale divisions would lose the 1.5 multiplier for the decreasing-load test; however, the increase in the tolerances resulting from applying Table 6 to these scales would adequately compensate for the elimination of the decreasing-load test multiplier for scales with less than 2,000 divisions. Scales with 2,000 to 5,000 divisions, inclusive, already have the tolerances specified in Table 6 as their tolerances. The minimum tolerance for scales with more than 5,000 divisions is included in the amended T.1.2. Table 5 would remain in the Scales Code, but it would apply only to postal and parcel post scales (T.1.8.).

Based upon comments received during the Conference, the Committee recommends that this item be changed to an information item. As the basis for further discussion, the Committee recommends that T.1.2. be amended to read:

> **T.1.2. SCALES WITH ~~LESS THAN 2000 SCALE DIVISIONS OR~~ MORE THAN 5000 SCALE DIVISIONS. - Except for scales specified in paragraphs T.1.3. through T.1.11., the maintenance and acceptance tolerances shall be ~~as shown in Table 5 (next page)~~ 0.1 percent of an applied test load; the acceptance tolerance shall be 0.05 percent of the applied test load. In any case, the tolerance shall not be less than 0.5 scale division. Paragraphs T.N.2.5., T.N.4.1., T.N.4.2., T.N.4.3., T.N.5., and T.N.7.2. also apply.**

The heading for Table 5 would be changed to:

> **Maintenance and Acceptance Tolerances for Postal and Parcel Post Scales**

The Committee recommends that T.1.1.2. and T.1.1.3. be deleted.

The Committee realizes that this recommendation, if adopted, would significantly increase the tolerances on a number of scales. The Committee has based this recommendation on the belief that many weights and measures officials are already giving these scales a one-division maintenance tolerance instead of the Table 5 tolerances and that relatively few scales in service will receive the larger tolerances, and that these are used in applications where the effect of the tolerance change will be minor. The larger tolerance may occasionally result in unacceptably large errors in the application. In these instances, the weights and measures officials may have to apply the suitability of equipment requirements (G-UR.1.1. and Scales Code UR.1.) to control the use of these scales.

Examples of scale capacities by scale divisions that will be affected by this change are listed below.

9 x 0.005 lb	2 lb x 1/4 oz	10 lb x 1 oz	18 lb x 1 oz
24 lb x 1 oz	30 lb x 1 oz	1 lb x 1/8 oz	15 lb x 1/4 oz
15 lb x 1 oz	6 x 0.01 lb	4 lb x 1/4 oz	20 lb x 1/2 oz
390 x 0.2 lb	5 lb x 1 oz	5 lb x 1/2 oz	60 lb x 1 oz

320-6 I Shift Test for Wheel-Load Weighers

(This is an information item and was adopted when the report as a whole was ratified.)

Wheel-load weighers are exempt from the shift test due to the specific language in N.1.3.7. However, wheel-load weighers are often subjected to off-center loading during normal use. The proposal is to establish an off-center load test for wheel-load weighers. The justification for the proposal is that the designs of wheel-load weighers today are, in many cases, quite different from the design of the original wheel-load weighers.

It is suggested that the shift test on wheel-load weighers consist of positioning a test load equal to one-half of the scale capacity a distance of one-fourth the distance from the center to each edge of the wheel-load weigher. The regional weights and measures associations are encouraged to review this proposal for possible adoption in 1990. Additionally, the "footprint" issue must be reviewed because different results have been obtained when placing weights directly on the weighing element as compared to placing the weights on a rubber pad that is intended to simulate the effects of a tire. It is recommended that the NTEP continue to test wheel-load weighers and portable axle-load scales for off-center loading that is representative of conditions of normal use.

320-7 V Test Notes for Large-Capacity Scales

(This item was adopted.)

The Note paragraph N.3. was changed in 1988 to make the minimum amount of test weights and test loads mandatory in 1994. The current test methods and test loads for large-capacity scales are thought to be insufficient for an adequate test. However, when testing a large-capacity scale, it is often more efficient to use a combination of the substitution and strain-load test methods rather than use the substitution method to test to the used capacity of the scale.

The proposed procedures would apply to all types of class III L scales except railway track scales. Due to the large capacities of railroad track scales and the limited amount of test loads that can be assembled to test railway track scales, they are to be exempted from the proposed test procedure. The Committee recommends that the following be added as a footnote to Table 4.

> **Except for railway track scales, the recommended** minimum test of a class III L scale shall consist of the following:**
>
> **1. one test from zero to at least 25% of the scale capacity; and then**
>
> **2. one strain load test to at least the used capacity of the device.**
>
> **Each test is to be conducted using a known test load of at least 25% of scale capacity. This test load may be comprised entirely of test weights or a combination of test weights equal to at least 12.5% of scale capacity and a substitution load.**

Add the following definition for the strain-load test.

> **strain-load test. The test of a scale beginning with the scale under load and applying known test weights to determine accuracy over a portion of the weighing range. The scale errors for a strain-load test are the errors observed for the known test loads only. The tolerances to be applied are based on the known test load used for each error that is determined.**

The Committee recommends that procedures for substitution and strain-load tests along with the tolerance application be written based upon those contained in NBS Handbook 94 and incorporated into the appropriate examination procedure outlines for those devices.

320-8 I N.3.1. Minimum Test-Weight Load for Railway Track Scales

(This is an information item and was adopted when the report as a whole was ratified.)

A proposal suggested that a test load of 30,000 lb is insufficient to test a railway track scale. A minimum test load of 60,000 lb was suggested instead.

While the Committee agrees that the larger loads would provide a better test, the Committee does not want to make a recommendation that would obsolete some test equipment currently in use. The Committee does not recommend adjusting and certifying a railway track scale using a 30,000 lb of test load; larger test loads should be used. The Committee believes that the minimum test load is only a part of the overall issue; more comprehensive test procedures must be specified.

320-9 I Proposed Test Procedures and Tolerances for Coupled-In-Motion Railway Track Scales

(This is an information item and was adopted when the report as a whole was ratified.)

In 1987, the Railroad Advisory Committee submitted recommendations to the S&T Committee for changes in the test procedures and tolerances for coupled-in-motion railway track scales. This was information item 320-9 in the 1988 Report of the S&T Committee. Overall, the Committee supports the procedures that have been developed by the Railroad Advisory Committee; however, there were numerous comments from the industry requesting additional time to fully evaluate the proposed procedures.

The Committee does not want to rush an issue to a vote if the industry and enforcement officials have not adequately studied the issue. Consequently, the Committee has chosen to keep this as an information item in 1989 with the objective of proposing the test procedures for adoption in 1990. Revisions may be based on comments expected over the next year. The Committee has concerns about "grandfathering" existing scales that are tested using 10 cars passed over the scale 10 times to satisfy the accuracy requirements when the scale is used to weigh much longer trains to determine individual car weights for custody transfer. The Committee will continue to study the proposal over the next year.

It is emphasized that the test procedure using the full-length test train must be conducted only for the initial verification. If the test results show that the use of a shorter train will produce an equally acceptable test result, then the shorter test train may be used for subsequent testing. The proposal includes a subsequent verification test using 10 cars passed over the scale five times, a reduction in the number of cars needed for subsequent testing.

The test procedures developed by the Railroad Advisory Committee and published in 1987 are repeated below for additional study.

PROPOSED TEST PROCEDURES & TOLERANCES FOR COUPLED-IN-MOTION RAILWAY TRACK SCALES

Add the following definitions:

> **Test train.** A train consisting of cars weighed on a reference scale and used to test coupled-in-motion railway track scales. The test cars may be placed consecutively or distributed in different places within a train.
>
> **Consecutive-car test train.** A train consisting of cars weighed on a reference scale, then coupled consecutively and run over the coupled-in-motion railway track scale under test.
>
> **Distributed-car test train.** A train consisting of cars weighed first on a reference scale, cars coupled consecutively in groups at different locations within the train, then run over the coupled-in-motion railway track scale under test. The groups are typically placed at the front, middle, and rear of the train.

Delete the existing N.3.1.1. and renumber the existing N.4. as N.5.

Add the following paragraphs:

N.4. COUPLED-IN-MOTION RAILWAY TRACK SCALES

N.4.1. SCALES USED TO WEIGH TRAINS OF LESS THAN 10 CARS.-

(a) These scales shall be tested using a consecutive-car test train consisting of the number of cars weighed in the normal operation.

(b) The test train shall be run over the scale a minimum of five times in each mode of operation following the final calibration.

N.4.2. SCALES USED TO WEIGH TRAINS OF 10 OR MORE CARS.-

N.4.2.1. SCALES PLACED IN SERVICE PRIOR TO JANUARY 1, 1990.-Scales placed in service prior to January 1, 1990, shall be tested for initial verification using a consecutive-car test train of no less than 10 cars run over the scale a minimum of five times.

N.4.2.2. SCALES PLACED IN SERVICE ON OR AFTER JANUARY 1,1990.- These scales shall be tested in a manner that represents the normal method of operation and length(s) of trains normally weighed. The scales may be tested using either:

(a) a consecutive-car test train of a length typical of train(s) normally weighed; or

(b) a distributed-car test train of a length typical of train(s) normally weighed.

(c) However, a consecutive-car test train of a shorter length may be used provided that initial verification test results for the shorter consecutive-car test train agree with the test results for the distributed-car or full-length consecutive-car test train as specified in N.3.1.2.1.

The testing authority shall be responsible for determining the minimum test train length to be used on subsequent tests.

N.4.2.2.1. INITIAL VERIFICATION.- Initial verification tests shall be performed on any new scale and whenever either the track structure or the operating procedure changes. If a consecutive-car test train of length shorter than trains normally weighed is to be used for subsequent verification, the shorter consecutive-car test train results shall be compared to either a distributed-car or consecutive-car test train of length(s) typical of train(s) normally weighed.

The difference between the total train weight of the train(s) representing the normal method of operation and the shorter consecutive-car test train shall not exceed 0.15 percent. If the difference in test results exceeds 0.15 percent, the length of the shorter consecutive-car test train shall be increased until agreement within 0.15 percent is achieved.

N.4.2.2.2. SUBSEQUENT VERIFICATION.- The test train may consist of either a consecutive-car test train with a length not less than that used in initial verification, or a distributed-car test train representing the number of cars used in the normal operation.

N.4.2.2.3. DISTRIBUTED CAR TEST TRAINS.-

(a) The length of the train shall be typical of trains that are normally weighed.

(b) The test cars shall be split into three groups, each group of which shall consist of 10 cars or 10 percent of the train length, whichever is less.

(c) The test groups shall be placed near the front, around the middle, and near the end of the train.

(d) Following the final adjustment, the distributed-car test train shall be run over the scale at least three times or shall produce 50 weight values, whichever is greater.

(e) The scale shall be tested in each mode of operation.

N.4.2.2.4. CONSECUTIVE-CAR TEST TRAINS.-

(a) A consecutive-car test train shall consist of at least 10 cars.

(b) If the consecutive-car test train consists of more than 20 cars, it shall be run over the scale a minimum of three times in each mode of operation.

(c) If the consecutive-car test train consists of between 10 and 20 cars, inclusive, it shall be run over the scale a minimum of five times in each mode of operation following the final adjustment of the scale.

T.N.3.6. COUPLED-IN-MOTION WEIGHING, OTHER THAN MONORAIL SCALES.-Tolerances for ~~a~~ the group of ~~weighments~~ weight values appropriate to the application must satisfy the following conditions:

T.N.3.6.1. - For any group of ~~weighments~~ weight values, the ~~error~~ difference in the sum of the individual in-motion car weights of the group as compared to the sum of the ~~maintenance tolerances appropriate to the weights of the group; and~~ individual static weights shall not exceed two tenths of one percent (0.2%).

T.N.3.6.2. - ~~For any group of weighments, the weighment error shall not exceed the limits given below.~~ If a scale is used to weigh trains of five or more cars, and if the individual car weights are used, any single weight value within the group must meet the following criteria:

(a) no single error may exceed three times the static maintenance tolerance;

(b) not more than 5 percent of the errors may exceed two times the static maintenance tolerance; and

(c) not more than 35 percent of the errors may exceed the static maintenance tolerance.

T.N.3.6.3. - ~~For any group of weighments wherein the sole purpose is to determine the sum of the group of weighments, T.N.3.6.1. alone applies.~~ For a scale used to weigh trains of less than five cars, no single car weight within the group may exceed the static maintenance tolerance.

Current T.N.3.6.3. and T.N.3.6.4. become T.N.3.6.4. and T.N.3.6.5.

Add a new User Requirement UR.5. to impress upon the scale owner/user that a scale is to be tested in the manner in which it is normally used and the proper test procedures must be followed for coupled-in-motion scales.

UR.5. RAILWAY TRACK SCALES WEIGHING COUPLED-IN-MOTION.- A coupled-in-motion scale placed in service on or after January 1, 1990, shall be tested in the manner in which it is operated, with the locomotive either pushing or pulling the cars at the designed speed and in the proper direction. The cars used in the test train should represent the range of gross weights that will be used during the normal operation of the scale. Normal operating procedures should be simulated as nearly as practical. Approach conditions for a train length in each direction of the scale site are more critical for a scale used for individual car weights than for a unit-train-weights-only facility, and should be considered prior to the installation of the coupled-in-motion weighing system.

320-10 VC T.1.9. Railway Track Scales Weighing in Motion

(This item was adopted.)

The reference to the maintenance static weight multipliers in T.N.3.6. is incorrect since T.N.3.6. was changed in 1987. It is proposed to change T.1.9. editorially in 1989 to read:

T.1.9. RAILWAY TRACK SCALES WEIGHING IN MOTION. - The maintenance and acceptance tolerances shall be as set forth in T.N.3.6., except that ~~the maintenance tolerance static multiplier for 5% of the group shall be 4.~~ for T.N.3.6.2. (a), no single error shall exceed four times the maintenance tolerance.

320-11 I Weighing Individual Railroad Cars for Custody Transfer

(This is an information item and was adopted when the report as a whole was ratified.)

As reported in item 320-9 last year, the Committee has serious reservations regarding the current practice of using in-motion weighing to determine the weight of individual cars for custody transfer. The coupled- and uncoupled-in-motion weighing of liquids in tank cars for custody transfer adds to this concern. The Committee asked for and received advice from the Railroad Advisory Committee for possible language to address these issues.

The Railroad Advisory Committee recommended adding the following two user requirements to address the weighing of liquids:

UR.3.8. IN-MOTION WEIGHING OF TANK CARS ON RAILWAY TRACK SCALES.-The acceptability of weighing tank cars (liquids) on a multi-draft in-motion railway track scale when the lading is of an unstable nature is to be determined by conducting comparison tests between static and in-motion weights. The test must employ the same types of loaded tank cars and commodities that are intended to be weighed in the normal operation.

UR.3.9. MANUALLY CONTROLLED STATIC WEIGHING DEVICES ON RAILWAY TRACK SCALES.- The indication of a manually controlled static weighing device must be stable within plus or minus three graduations before the weight is recorded.

The Committee is still concerned about the accuracy of individual car weights obtained from coupled-in-motion weighing. Based upon the comments that have been received and the potential impact of decisions in this area on both the railroads and users of rail transportation, the Committee wants to provide an adequate opportunity to the industry to study the issues and present additional information to the Committee. Consequently, the Committee is presenting this item for information and reporting its current positions for adequate study and review before the Committee presents recommendations to the Conference for a vote.

Summary of Comments

The Committee received over 60 letters on the issue of using individual car weights determined by coupled-in-motion (CIM) weighing for custody transfer (sale of the commodity). The Committee has received test data indicating both great accuracy and poor accuracy of the individual car weights obtained from CIM weighing.

Most of the comments received by the Committee were strongly in favor of permitting the use of individual car weights obtained from CIM weighing as the basis for custody transfer. Most of these letters were from the railroads and from owners of CIM scales who shipped product over these scales. The common positions expressed in most of the letters were that a restriction on CIM weighing would significantly increase operating costs, would have a severe adverse impact on the operations of the railroads, would decrease competitiveness, and unjustifiably increase costs to users. Many letters cited the fact that they have had good accuracy in transactions when using CIM weighing.

The appropriateness of CIM weighing for custody transfer is primarily an economic issue. The cost of weighing cars statically or uncoupled-in-motion is quite high relative to weighing coupled-in-motion. Additionally, the delays in routing and transport to perform static or uncoupled-in-motion weighing requires more cars to ship the same quantity of material. On the other hand, the question of accuracy of individual car weights derived by CIM weighing is of great concern to weights and measures officials and undoubtedly of significant concern to the buyers of commodities in individual car-load lots. The cost of weighing must be considered relative to the cost to buyers and sellers of commodities due to inaccuracies in weighing. The definition of unit train must also be clarified: it is evident weights and measures officials and industry representatives have different interpretations.

The Committee has received comments that errors in CIM weighing can occur when different types of couplers are used within a train and when empty cars are interspaced with loaded cars. It was also stated that some CIM scales can weigh loaded cars accurately, but may not be able to weigh empty cars with similar accuracy. The accuracy may depend on the method of moving the cars over the scale, e.g., pushing or pulling the train, and the direction of movement of the cars. Some of the test data indicates that a given CIM scale may weigh some liquids accurately, but other liquids not accurately. Consequently, it appears that a scale must be tested with the particular commodities, including liquid commodities, that are to be weighed on that scale. The types of cars in a train may also affect the accuracy of individual car weights. In general, it appears that accuracy well within the tolerances specified in Handbook 44 is achievable when a scale has been tested in the manner in which it is used, using the method of movement of cars typical for the application, and testing the scales using trains of lengths that are normally weighed.

Railroad industry representatives have assured the Committee that virtually all users of rail transportation are aware of the scale tolerances for both static and CIM weighing railway track scales. Furthermore, they report that virtually all the users are also aware of their recourse to have cars reweighed if there is a question regarding the accuracy of car weights. A user may also specify in advance the method of weighing a car or cars. However, an additional charge is usually associated with other than CIM weighing in those cases were CIM weighing is the normal practice of the railroads. Additionally, requiring static or uncoupled-in-motion weighing would cause delays because the cars would often have to be routed to locations where an appropriate scale is installed. It was reported that the human element in static weighing results in weighing errors.

Committee Positions

The Committee has established the following positions based upon considerations of the economics of the weighing practices, the cost to buyers and sellers associated with weighing errors on individual cars, the current practices of the industry, and the availability of the different types of railway track scales.

1. The custody transfer of commodities weighed as a unit train was recognized in Handbook 44 in 1973. The Committee believes that unit trains were understood to consist of similar types of cars carrying a single non-liquid commodity.

2. The definition of a unit train must be clarified and the minimum length of a unit train must be specified. A unit train is a number of contiguous cars carrying a single commodity from one consignor to one consignee. The Committee is willing to accept the industry practice of combining unit trains to form a single train.

3. Individual car weights obtained from CIM weighing may be used for custody transfer when the train consists of unit trains of similar cars containing the same commodity.

4. Mixed manifest trains are trains in which individual cars of different types and commodities are transported for different shippers and purchasers. The Committee **does not** consider individual car weights obtained from CIM weighing to be acceptable for the custody transfer of cars for mixed manifest trains. However, the Committee has received comments suggesting that there may be scales installed where site conditions and operations are adequate to produce individual car weights acceptable for custody transfer. The Committee will review any submitted data and recommendations. The Committee does not want to unjustifiably restrict the use of scales that are designed, installed, and used properly, but the Committee wants to ensure sufficient accuracy when individual cars weights are obtained from CIM weighing. Based on comments made at the Interim Meeting, it appears that the CIM weighing of mixed manifest trains for custody transfer is infrequent.

   Individual car weights obtained from CIM weighing of individual cars may be used for the purposes of determining **freight** charges, even for mixed manifest trains.

   The Railroad Advisory Committee is conducting a study which incorporates a computer-generated analysis of the accuracy of weighing various groups of cars within a given train, i.e., 2-, 3-, 4-, and 5-car groups in all possible combinations. The Committee will review this data to determine if this approach may establish a good foundation for the accurate measurement of groups of cars that may be used for custody transfer.

5. If individual car weights are to be obtained from CIM scales for custody transfer, then the CIM scales must be tested with cars and train lengths that represent the normal use of the scale.

6. The Committee believes that a User Requirement should be added to Handbook 44 restricting the use of CIM scales to the weighing of cars only in the manner in which the scale was tested and limited to the commodities for which it was tested. The User Requirement would also require that the restrictions on the use of the scale be posted. These restrictions may include specifying if the scale may be used for full cars, empty cars, trains consisting of a combination of full and empty cars and the sequence of full and empty cars, the train speed, type of commodity, types of cars, couplers (rotary and hazardous material safety couplers), length of trains, direction of movement, pushing or pulling the train, non-liquid or liquid commodities; if liquid commodities are to be weighed, then the type of liquids, full loads, partial loads, empty cars, baffled cars, and any other factors that are known to affect the accuracy.

The Committee requests further information and data to aid in a more thorough review of this issue before action is recommended for a vote in 1990.

320-12 V T.N.4.5. Time Dependence

(This item was adopted.)

The tolerance for the creep (time dependence) test is excessively large for class III L scales. A new tolerance for the creep test was discussed with the Technical Committee for National Type Evaluation - Weighing Industry Sector. A smaller and more appropriate tolerance is needed. The proposed tolerance would apply to both scales and load cells.

The Committee recommends that T.N.4.5. be amended to specify a separate tolerance for class III L scales.

T.N.4.5. TIME DEPENDENCE. - At constant test conditions, the indication 20 seconds after the application of a load and the indication after 1 hour shall not differ by more than:

(a) one-half of the absolute value of the applicable tolerance for the applied load for class III L devices; and

(b) the absolute value of the applicable tolerance for the applied load for all other devices.

320-13 V UR.1.1. Selection Requirements - General, Table 7a

(This item failed.)

The Committee was requested to clarify the listing of devices under class IIII. Not all scales used as highway law enforcement scales are class IIII; only wheel-load weighers and portable axle-load weighers are highway weight enforcement scales classified as class IIII. Permanently installed vehicle and axle-load scales used for highway law enforcement must meet class III L requirements.

The Committee recommends that the text in the second column of Table 7a for Class IIII devices be amended to read:

Wheel-load weighers and portable axle-load scales used for highway weight enforcement.

[This item was changed from an information item to a voting item.]

320-14 V UR.2.6. Approaches

(This item was tabled.)

Some scales have been installed with rather steep approaches. The Scales Code paragraph UR.2.6.1. is vague regarding the amount of slope that is acceptable. The requirement has led a wide range of interpretations depending upon the point-of-view of the individual. Since the cost of approaches may be significant, the bidding for a scale installation may vary significantly if different approach slopes are proposed by competing companies. This has resulted in unfair competition and complaints to weights and measures officials. Some jurisdictions have reported difficulty in the enforcement of the slope of approaches.

The Committee believes that it is necessary to provide a specific clarification to an ambiguous requirement and therefore recommends that the slope on approaches not exceed 1/2 inch per foot. The primary objections to this proposal are that (1) the clarification is not necessary and (2) that the proposal would require too much real estate for many scale installations. The proposed language permits the purchaser of a scale to request any needed exemptions from the requirement prior to the installation of the scale. If space is a severe limitation, the scale should be installed in a pit.

The Committee recommends that UR.2.6. be amended to read:

UR.2.6. APPROACHES.

UR.2.6.1. VEHICLE SCALES. - On the approach end or ends of a vehicle scale installed in any one location for a period of 6 months or more, there shall be a straight approach as follows:

(a) the width at least the width of the platform,

(b) the length at least one-half the length of the platform, but not [required to be] more than 40 feet, and

(c) ~~not less than~~ at least 10 feet of any approach adjacent to the platform shall be constructed of concrete or similar durable material to ensure that this portion remains smooth and level and in the same plane as the platform. However, grating of sufficient strength to withstand all loads equal to the sectional capacity of the scale may be installed in this portion. ~~Any slope in the remaining portion of the approach shall insure (1) ease of vehicle access, (2) ease for testing purposes, and (3) drainage away from the scale.~~

(d) If not level, the remaining portion of the approach shall slope away from the scale and the slope shall not exceed 1/2 inch per foot unless written approval for a greater slope is obtained prior to installation from the weights and measures authority having jurisdiction over the device.
[Nonretroactive as of January 1, 1990]

[A motion was made to retain the last sentence in part (c) and make part (d) a recommendation. The proposed amendment did not pass. After further discussion, a motion was made to table this item. The motion passed.]

320-15 V UR.3.7.1. Weighing Livestock and Definition of Livestock Scale

(This item was adopted.)

The minimum number of scale divisions permitted in a class III scale is 500 and the maximum is 10,000. (Table 3). Additionally, a class III L scale cannot have a scale division of less than 5 lb. For marked scales, this combination of requirements makes the reference to a scale capacity of 60,000 lb in the definition of a livestock scale inconsistent with the III L requirements.

Under paragraph UR.3.7.1., a vehicle scale that is adapted to weighing livestock and that has 10- and 20-lb scale divisions may be used to weigh livestock when the net load exceeds 5,000 lb and 10,000 lb, respectively. These minimum loads correspond to 500 scale divisions for 10- and 20-lb scale divisions. However, it is a common practice to weigh single animals on a livestock scale with 5-lb scale divisions.

The Committee has been requested to clearly indicate that when weighing loads of livestock less than 5,000 lb, the maximum allowable scale division is 5 lb. Weighing single animals on livestock scales is considered reasonable because it is an established practice. The objective of these changes is to permit livestock or single animals to be weighed on any scale with adequate resolution for the minimum load. A minimum net load of 500 d means that a minimum net load of 10,000 lb of livestock (excluding the truck) is required before livestock can be weighed on a vehicle scale with 20-lb divisions when the livestock is on a truck.

The Committee recommends that the following changes be made:

1. Delete the entry for livestock scales from Table 7b.

2. Delete the existing paragraph UR.3.7.1.

3. Add a new paragraph UR.3.8. to read:

UR.3.8. Minimum Load for Weighing Livestock. - A scale with scale divisions greater than 5 lb shall not be used for weighing net loads smaller than 500d.

4. Amend the definition of livestock scale to read:

livestock scale. A scale ~~of 60 000-pound capacity or less~~ equipped with stock racks and gates and adapted to weighing livestock standing on the scale platform.

320-16 W Counting Scales

(This item was withdrawn.)

The development of requirements for counting scales has been under consideration for the last 2 years. Little time has been available to devote to this subject. Consequently, this item has been withdrawn.

320-17 I Initial Zero-Setting Mechanism

(This is an information item and was adopted when the report as a whole was ratified.)

A proposal has been received to define an "initial zero-setting device" that would permit a scale to zero a load of up to 20 percent of scale capacity when power is first applied to the scale. This capability would allow a manufacturer to automatically compensate electronically for a variation in the dead load of scale platforms instead of laboriously adjusting the weight of platforms to satisfy S.1.7. when power is first applied to the scale.

The proposal suggested that Handbook 44 be changed to be consistent with the OIML (International Organization of Legal Metrology) draft International Recommendation for Non-Automatic Weighing Instruments. Under the draft OIML Recommendation, scales may zero up to 20 percent of the scale capacity when the unit is first connected to its power supply without the need for any additional testing during type evaluation. The scale would still be required to indicate up to 100 percent of its capacity and be accurate. No special testing would be required during type evaluation if the maximum amount of weight that can be zeroed when power is supplied is not more than 20 percent.

The draft OIML Recommendation also permits a scale to zero more than 20 percent when power is first supplied; however, additional testing must be performed during type evaluation. If a scale is able to zero more than 20 percent of capacity, then the maximum amount of weight that can be zeroed must be zeroed during the type evaluation process and the complete set of type evaluation tests must be run to verify that the performance requirements are still satisfied when the maximum dead load has been zeroed.

The Committee believes this feature would be appropriate on class I and II scales. However, it does not seem appropriate to allow this feature on vehicle scales. The Committee did not have enough time to address this issue during the Interim Meeting, hence has not made a recommendation. The regional weights and measures associations are requested to place this issue on their agenda to evaluate the proposal and submit comments to the Committee for consideration for next year.

320-18 I On-Board Weighing Systems

(This is an information item and was adopted when the report as a whole was ratified.)

This was item 332-2 on the Interim Meeting agenda.

A proposal was submitted to modify the Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices Code to permit the use of on-board weighing systems for measuring LPG and NH_3 by classifying them as liquid-measuring devices and mass flow meters. The classification of a scale as a metering device was adopted in the Cryogenic Liquid-Measuring Devices Code (Section 3.34). Classifying an on-board weighing system as either a liquid-measuring device or a mass flow meter would exempt the system from the tolerances and the influence factor requirements of the Scales Code.

It is the position of the Committee that the on-board weighing system is a scale. It should be recognized under the Scales Code or new requirements should be written for on-board weighing systems. Although an on-board weighing system may perform as well or better than the metering devices currently in use, the proposal to classify a scale as another type of device based upon the product being measured would remove device technology as a basis for determining which code is applicable to a device. For example, a vehicle scale that is being used exclusively to weigh refined petroleum products might then be classified as a wholesale meter and not have to meet the requirements of the Scales Code. The issue extends beyond the weighing of anhydrous ammonia. An additional application for on-board weighing systems for which inquiries have been received is to weigh dumpsters when they are emptied into trash-collection trucks.

The Committee is interested in recognizing devices that will improve measurement accuracy; however, it does not support the classification of a scale as a metering device simply because it is measuring a liquid product. On-board weighing systems are not new devices; they have been used in feedlot operations for many years.

The Committee is not ready to proceed with action on this item until it has received further review. Additional consideration must be given to determine if these devices can be appropriately used under the existing requirements of the Scales Code.

321 Belt Conveyor Scales Code

321-1 VC S.1.5. Rate of Flow Indicators and Recorders

(This item was adopted as part of the consent calendar.)

The language of S.1.5. stating that a belt-conveyor scale "may be equipped with a disc or strip chart recorder" conflicts with S.1.1. It is proposed that the first sentence of S.1.5. be changed to make it consistent with S.1.1.

Additionally, most analog chart recorders for the rate of flow have a range of zero to 100 percent of the maximum flow rate without any way to record above 100 percent. It has been suggested that when the flow rate exceeds 98 percent of the maximum rated flow rate, then an alarm should sound. This would alert the operator that the scale may be operating in excess of its maximum rated flow rate. By setting the alarm at 98 percent, enough space would still be left on the chart recorder for flow rates within the capacity of the analog chart recorder.

The Committee recommends that paragraph S.1.5. be amended to read:

S.1.5. RATE OF FLOW INDICATORS AND RECORDERS. - A belt-conveyor scale shall be equipped with a rate of flow indicator and ~~may also be equipped with a disc or strip chart recorder~~ an analog or digital recorder. Permanent means shall be provided to produce an audio or visual signal when the rate of flow is equal to or less than 35% and when the rate of flow is equal to or greater than ~~100%~~ 98 percent of the rated capacity of the scale. The type of alarm (audio or visual) shall be determined by the individual installation.
[Nonretroactive as of January 1, 1986.]

321-2 VC S.1.6. Advancement of Primary Indicating or Recording Elements

(This item was adopted as part of the consent calendar.)

Most recording elements used with belt-conveyor scales today simply receive information from the master weight totalizer for printing. Information is received by the recording element from the master weight totalizer. The Committee recommends that S.1.6. be changed to correctly reflect this fact by changing it to read:

S.1.6. ADVANCEMENT OF PRIMARY INDICATING OR RECORDING ELEMENTS. - The ~~primary indicating and recording elements~~ master weight totalizer shall advance only when the belt conveyor is in operation and under load.

321-3 VC S.1.8. Power Loss

(This item was adopted as part of the consent calendar.)

The length of time for which information must be retained in the master weight totalizer is not defined. This implies that the information should be retained indefinitely, which is not believed to be necessary. The Committee recommends that S.1.8. be amended to be consistent with the OIML International Recommendation 74, which specifies that the information should be retained for 24 hours. This should be sufficient for this application. The recommended language is:

S.1.8. POWER LOSS. - In the event of a power failure of up to 24 hours, the accumulated measured quantity on the master weight totalizer of an electronic digital indicator shall be retained in memory during the power loss.
[Nonretroactive as of January 1, 1986.]

321-4 VC S.3.1. Design of Zero-Setting Mechanism

(This item was adopted as part of the consent calendar.)

The rationale for the 2 percent limit on the range of the zero-setting mechanism has been questioned. It seems that the range is unnecessarily small. The OIML recommendation specifies a range of 4 percent. Since a persuasive argument to retain the 2 percent limit was not made, the Committee recommends that the limit be changed to agree with the International Recommendation. The Committee also believes that an alarm should be activated when the limit is reached by the automatic or semi-automatic zero-setting mechanism.

It is recommended that S.3.1. be amended to read:

S.3.1. DESIGN OF ZERO-SETTING MECHANISM. - The range of the zero-setting mechanism shall be not greater than ~~2~~ ± 2 percent of the rated capacity of the scale without breaking the security means. Automatic and semi-automatic zero-setting mechanisms shall be constructed so that the resetting operation is carried out only after a whole number of belt revolutions and the completion of the setting or the whole operation is indicated. An audio

*or visual signal shall be given when the automatic and semi-automatic zero-setting mechanisms reach the limit of adjustment of the zero-setting mechanism.**
*(*Nonretroactive as of January 1, 1990)*

321-5 VC N.3.1. Zero-Load Tests

(This item was adopted as part of the consent calendar.)

The limits on the variation permitted during the zero-load test should be clarified to state that any reading between the start and finish of the zero test must be within tolerance, not just the final reading. The suggested language does not change the requirement.

The Committee recommends that the second sentence of N.3.1. be amended to read:

N.3.1. ZERO LOAD TESTS. - If a belt-conveyor scale system has been idle for a period of 2 hours or more, the system shall be run for not less than 30 minutes when the temperature is above 41 °F (5 °C). When the temperature is below 41 °F, additional warmup time, depending upon conditions, is required before beginning the zero-load tests. The ~~totalizer indication~~ variation between the beginning and ending indication of the master weight totalizer shall not ~~change~~ be more than ± 1 scale division when the instrument is operated at no load for a period of time equivalent to that required to deliver the minimum totalized load of 1000 scale divisions.

The zero-load test shall be conducted over a whole number of belt revolutions of not less than three revolutions or 10 minutes' operation, whichever is greater.

~~The totalizer shall not change more than three scale divisions~~ During any portion of the zero-load test, the totalizer shall not change more than three scale divisions from its initial indication.

321-6 VC N.3.2. Material Tests

(This item was adopted as part of the consent calendar.)

The second sentence of N.3.2. contains statements that are inconsistent. It requires that material weighed after it has passed over the belt-conveyor scale must be weighed statically, but there is no such limitation if the material is weighed before it passes over the scale. The Committee recommends that this sentence be amended so that it is consistent.

The Committee was also requested to clarify the situation regarding the use of reference scales when conducting the material tests on belt-conveyor scales (Item 321-8). There is the possibility of inferring from the present language that the reference scale is in some way different and separate from the scales covered by the Scales Code. In practice, hopper scales and railway track scales have typically been used as reference scales.

The Committee recommends removing the term "reference scale" and its definition from the Belt-Conveyor Scales Code and replacing it with specific language stating the accuracy with which the material is to be weighed. If the term "reference scale" is eliminated, the current language of T.3. must also be changed. The change would result in the statement of T.3. being a test note rather than a tolerance.

The Committee recommends that N.3.2. and the definition of "material test" be amended to read:

N.3.2. MATERIAL TESTS. - Use bulk material, preferably that material for which the device is normally used. Either pass a quantity of pre-weighed material ~~that has been pre-weighed on a certified reference scale~~ over the belt-conveyor scale in a manner as similar as feasible to actual loading conditions, or ~~statically~~ weigh ~~on a certified reference scale~~ all material that has passed over the belt-conveyor scale.

The remainder of N.3.2. is not changed.

material test. The test of a belt-conveyor scale using material (preferably that for which the device is normally used) ~~as a reference standard, the actual weight of the material being determined on a certified reference scale.~~ that has been weighed to an accuracy of 0.1 percent.

The Committee recommends that the current T.3. be deleted and a Note paragraph N.3.2.1. be added to read:

N.3.2.1. ACCURACY OF MATERIAL.- The quantity of material comprising the material test shall be weighed statically or on an uncoupled-in-motion railway track scale to an accuracy of at least 0.1 percent. Verifying this accuracy is the responsibility of the certifying authority. Typical scales used for this purpose include class II, III, and III L scales, or a scale with the tolerance as described in T.1.3. or T.1.11. of Handbook 44 Section 2.20.

It is recommended that the definition of "certified reference scale" be deleted.

321-7 VC N.3.3. Simulated Load Tests

(This item was adopted as part of the consent calendar.)

The Committee discussed whether or not simulated load tests, other than the chain and known weight tests, may be used. In particular, electronic simulated load tests appear to be in use.

The Committee believes that the scale manufacturer is responsible for recommending a method of simulated load test that will best monitor the accuracy of the scale over a period of time. The Committee recommends that the first sentence of N.3.3. be amended as indicated below, delete the remainder of N.3.3., and delete subparagraphs (a) and (b).

N.3.3. SIMULATED LOAD TESTS. - As required by the certifying authority, simulated load tests as recommended by the manufacturer are to be conducted between material tests to monitor the system's operational performance, but shall not be used for official certification.

321-8 W T.3. Reference Standards

(This item was withdrawn.)

This item has been included with 321-6, and consequently has been withdrawn.

321-9 VC T.4.1. Temperature

(This item was adopted as part of the consent calendar.)

Some portions of a belt-conveyor scale, such as the master weight totalizer and printer, might be installed in a reasonably controlled environment and, as a practical matter, should not be required to operate over the temperature range of 14 °F to 104 °F(-10 to 40 °C). Provision should be made to permit the manufacturer to declare a smaller operating temperature range if some portion of the belt-conveyor system is installed in a controlled environment and preclude the need to overdesign. The Committee recommends that a new paragraph T.4.1.2. be added to read:

T.4.1.2. TEMPERATURE LIMITS. - If temperature limits other than 14 °F to 104 °F (-10 to 40 °C) are specified for the device, the range shall be at least 54 °F (30 °C).
[Nonretroactive as of January 1, 1990]

321-10 I UR.2.2.1. For Scales Not Installed by the Manufacturer

(This is an information item and was adopted when the report as a whole was ratified.)

The proposal was to delete the word "short" from this paragraph. The fact that the term "short conveyor" is not defined in the Handbook has been brought to the attention of the Committee. Deleting the word "short" would exempt the scale manufacturer from the installation requirements of UR.2.2.1. for any length belt-conveyor if the conveyor is installed by the manufacturer or built to the scale manufacturer's specifications. The Committee believes that the guidelines given in UR.2.2.1. are good recommendations for any installation of a belt-conveyor scale. More justification for this change must be provided before the Committee is willing to consider the exemption from the installation requirements for other than short conveyors. Comments on how to clarify the term "short conveyor" are requested.

330 Liquid-Measuring Devices Code

330-1A V Multi-Tier Pricing

(This item was adopted. The discussion of the item is organized as follows: Introduction, Committee Proposal, and Explanation of the Issue (p. 165)).

Introduction

Multi-tier pricing is a widespread practice, especially for cash/credit pricing of retail motor fuel, however, many dispensers can compute at only one unit price. In most cases, the single-unit-price computing dispensers are set at the higher unit price (that is, the credit price); the total price at a lower unit price is obtained either by recomputation at the service station console or by determining a discount for cash.

The 1988 NCWM changed the Conference policy that originally recommended an "interim practice" of setting the single-unit-price computing dispensers to the higher unit price to a policy that "the use of the single-unit-price computing dispenser for sale of motor fuel at multiple unit prices is inappropriate, facilitates fraud, and should be eliminated." The S&T Committee agreed with this position and stated that single-unit-price-computing dispensers used for multi-tier pricing are unsuitable for the application and do not comply with the General Code requirement G-UR.1.1. Suitability of Equipment.

Committee Proposal

The implementation date for the specifications and the user requirements listed below have been discussed extensively, particularly with respect to implementation in manufacturing and in consideration of the regulations issued by the Environmental Protection Agency for underground storage tanks. The Committee decided to establish January 1, 1991, as the effective date for the specifications to permit equipment manufacturers adequate time to incorporate changes into production.

The Committee established an effective date of January 1, 1990, for part (a) of UR.3.3. to require devices placed into service in multi-tier pricing applications to compute at the prices at which the product is offered for sale or be dedicated to the transaction for which the sales price can be computed. The objective is to prevent an increase in the number of stations using single-unit-price-computing dispensers in multi-tier pricing applications.

The Committee agreed to a final date of January 1, 1999, by which all devices used in multi-tier pricing applications must be able to compute and display the sales price for the transaction. This date corresponds with the EPA deadline regarding underground storage tanks and permits station owners to plan dispenser replacement with their EPA considerations. The Committee hopes that the large-volume stations will convert to multi-tier pricing equipment long before the date of January 1, 1999.

[This last paragraph relates to UR.3.3. which was removed from Item 330-1A to be a separate voting item. See Item 330-1A (1).]

This item is explained in considerable detail in an effort to provide an understanding of the position of the Committee and the significance of the recommendations that it is making. The Committee's recommended changes to the Liquid-Measuring Devices Code are given below followed by the explanation of the issue.

The Committee recommends that S.1.6.5. be amended and that a new paragraph S.1.6.5.4. be added as follows:

S.1.6.5. MONEY-VALUE COMPUTATIONS.

(a) *A computing device shall compute the total sales price ~~at any single purchase unit price~~ (i.e., excluding fleet sales and other contract sales) for which the product being measured is offered for sale at any delivery possible within either the measurement range of the device or the range of the computing elements, whichever is less.*
(Effective and nonretroactive as of January 1, 1991)

(b) **The analog sales price indicated for any delivery quantity shall not differ from a mathematically computed price (quantity x unit price = total sales price) by an amount greater than the value in Table 1.**

S.1.6.5.4. SELECTION OF UNIT PRICE - When a product or grade is offered for sale at more than one unit price through a computing device, the selection of the unit price shall be made using controls on the device or other user-activated controls.
(Effective and nonretroactive as of January 1, 1991)

The Committee recommends that a new User Requirement UR.3.3. be added to UR.3. to read:

UR.3. USE OF DEVICE

UR.3.3. COMPUTING DEVICE

(a) **Any computing device placed into service after January 1, 1990, in an application where a product or grade is offered for sale at more than one unit price shall be used only for sales for which the device computes and displays the sales price for the transaction. Individual single unit-price computing devices installed to replace existing devices or to add to station capacity are exempt from this requirement.**

[Part (b) of UR.3.3. was removed from this item and voted upon as a separate item. See Item 330-1A (1).]

Renumber the remaining User Requirements accordingly.

The recommended change to S.1.6.5.(a) is proposed as a nonretroactive requirement because the new language is more restrictive and definitive than the previous language. Equipment already in service or that will be installed before the effective date of the new language must comply with the current language.

Explanation of the Issue
During the Interim Meeting, representatives of Amoco, Chevron, Exxon, and Mobil presented information on the number of dispensers that have been replaced with dispensers with multi-tier pricing capability in both company-owned stations and those that are owned by jobbers and customer accounts since the advent of the "discount for cash" programs in 1982. The volume of product sold through these dispensers as a percentage of the total product sold by these companies was also reported. Equipment has been replaced in conjunction with the companies' modernization programs and the replacement of leaking underground storage tanks mandated by the Environmental Protection Agency. In many cases, the dispensers have been replaced with equipment that is capable of multi-tier pricing. The table below provides a summary of the equipment situation for these four companies regarding multi-tier pricing capability. The term "customer-owned" is used to refer to equipment or stations that are owned primarily by jobbers, but includes station operators who are contract accounts of the four oil companies identified above.

DISCOUNT FOR CASH (DFC)
TRANSITION STATUS[5]

COMPANY-OWNED EQUIPMENT[6]

Dispenser Type	% Total Locations	% Total of Volume Sold	% Participation in DFC	
Single Tier	54	42	92	
				95
Multi-Tier	46	58	98	
CUSTOMER-OWNED EQUIPMENT				
Single Tier	93	83	39	
				43
Multi-Tier	7	17	93	

Approximately 30 percent of the stations marketing under the names of Amoco, Chevron, Exxon, and Mobil are company-owned stations. The volume of gasoline sold by these stations is split approximately equally among the company-owned and customer-owned stations.

The companies emphasized that the replacement of equipment has been much higher in company-owned stations than in customer-owned stations. The company representatives cited the high cost of replacing two or three dispensers on one island with one multi-product dispenser as the primary limitation on the rate of equipment replacement in both company-owned and customer-owned stations. This cost is estimated at over $20,000 per island (which includes installation of new piping and wiring). The cost of a multi-product dispenser is approximately $10,000 to $12,000 and installation is $8,000 to $10,000. The replacement of equipment in the customer-owned stations often represents a greater financial burden for the station owner than it does for the major oil companies. The oil companies are not in a position to mandate equipment replacement in customer-owned stations, so it is not possible for them to project when the customer-owned stations would replace single-unit-price dispensers with those having multi-tier pricing capability.

The company representatives stressed the impracticality of dedicating islands, dispensers, or hoses to a particular type of service and method of sale, e.g., full service cash, full service credit, self service cash, and self service credit, due to the limited number of dispensers in a station, the resulting inefficiency in servicing consumers, the inherent traffic patterns through stations, and consumer confusion that would result from products being available from only selected dispensers or islands. The companies reported on the education and training efforts that have been undertaken to impress upon their dealers and employees to give the cash discount to consumers without consumers requesting the discount. The companies are in the process of implementing the posting of signs to increase consumer awareness of the "discount for cash" program and the consumer's right to get the discount.

The Committee appreciates the dealer education and training programs on the "discount for cash" programs, the effort to increase consumer awareness of the discount to which they are entitled, and progress that has been

[5]Estimated year-end 1988 for Amoco, Chevron, Exxon, and Mobil.

[6]The numbers at the far right in the fourth column are the weighted average of the percent of stations participating in the "discount for cash" program based upon the total number of locations of company-owned and customer-owned equipment.

made to install dispensers with multi-tier pricing capability. However, the Committee believes that the suitability of equipment dictates that when gasoline is sold to the public through a computing dispenser, the dispenser must be able to compute at the price at which the product is offered for sale.

Weights and measures officials stated that they are continuing to receive complaints from consumers claiming that they are not receiving their cash discounts. Representatives from two states that have conducted surveys on the discount practice reported the frequency of consumers failing to get a discount, getting an incorrect discount, or consumers being required to take the discount in additional product to be 16 percent in one state and 37 percent in the other. Other officials reported that they have not had any complaints regarding the "discount for cash" program. The oil companies have reported that they have received very few complaints and that the complaints reported by many weights and measures officials are not being reported to them. The oil companies request that weights and measures officials report these complaints to them so they can take action, if necessary, to correct the problem.

The Committee reviewed the following information provided by representatives of the oil companies:

1. the percent of equipment in company and customer-owned stations that have multi-tier pricing capability;

2. the percent of product sold through these dispensers;

3. the number of customer-owned stations that are participating in the discount for cash program;

4. the replacement of dispensers as a result of the EPA mandate to replace underground storage tanks; and

5. the rate of installation of equipment with multi-tier pricing capability in the modernization programs for stations.

The Committee believes that the entire issue can be resolved if all computing dispensers used in multi-tier pricing applications are able to compute at the prices at which product is offered for sale through the dispenser. Suitability of equipment requires that the total price on a dispenser presented to the customer must correctly state the price that the consumer is required to pay. To achieve this goal, the Committee believes that it is necessary to establish a deadline by which all dispensers must either compute at the price at which the product is sold through the dispenser or the dispensers shall be dedicated to the sales for which they can compute the total price.

Equipment replacement over the last 6 years has resulted in more than 50 percent of the product sold through the "discount for cash" programs to be sold through dispensers with multi-tier pricing capability. The Committee considered the possibility of giving an exemption to small stations that participate in the "discount for cash" program based upon the number of gallons sold by the station. The Committee decided against an exemption for the following reasons:

1. The information provided by the oil companies shows that a large number of customer-owned stations, (believed to be small-volume locations) do not participate in the "discount for cash" program, consequently, an exemption is not necessary.

2. The small stations still have the option to designate islands, hoses, or dispensers to the method of service and payment for which the product is offered for sale. The small stations do not have the volume of business that would create some of the problems identified by industry regarding this alternative. Unless a station has local competition in the "discount for cash" program, which is believed to be limited where small stations are involved, there is no pressing motive to implement the "discount for cash" program, as evidenced by the lack of participation in the program by customer-owned stations. If the program is believed to be essential to the station's business, then the station owner must make a business decision as to whether or not the merchandising method is worth the expense of purchasing equipment that is suitable for the application.

3. An exemption on the basis of gallons sold per month would be difficult to enforce. Weights and measures officials do not have access to the sales records, and the fluctuation in sales volume from month to month and year to year would complicate the process of granting the exemption.

The Committee wants to ensure continuing progress in replacing single-unit-price dispensers used in multi-tier pricing applications with equipment that is capable of computing at the unit prices at which product is sold through the dispenser. To ensure that consumers are aware of the price at which the product is being sold and to reduce the potential for fraud, the Committee recommends that dispensers manufactured after January 1, 1990, be equipped with controls on the dispenser that require the consumer to select the unit price for the transaction rather than allowing the unit price to be selected only from the service station control console. In prepay transactions, it is anticipated that the authorization and selection of the unit price will have two steps:

1. the service station attendant will authorize a specific unit price for a delivery to ensure that the consumer does not fraudulently select the incorrect unit price; and

2. the consumer will select the corresponding unit price at the dispenser, as authorized by the station attendant, to eliminate the possibility that the attendant could fraudulently change the unit price without the consumer's knowledge.

The dispenser will not operate if the attendant and the consumer fail to select the same unit price.

Based upon the information provided to the Committee, the Committee recommends amendments to S.1.6.5. to require that dispensers installed after January 1, 1990, be able to compute at the unit prices for which product is sold through the device and to require that the controls to select the unit price be on the dispenser. The phrase "through the device" is important because many stations offer a product at four different prices (full serve cash, full serve credit, self serve cash, and self serve credit), but most dispensers are able to compute at only two unit prices for each product offered through a multi-product dispenser. In these instances, the dispensers are designated as either full service or self service and the dispenser is able to compute at either the cash or credit price for the method of service for which the dispenser is used. It is not necessary (although desirable) for each dispenser to compute at all of the unit prices at which the product is sold in the station; a dispenser would have to compute at only those units prices at which product is sold through that dispenser.

The Conference position on the suitability of single-unit-price dispensers for use in multi-tier pricing applications has been challenged by some oil company representatives. The determination of the suitability of equipment for multi-tier applications requires approval of at least three parties: the device owner (usually the seller of the product), the device user (often the purchaser of the measured product), and the weights and measures jurisdiction that has regulatory authority over the device. The fact that weights and measures officials have permitted single-unit-price dispensers to be used in multi-tier applications does not establish these devices as suitable for multi-tier applications in view of the problems reported by weights and measures officials. The Conference clearly stated its opinion in 1988 on the suitability of using single-unit-price dispensers in multi-tier pricing applications. The Committee emphasizes to the oil industry representatives that they are responsible for ensuring that suitable equipment is installed and used appropriately before any additional pricing levels are introduced into marketing.

The Committee recognizes that some time will be required to replace existing equipment with dispensers that have multi-tier pricing capability. In the meantime, the Committee does not want any additional single-unit-price dispensers to be used in multi-tier applications. Consequently, the Committee recommends the adoption of a new User Requirement that has two parts. The first part would require that any dispensers (new, used, or already in service as a single-unit-price dispenser) placed into use in a multi-tier application after January 1, 1990, shall either:

(a) be able to compute at the unit prices for which product is sold through the dispenser, or

(b) the use of the dispenser shall be dedicated to only those sales for which it can compute the total price of the transaction.

This would permit any station (not company) that is already using single-unit-price dispensers in a multi-tier pricing application and still using them in that application on December 31, 1989, to continue such use in multi-tier pricing applications (until January 1, 1995, when the second part of the User Requirement would become

effective). If a station owner implements multi-tier pricing after January 1, 1990, then the dispensers would either have to be equipped with multi-tier pricing capability or be dedicated to those sales for which the dispensers can compute the total sales price. The same conditions would apply if a station that has been selling product at a single unit price were to be purchased by an oil company that initiates multi-tier pricing after January 1, 1990.

For practical reasons, an exemption to part (a) of the User Requirement is given to those dispensers that are installed to replace an individual dispenser. The replacement may be the result of damage during use or as a maintenance decision. When modernizing a station, single-unit-price computing dispensers will normally be replaced with multi-product dispensers that have multi-tier pricing capability. The piping layout for a multi-product dispenser is substantially different from a single product mechanical unit. The piping changes typically require building permits and some State underground-tank regulations or the local authority may require replacement of all product lines, and perhaps tanks, when any of the piping is changed. Additionally, mechanical dispensers and electronic dispensers are controlled and operated by substantially different generations of console equipment. Mixing equipment could result in two control consoles at a single location. The Committee does not want the replacement of a single damaged dispenser to be the cause of major station renovation.

Similarly, if a station is currently using single-unit-price computing dispensers in a multi-tier pricing application, it is the intent of the Committee to permit the station to add additional single-unit-price computing dispensers to expand its service. The Committee believes that few stations would fall into this category, so a specific exemption was not written into the requirement. This consideration can be handled effectively through enforcement practices and has very limited effect on enforcement; however, it may have considerable impact on the operation of a small station. In any case, these stations would still have to comply with the date by which all dispensers must be able to compute at the prices at which product is offered for sale through the dispenser.

The second part of the User Requirement establishes a deadline of January 1, 1995, after which all dispensers used in multi-tier pricing applications must either have multi-tier pricing capability or be dedicated to those sales for which the dispenser can compute.

The Committee has received a position paper from the American Petroleum Industry (API) on the S&T recommendations. The API has requested that the Committee revise its position to permit any stations that wish to utilize multi-tier pricing after January 1, 1990, to do so under the same conditions as those stations that are using multi-tier pricing prior to January 1, 1990. The basis of this request is that companies, jobbers, and individual-account stations should not be subject to more stringent requirements than current program participants. The User Requirement would place those companies and stations that initiate multi-tier pricing after January 1, 1990, under a significant economic burden to have equipment capable of multi-tier pricing in place before they implement multi-tier pricing while their competitors continue to operate using single-unit-price computing dispensers. This places the companies and stations implementing multi-tier pricing after January 1, 1990, at a competitive disadvantage.

The Committee has discussed this request and has decided to present UR.3.3. to the Conference as it was originally stated. The Committee does not want the number of stations using multi-tier pricing with single-unit-price dispensers to increase after January 1, 1990. The API proposal raises the possibility that a major oil company could choose to implement multi-tier pricing with single-unit-price computing dispensers after January 1, 1990. The Committee wants to eliminate this possibility of a substantial number of new stations using multi-tier pricing without having the proper equipment or dedicating dispensers to the method of sale for which the dispensers can compute the total sale price.

The API recommends that the January 1, 1995, date be changed to January 1, 1999. The 1999 date would coincide with the date established by the Environmental Protection Agency (EPA)regarding the replacement of underground tanks. The long-term planning of businesses requires that major expenses be scheduled to minimize the cost of station renovations. Many dispensers would normally be replaced in the process of replacing underground tanks and the concurrent renovation of the station. Unless the deadline dates for weights and measures and the EPA coincide, a station may be required to replace its dispensers prior to the replacement of the underground tanks. In this situation, the station would have the additional expense of replacing the piping a second time when the underground tanks are replaced. The costs of replacing tanks and dispensers are major expenses for these businesses, so it is logical to address both situations on the same time schedule.

330-1A (1) V UR.3. Use of Device; UR.3.3. (b) Computing Device

(This item failed.)

This item was removed from Item 330-1A for a separate vote at the request of the voting members. The discussion addressed the proposed effective date for the application of this requirement to all single-unit-price devices used in multi-tier pricing applications. Different views existed as to the final date.

The Committee recommended that a new User Requirement UR.3.3. (b) be added to UR.3. to read:

UR.3. USE OF DEVICE

UR.3.3. COMPUTING DEVICE

(b) A computing device shall be used only for sales for which the device computes and displays the sales price for the transaction. (Effective and retroactive as of January 1, 1999)

[A motion was made to amend the recommendation by changing the date of January 1, 1999 to January 1, 1995. The proposed amendment failed by a vote of 22 to 24 in the House of State Representatives and a vote of 48 to 17 in the House of Delegates. The item as proposed by the Committee failed. Consequently, there is no specific requirement with an effective date for full conformance with multi-tier pricing computing capability. The General Code requirement G-UR.1.1. applies.]

330-1B V S.1.6.4. Display of Unit Price and Product Identity

(This item was adopted.)

The Committee has been advised to consider the possibility that the oil industry may offer retail motor fuels at more unit prices than currently being offered. The additional unit prices will create significant hardware problems to equipment manufacturers if all available unit prices must be displayed simultaneously. To reduce the demands on hardware and still permit the consumer to have access to all of the unit prices for which products are sold through a dispenser, the Committee recommends that S.1.6.4. be amended. The amendment would require that all of the unit prices at which products are offered for sale shall be available to the consumer and displayed on the dispenser. The unit prices for each product may be:

1. displayed simultaneously for all products;

2. displayed simultaneously for each product separately; or

3. displayed individually in a unit-price display only if controls permit the customer to sequence the display through the unit prices for each and every product.

Whichever method is used, it is imperative that the method of payment and the product corresponding to the unit price be clearly identified with the displayed unit price. If each dispenser in a station is equipped with a card-reader and a video display terminal and the unit prices can be shown on the video display, then the dispenser is considered to comply with the recommended language for S.1.6.4.1. A single card-reader and video display terminal for an entire station or an island consisting of multiple dispensers is not considered to comply with the requirement to display the unit prices on the dispenser. In any case, part (a) of S.1.6.4.1. still requires that the unit price at which the dispenser is computing must be displayed on the face of the dispenser.

A sentence is included in the proposed S.1.6.4.1.(b) to clearly indicate that the simultaneous display of all unit prices for all products is not required. For example, suppose that five products are available from one dispenser and that each product is offered for sale at four unit prices. The amendment to S.1.6.4. permits displaying a single unit price at a time; however, the dispenser must have controls that permit the customer to display the four unit prices in sequence for each grade, then switch to a different grade and display the four unit prices for

that grade. This process can be repeated indefinitely for all products until one unit price is selected by the customer. This approach permits numerous options for presenting the unit price information.

A similar change should be made to User Requirement UR.3.2. to reflect the flexibility permitted in S.1.6.4.1. The User Requirement, as currently applied, requires that all unit prices at which the product is sold be posted on the dispenser. Some States regulations require the posting of all unit prices on a street sign or in the station. If a dispenser displays the unit prices in the manner described in the proposed S.1.6.4.1.(b), then it should not be necessary to simultaneously post all of the unit prices at which product is offered for sale. Consequently, the Committee recommends that UR.3.2. be amended to clearly state that the posting of all unit prices is not required provided that the dispenser complies with S.1.6.4.1.

The Committee was informed that a number of older dispensers are able to compute at two unit prices, but the dispensers cannot display both unit prices. In these cases, the unit prices are posted on the dispenser. To permit these dispensers to continue to be used, the Committee recommends that the amendment be nonretroactive.

The Committee believes that the consumer would be better served if the dispenser itself displayed the unit prices at which the product is available for sale through the dispenser. This would also eliminate the possibility that the posted prices do not agree with the actual sale prices. Consequently, the Committee recommends that S.1.6.4.1. and UR.3.2. be amended to read:

S.1.6.4. DISPLAY OF UNIT PRICE AND PRODUCT IDENTITY.

S.1.6.4.1. UNIT PRICE.

(a) **A computing or money-operated device shall be able to display on each face the unit price at which that device is set to compute or to dispense.**

(b) If a grade, brand, blend, or mixture is offered for sale from a device at more than one unit price, then all of the unit prices at which that product is offered for sale shall be displayed or shall be capable of being displayed on the dispenser using controls available to the customer prior to the delivery of the product. It is not necessary that all of the unit prices for all grades, brands, blends, or mixtures be simultaneously displayed prior to the delivery of the product.
(Effective and nonretroactive as of January 1, 1991.)

UR.3.2. UNIT PRICE AND PRODUCT IDENTITY.

(a) **The following information shall be conspicuously displayed or posted on the face of a retail dispenser used in direct sale:**

(1) **the unit price at which the product is offered for sale; and**

(2) **in the case of a computing type or money-operated type, the unit price at which ~~a computing type or money-operated~~ the dispenser is set to compute ~~and deliver~~.**

It is not necessary to simultaneously display or post all the unit prices for all grades, brands, blends, or mixtures provided the dispenser complies with S.1.6.4.1.

(b) **The following information shall be conspicuously displayed or posted on each side of a retail dispenser used in direct sale:**

(1) **the identity of the product in descriptive commercial terms, and**

(2) **~~in the case of a dispenser designed to dispense more than one grade, brand, blend, or mixture of product,~~ the identity of the grade, brand, blend, or mixture that a multi-product dispenser is set to ~~compute and~~ deliver.**

330-2 I Meters Used for the Measurement of Hot Oil

(This is an information item and was adopted when the report as a whole was ratified.)

The meters used in batch plants to meter oil at approximately 300 °F into a mixer for making asphalt can not meet the tolerances specified in the LMD Code. They are considered commercial devices in some jurisdictions because the contracts for road construction projects provide for payment depending on the quantity of hot oil used. Such contracts with batch plants are the only known commercial application of this type of meter. Experience by one State that has tested these meters for 6 years indicates that a tolerance of 0.5 percent is appropriate.

The Committee needs more information to understand the application and requests additional comments on this item.

330-3 I N.4.1.1. Wholesale Devices Equipped With Automatic Temperature-Compensating Systems

(This is an information item and was adopted when the report as a whole was ratified.)

A proposal has been made to make optional the test of a meter with the temperature-compensating system deactivated. The justification is that the uncompensated volume test is a diagnostic test which should be performed by a repairman, not a weights and measures official.

The Committee does not agree, believing that the test provides valuable information on the performance of the meter and indicates whether or not there are offsetting errors in the meter adjustment and the adjustment of the temperature-compensating system. Due to the increasing use of electronic systems, fewer separate tests are required to properly test a meter with an automatic temperature-compensating system. Consequently, no change is recommended.

330-4 V UR.3.5.1. Use of Automatic Temperature Compensators

(This item was adopted.)

Two different interpretations of this paragraph have been applied to metering systems utilizing electronic methods of automatic temperature compensation. The interpretation varies from State to State. The two interpretations are summarized below.

1. If a loading-rack metering system is equipped with an automatic temperature-compensating system, then the system may be used for some customers and not others depending upon the method of measurement specified in the contract.

2. If a loading-rack metering system is equipped with an automatic temperature-compensating system, then the system must be used for all customers.

The first interpretation is the correct interpretation.

This paragraph was originally written to address meters with mechanical automatic temperature-compensating systems that indicated only the temperature-compensated quantity. The objective is to require a temperature-compensating system not be changed during a 12-month period or the duration of a contract for a customer. This paragraph does not establish the method of sale for products, but addresses the use and operation of the device. A mechanical temperature-compensating system must be in use at all times unless written approval of the weights and measures authority is obtained to deactivate the system. This requirement does not preclude the sale of both compensated and uncompensated product from a mechanical meter if the meter is equipped with both the compensated (net) indication and the uncompensated (gross) indication. The method of sale is

established by State regulation, if one exists, or by contract if State regulations do not specify the method of sale.

Wholesale loading-rack meters usually have electronic temperature-compensating systems. These systems often provide both the compensated and uncompensated quantities for a transaction through indications or the printed ticket. Either the compensated or the uncompensated quantity obtained from the measurement process may be used for billing purposes, based upon the State regulation or contract, provided that the method of billing for a particular customer.

To clearly state that UR.3.5.1. does not establish a method of sale and to clarify when an automatic-temperature compensating-system shall be used, the Committee recommends that UR.3.5.1. be amended to read:

UR.3.5. TEMPERATURE COMPENSATION, WHOLESALE.

UR.3.5.1. AUTOMATIC.

UR.3.5.1.1. WHEN TO BE USED. - If a device is equipped with ~~an~~ a mechanical automatic temperature compensator, it shall be connected, operable, and in use at all times. ~~The~~ An electronic or mechanical automatic temperature- ~~compensator~~ compensating system may not be removed, nor may a compensated device be replaced with an uncompensated device, without the written approval of the responsible weights and measures jurisdiction.

[Note: This requirement does not specify the method of sale for product measured through a meter.]

330-5 I Definitions of Retail and Wholesale Devices

(This is an information item and was adopted when the report as a whole was ratified.)

The Committee was asked to review the definitions for retail and wholesale devices. The main problem concerns the ambiguity in determining the appropriate value of the graduations applied to vehicle-tank meters since the same meter may be used both as a retail and a wholesale device. This was item 330-5 in 1988.

The Committee reviewed the proposed definitions, but is not recommending a change at this time. The review has revealed that the problem is not specifically the definition, but rather the minimum delivery that may be made when using a wholesale meter. A device must have a quantity division that provides adequate resolution for the range of deliveries for the meter. This value of the scale division is related to whether the device is a large-capacity or small-capacity device. The terms "wholesale" and "retail" are only a part of the problem.

A retail device may be used for wholesale deliveries, but a wholesale meter may not always be appropriate for retail deliveries. The adoption of the proposed definitions would change the scope of paragraphs that contain the words "wholesale" and "retail." The Committee believes the terminology to distinguish between retail and wholesale devices should be changed, that a minimum delivery should be established for wholesale devices so that the value of the quantity division is appropriate for the application, and that the other paragraphs in the Code must be reviewed to assure that the change in terminology will not adversely change the scope of the requirements.

The Committee believes that the resolution of this issue is to specify the accuracy required for specific commodities and the resolution required for the size of the deliveries. The Committee requests that the regional weights and measures associations study this issue to develop proposals to resolve it. The Committee hopes that any change recommended to the Conference on this item will be comprehensive and thoroughly reviewed so that corrective action will not be necessary in the near future.

331 Vehicle-Tank Meters Code

331-1 V S.1.1.2. Units; Milk Meters

(This item was adopted. See item 331-3 for the final wording adopted for S.1.1.2.)

The Committee recommends that S.1.1.2. be amended to permit milk meters to indicate and record the measured quantity in pounds using the conversion factor of 8.6 lb per gallon, the standard factor when using a calibration chart for a milk tank. It is believed that this change would reduce confusion when a milk meter measures milk for custody transfer. Although the quantity in a milk tank is measured volumetrically, it is usually recorded in pounds based upon the 8.6 lb per gallon conversion factor. If milk meters were permitted to indicate in pounds, then the unit of measure for bulk milk would be the same whether the milk were weighed in a milk tank or through a milk meter.

In general, it is the position of the Committee that when a commodity is measured by volume, then its quantity indication should be in volume units. The Committee realizes that the dairy industry has been using the conversion factor of 8.6 lb per gallon as a marketing standard for many years. Because it is a well established and understood marketing practice, and because milk is already measured in milk tanks on this basis, there does not appear to be a significant problem in permitting a vehicle-tank meter to indicate the quantity for milk in pounds on the basis of the recognized standard of 8.6 lb per gallon. However, the Committee does not believe it is appropriate to extend to other commodities the concept of measuring in volume and indicating in weight units. Consequently, the Committee has proposed language that specifically limits this practice to the measurement of milk.

The meters must be tested using milk as the test medium; there is a significant difference in the performance of positive displacement meters when they are measuring milk as compared to water. Similarly, it is believed that there is a significant difference in the meter adjustment or calibration factor when whole raw milk is measured as compared to skim milk.

The Committee is concerned about the availability of provers to test the milk meters volumetrically. The field standard provers used to test milk meters must be sanitary lest the milk be contaminated. Very few provers are available for this purpose, and the cost of each State purchasing an appropriate standard to test these meters would be high considering the limited use. This problem of a lack of appropriate field standards for this purpose will be aggravated as the number of milk meters in commercial use increases. The USDA/AMS Dairy Division has commented that "..until such time that the equipment and methodology needed to properly check and maintain the accuracy of vehicle-mounted meters are in place, we should oppose such use for payment purposes." The Committee does not have a solution to this problem; however, milk meters are already recognized as commercial measuring devices.

The Committee recommends changing S.1.1.2. by deleting the last sentence and making the last sentence a new paragraph S.5.5. It is necessary to amend S.1.1.3. to specify the maximum division value in pounds. The Committee recommends that Note N.1. be amended to specify that milk meters must be tested with the type of milk that the meter will measure. The recommended changes are:

S.1.1.2. UNITS.

(a) A meter shall indicate, and record if the meter is equipped to record, its deliveries in terms of gallons [except as noted in S.1.1.2.(b)]. Fractional parts of the gallon shall be in terms of either decimal or binary subdivisions.

(b) When it is an industry practice to purchase and sell milk by weight based upon 8.6 pounds per gallon, the primary indicating element may indicate in pounds and decimal pounds. The weight value division shall be a decimal multiple or submultiple of 1, 2, or 5. (See S.5.5.)

S.1.1.3. VALUE OF SMALLEST UNIT. - The value of the smallest unit of indicated delivery, and recorded delivery if the meter is equipped to record, shall not exceed the equivalent of:

(a) 1 pint or 1 pound on milk-metering systems and on meters used for retail deliveries of liquid fuel for domestic use, or

(b) 1 gallon or 10 pounds on other meters.

S.5.5. CONVERSION FACTOR - When the conversion factor of 8.6 pounds per gallon is used to convert the volume of milk to weight, the conversion factor shall be clearly marked on the primary indicating element and recorded on the delivery ticket.

N.1. TEST LIQUID.

(a) A measuring system shall be tested with the liquid to be commercially measured or with a liquid of the same general physical characteristics. A seal or tag should be attached by the weights and measures official following a satisfactory examination indicating the product used during the test.

(b) A milk measuring system shall be tested with the type of milk to be measured when the accuracy of the system is affected by the characteristics of milk (e.g., positive displacement meters).

Several methods are currently used to measure milk. These include bulk milk tanks, vehicle scales, and milk meters. Another item on the agenda (Item 335-1) is a recommendation to recognize mass flow meters for measuring milk. These methods of measurement raise the possibility of establishing three different bases for measuring milk. The first method is volume measurement and a factor of 8.6 lb per gallon to convert to weight units; the second uses a vehicle scale that provides weight values based upon apparent mass versus 8.0 g/cm^3; and, third, mass flow meters can measure milk based upon true mass. Additionally, mass flow meters can measure the density of the milk as it is passing through the meter and convert it to a weight based upon 8.6 lb per gallon.

These three methods of measurement could result in three different measured quantities for the same volume of milk. The existence of more than one basis for measurement violates a basic principle of weights and measures that the payment for a commodity or service should be the same regardless of the method used to determine the quantity. However, the first two methods of measurement are already in use and it seems inappropriate to delay the recognition of mass flow meters for the measurement of milk due to this conflict. Until the industry and regulatory agencies address this situation and agree upon a single basis of measurement, multiple methods of payment will continue to exist.

The same changes will be made to the Milk-Meters Code (Section 3.35) with the additional provision that the quantity division for measuring quantities in excess of 1,000 gallons (8,600 lb) shall not exceed 1 gallon or 10 lb.

331-2 W S.1.1.3. Value of Smallest Unit

(This item was withdrawn.)

This issue is similar to Item 330-5 in that it seeks an effort to clarify the size of the quantity division in certain applications. Part of the concern is to assure that relatively small deliveries are measured with sufficient resolution to reduce the rounding error of the indication. The proposal was to amend S.1.1.3. to require quantity divisions of not greater than 1 pint on metering systems with a designed maximum flow rate of 150 gallons per minute or less. The idea behind the proposal is that meter flow rate is related to the size of the average delivery.

This item is withdrawn based upon the discussion contained in 330-5.

331-3 V Code Changes to Permit Mass Flow Meters

(This item was adopted.)

A proposal has been made to amend the Vehicle-Tank Meters Code to permit mass flow meters to be used in all applications covered by this code, particularly for measuring milk. The suggested changes to the VTM code to recognize mass flow meters are similar to those adopted in 1987 for the LPG and NH_3 Code.

This subject was discussed in item 331-1. Those issues apply to this item as well.

To be consistent with the requirements adopted in 1987 in the LPG and Anhydrous Ammonia Liquid-Measuring Devices Code, the mass of milk when measured through a mass flow meter should be expressed as apparent mass versus 8.0 g/cm^3.

The test procedures recommended in the 1987, Item 330-2, are applicable to mass flow meters used to measure milk. The USDA/AMS Dairy Division has commented that "..until such time that the equipment and methodology needed to properly check and maintain the accuracy of vehicle-mounted meters are in place, we should oppose such use for payment purposes." The Committee has been advised that portable sanitary holding tanks are commonly available at dairy plants. These tanks can be placed on a floor scale and used to catch the milk that has passed through a mass flow meter. The scale can be tested and used as a transfer standard. The meter indication can then be compared to the scale indication to determine the accuracy of the mass flow meter.

This item is a voting item containing recommended changes to the Vehicle Tank Meters Code. If additional information becomes available on the issues presented above or on new issues related to the measurement of milk, the Committee is prepared to change this to an information item to give additional time to address the issues.

The Committee recommends the following changes to recognize the use of mass flow meters on vehicles to measure milk and other products.

S.1.1.2. UNITS. - A meter shall indicate, and record if the meter is equipped to record, its deliveries in terms of gallons or pounds. Fractional parts of the gallon shall be in terms of either decimal or binary subdivisions. Fractional parts of the pound shall be in decimal subdivisions. The mass shall be expressed as apparent mass versus a density of 8.0 g/cm^3

[Editors Note: As a result of the adoption of the recommendations in this item and item 331-3, S.1.1.2. will read as follows in the 1990 edition of Handbook 44:

S.1.1.2. Units. -

(a) A meter shall indicate, and record if the meter is equipped to record, its deliveries in terms of gallons or pounds. Fractional parts of the gallon shall be in terms of either decimal or binary subdivisions. Fractional parts of the pound shall be in decimal subdivisions.

(b) When it is an industry practice to purchase and sell milk by weight based upon 8.6 pounds per gallon, the primary indicating element may indicate in pounds and decimal pounds. The weight value division shall be a decimal multiple or submultiple of 1, 2, or 5. (See S.5.5.)

(c) The mass of milk measured through a mass flow meter shall be expressed as apparent mass versus a density of 8.0 g/cm^3.]

S.1.1.3. VALUE OF SMALLEST UNIT. - The value of the smallest unit of indicated delivery, and recorded delivery if the meter is equipped to record, shall not exceed the equivalent of:

(a) 1 pint or 1 pound on milk-metering systems and on meters used for retail deliveries of liquid fuel for domestic use, or

(b) 1 gallon or 10 pounds on other meters.

S.1.4.2. PRINTED TICKET. - ~~Any~~ A printed ticket issued by a ~~device of the~~ computing-type device on which is printed the total computed price shall have printed clearly thereon: ~~also~~

(a) the total ~~volume~~ quantity of the delivery in terms of gallons or pounds and the appropriate fraction of the ~~gallon~~ quantity; and

(b) the price per ~~gallon~~ unit.

S.1.4.3. MONEY-VALUE COMPUTATIONS. - Money-value computations shall be of the full-computing type in which the money value at a single unit price, or at each of a series of unit prices, shall be computed for every delivery within either the range of measurement of the device or the range of the computing elements, whichever is less. Value graduations shall be supplied and shall be accurately positioned. The value of each graduated interval shall be 1 cent. On electronic devices with digital indications, the total price may be computed on the basis of the quantity indicated when the value of the smallest division indicated is equal to or less than 0.1 gallon or 1 pound.

Add a new paragraph S.2.4. to address meters that may be affected by changes in product density.

S.2.4. MASS FLOW METERS ONLY. - An automatic means to determine and correct for changes in product density shall be incorporated in any mass flow metering system that is affected by changes in the density of the product being measured.

N.3. TEST DRAFTS. - Test drafts should be equal to at least the amount delivered by the device in 1 minute at its maximum discharge rate, and shall in no case be less than 50 gallons or 500 pounds.

T.3. TOLERANCE VALUES ON METERS USED FOR THE MEASUREMENT OF AGRICHEMICAL LIQUIDS. - The maintenance tolerance on normal and special tests shall be 1 percent of the indicated ~~volume~~ quantity. The acceptance tolerance on a normal test shall be 0.5 percent of the indicated ~~volume~~ quantity and on special tests, 1 percent of the indicated ~~volume~~ quantity.

Add Tables 1a and 2a to establish equivalent tolerances in pounds.

Table 1a.
TOLERANCES FOR VEHICLE-TANK MASS FLOW METERS EXCEPT FOR MEASURING MILK AND AGRI-CHEMICALS

Indication	On normal tests		On special tests
	Maintenance tolerance	Acceptance tolerance	Maintenance and acceptance tolerance
(Pounds)	(Pounds)	(Pounds)	(Pounds)
500	2	1	2
over 500	Add 0.0022 pound per indicated pound over 500	Add 0.0011 pound per indicated pound over 500	Add 0.0043 pound per indicated pound over 500

Table 2a.
TOLERANCES FOR MASS FLOW METERS MEASURING MILK

Indication	Maintenance tolerance	Acceptance tolerance
(Pounds)	(Pounds)	(Pounds)
1,000	5	3
2,000	7	4
3,000	9	5
4,000	11	6
5,000	13	7
Over 5,000	Add 0.002 pound per indicated pound over 5,000	Add 0.001 pound per indicated pound over 5,000

Add the following two definitions from the LPG Code:

apparent mass versus 8.0 g/cm³. The apparent mass of an object versus 8.0 g/cm³ is the mass of material of density 8.0 g/cm³ that produces exactly the same balance reading as the object when the comparison is made in air with a density of 1.2 g/cm³ at 20 °C.

mass flow meter. A device that measures the mass of a product flowing through the system. The mass measurement may be determined directly from the effects of mass on the sensing unit or may be inferred by measuring the properties of the product, such as the volume, density, temperature, or pressure, and displaying the quantity in mass units.

331-4 W S.2.1. Vapor Elimination

(This item was withdrawn.)

This item has been withdrawn. More information is needed from the regional associations before further action can be considered. Aircraft refueling systems usually have special filters and separators for impurities and moisture. Liquid should not flow back through these filters because the back-flow would put impurities back into

the liquid. Additionally, the Committee was advised that commercial aircraft are fueled based upon weight. Information is needed on the fueling of small aircraft. It seems reasonable that some effective means of vapor elimination is still required.

331-5 W T.2. Tolerance Values, Split-Compartment Tests

(This item was withdrawn.)

This item has been withdrawn. Data has been collected, but not yet analyzed. Action may be considered next year.

332 Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices Code

332-1 W S.3.1. Diversion of Measured Liquid

(This item was withdrawn.)

Paragraph S.3.1. currently prohibits the simultaneous flow of liquid from two outlets. A proposal was made to permit the simultaneous flow of product when a top-filled truck and trailer are loaded at a wholesale terminal or the product is measured through one meter and purchased by one party. This would permit the truck and the trailer to be filled simultaneously.

More justification is needed before action is considered on a national basis. Consequently, this item was withdrawn.

332-2 W Changes to Recognize On-Board Weighing Systems

(This item was withdrawn.)

This item has been renumbered to place it in the Scales Code listing, consequently, item 332-2 has been withdrawn.

332-3 W T.2. Tolerance Values

(This item was withdrawn.)

Test data has been received showing that LPG liquid meters can meet smaller tolerances than those currently specified in Handbook 44. The test results for 586 meters analyzed to the proposed tolerances indicate that over 72 percent of the meters would pass the proposed tolerances. Using the current tolerances, over 85 percent of the meters would pass the normal test and 75 percent would pass the special tests.

The Committee is not convinced that the reduced tolerance would increase the overall accuracy of meters. The compliance rate on LPG meters is still relatively low. It is thought that the reduced tolerance would only increase the rejection rate of meters because the inherent accuracy of the meters to measure LPG liquid is believed to be limited to what is observed today. Consequently, the Committee has withdrawn this item.

332-4 W UR.2.3. Vapor-Return Line

(This item was withdrawn.)

A proposal suggested that the vapor return line is no longer needed when filling modern LPG tanks using the current methods of fill. The proposal stated that a significant amount of product was returned to the supply tank through the vapor return line, resulting in a loss to the customer.

Comments have been received indicating that the vapor-return line is still needed on some equipment and under some temperature conditions. Prohibiting the use of the vapor return line appears to be premature. Consequently, the Committee has withdrawn this item.

333 Hydrocarbon Gas Vapor-Measuring Devices Code

333-1 VC S.3.2. Shutoff Valves

(This item was adopted as part of the consent calendar.)

The S.3.2. requirement for a shutoff valve should be a user requirement instead of a specification. Additionally, it is recommended that provisions should be made at the time of installation for testing the meters and to determine the pressure at the meter. The accuracy of a vapor meter measurement system depends on maintaining a constant pressure at the meter. There are tolerances on the permitted pressures that exist at a meter without applying a pressure correction. The only way the operating meter pressure can be verified is to measure the pressure at the meter. Provision for this measurement is contained in a new nonretroactive User Requirement UR.2.4.

The Committee recommends that S.3.2. be deleted and a paragraph UR.2.4. be added to read:

> ***UR.2.4. VALVES AND TEST TEE.-All gas meter installations shall be provided with a shut-off valve located adjacent to and on the inlet side of the meter. In the case of a single meter installation utilizing a liquefied petroleum gas tank, the tank service valve may be used in lieu of the shut-off valve. All gas meter installations shall be provided with a test tee located adjacent to and on the outlet side of the meter.***
> ***(Nonretroactive as of January 1, 1990)***

333-2 I Use of Heat to Vaporize the Liquid LPG

(This is an information item and was adopted when the report as a whole was ratified.)

A gas-fired heater is sometimes used to vaporize LPG prior to metering the vapor. A vaporizer may be used to generate a higher pressure to overcome the use of undersized piping in the vapor distribution system when the system is unable to supply adequate product to meet the demand. The vapor discharged from the vaporizers can be very warm (70 °F to 90 °F). It is suggested that a customer purchasing gas through a gas-fired vaporizer/metering system would pay for more gas than if the product were metered at ambient temperature.

The National Propane Gas Association (NPGA) has responded to this proposal stating that LPG tanks are located at least 50 feet from the nearest building or property line for safety and operational reasons. Thus, by the time the propane gas reaches the first gas meter, the gas temperature will be the same as if the gas were from a tank using natural vaporization. Consequently, the Association believes there is no justification to require temperature-compensating meters.

If the use of a vaporizer results in the vapor being measured at a higher temperature than would ordinarily exist for a system, then a temperature-compensating meter appears justified. However, the response from the NPGA indicates that a difference in product temperature may not exist. After the NPGA response, the Committee has received additional information showing installations that heat LPG vapor immediately before measurement

through an LP gas vapor meter. The Committee believes that these installations must be studied and recommendations made to correct what appear to be inappropriate installations.

333-3 W Recognize Mass Flow Meters

(This item was withdrawn.)

A proposal was made to modify several paragraphs of the Hydrocarbon Gas Vapor-Measuring Devices Code to permit the use of mass flow meters to measure hydrocarbon gas vapor. The Committee is concerned with the number of codes that are being changed to accommodate the use of mass flow meters. The Committee does not believe that each code should be changed to recognize mass flow meters; rather, consideration should be given to establishing a separate code for mass flow meters. To this end, the draft OIML requirements should be considered as a possible foundation for such a code.

Since there is no immediate need to recognize mass flow meters in this application, the Committee has withdrawn this item.

335 Milk Meters Code

335-1 V Mass Flow Meters

(This item was adopted.)

The use of mass flow meters to measure milk has been discussed in items 331-1 and 331-3. The Committee requests that the Liaison Committee contact the Federal Milk Marketing Administration to determine if there is a marketing problem whether using a positive displacement meter indicating in pounds based upon an 8.6 lb/gal conversion factor, a mass flow meter indicating the same weight as would be obtained on a vehicle scale, or a mass flow meter that would indicate based upon the conversion of 8.6 lb/gal. The Committee would like to see this issue resolved before the issue is brought to a vote in July.

The Committee recommends that the following changes be made to the Milk Meters Code.

S.1.1.2. UNITS. - A meter shall indicate and record, if the meter is equipped to record, its measurements in terms of gallons or pounds. Fractional parts of ~~these units~~ the gallon shall be in terms of decimal or binary subdivisions. Fractional parts of the pound shall be in decimal subdivisions. The mass shall be expressed as apparent mass versus a density of 8.0 g/cm^3.

S.1.1.3. VALUE OF SMALLEST UNIT. - The value of the smallest unit of indicated ~~volume~~ quantity and recorded ~~volume~~ quantity, if the meter is equipped to record, shall not exceed 0.1 gallon, 1 pint, or 1 pound.

[Editors Note: As a result of the adoption of the recommendations in this item and items 331-1 and 331-3, S.1.1.2. and S.1.1.3. will read as follows in the 1990 edition of Handbook 44:

S.1.1.2. Units. -

(a) A meter shall indicate, and record if the meter is equipped to record, its deliveries in terms of gallons or pounds. Fractional parts of the gallon shall be in terms of either decimal or binary subdivisions. Fractional parts of the pound shall be in decimal subdivisions.

(b) When it is an industry practice to purchase and sell milk by weight based upon 8.6 pounds per gallon, the primary indicating element may indicate in pounds and decimal pounds. The weight value division shall be a decimal multiple or submultiple of 1, 2, or 5. (See S.5.5.)

(c) The mass of milk measured through a mass flow meter shall be expressed as apparent mass versus a density of 8.0 g/cm³.

S.1.1.3. Value of Smallest Unit. - The value of the smallest unit of indicated quantity and recorded quantity, if the meter is equipped to record, shall not exceed the equivalent of:

(a) 1 pint or 1 pound when measuring quantities less than or equal to 1,000 gallons (8,600 lb), or

(b) 1 gallon or 10 pounds when measuring quantities in excess of 1,000 gallons (8,600 lb).]

S.1.4.2. PRINTED TICKET. - Any printed ticket issued by a device of the computing type on which there is printed the total computed price shall have printed clearly thereon also the total ~~volume~~ quantity of the delivery ~~in terms of gallons and~~, the appropriate fraction of the ~~gallon~~ quantity, and the price per ~~gallon~~ unit of quantity.

Add a new paragraph S.2.5. to address meters that may be affected by changes in product density.

S.2.5. MASS FLOW METERS ONLY. - An automatic means to determine and correct for changes in product density shall be incorporated in any mass flow metering system that is affected by changes in the density of the product being measured.

N.3. TEST DRAFTS. - Test drafts should be equal to at least the amount delivered by the device in 1 minute at its maximum discharge rate, and shall in no case be less than 100 gallons or 1,000 pounds.

T.2. TOLERANCE VALUES. - Maintenance and acceptance tolerances shall be as shown in Tables 1 and 2.

Table 2
TOLERANCES FOR MASS FLOW METERS FOR MEASURING MILK

Indication (Pounds)	Maintenance tolerance (Pounds)	Acceptance tolerance (Pounds)
1,000	5	3
2,000	7	4
3,000	9	5
4,000	11	6
5,000	13	7
Over 5,000	Add 0.002 pound per indicated pound over 5,000	Add 0.001 pound per indicated pound over 5,900

UR.2.2. PRINTED TICKET. - Any printed ticket issued by a device of the computing type on which there is printed the total computed price, the total ~~volume~~ quantity, or the price per ~~gallon~~ unit of quantity, shall also show the other two values (either printed or in clear script).

Add the following two definitions from the LPG Code:

apparent mass versus 8.0 g/cm³. The apparent mass of an object versus 8.0 g/cm³ is the mass of material of density 8.0 g/cm³ that produces exactly the same balance reading as the object when the comparison is made in air with a density of 1.2 g/cm³ at 20 °C.

mass flow meter. A device that measures the mass of a product flowing through the system. The mass measurement may be determined directly from the effects of mass on the sensing unit or may be inferred by measuring the properties of the product, such as the volume, density, temperature, or pressure, and displaying the quantity in mass units.

342 Lubricating-Oil Bottles Code

342-1 VC Delete the Entire Code

(This item was adopted as part of the consent calendar.)

A proposal was received to delete this code since the use of lubricating-oil bottles is rare. Since there have been no comments suggesting a need to retain this code, **the Committee recommends that the Lubricating-Oil Bottles Code be deleted.**

347 Berry Baskets and Boxes Code

347-1 I Test Procedures For Berry Baskets and Boxes

(This is an information item and was adopted when the report as a whole was ratified.)

The specific test procedures used by the NIST Office of Weights and Measures have not been published and may not be known to some manufacturers of berry baskets and boxes or to many weights and measures officials. This item was not on the Interim Meeting agenda but the Committee has been requested to include the procedure in its report. Because the item was not on the agenda, the Committee is presenting it as an information item. If comments indicate that the test procedures should be included in Handbook 44, the Committee will address the issue again in 1990.

Test Procedures and Guidelines

1. Many plastic berry baskets have ridges in the sides of the boxes to give them strength. These ridges are too narrow to provide any usable space in terms of containing any berries or small fruits. Consequently, the ridges are taped over with thin transparent tape so that the rape seed does not occupy the ridges when the berry baskets are tested for capacity during type evaluation.

2. In most cases, the ridges have been formed into the walls of the basket such that they extend outward beyond the inside edge of the walls of the basket. This is considered appropriate. Ridges that are formed to the inside of the basket are not acceptable because they reduce the capacity of the basket. Ridges to the inside of the basket prevent the berries and fruit from reaching the walls of the basket in the vicinity of the ridges.

3. A funnel placed above the berry basket is filled with rape seed. The rape seed is then allowed to flow into the berry basket and overflow so that all corners of the basket are filled.

4. The rape seed is struck off using a three-stroke "sawing" motion as is done for a grain-test measure.

5. The rape seed remaining in the berry basket is poured into graduated flasks and cylinders to determine the volume of rape seed that was held in the basket.

6. As prescribed in paragraph T.2., 10 measures are selected from a lot of 25 or more berry baskets for the test.

7. Water is not to be used as a test medium. A limited number of tests comparing the capacity of a basket using water and rape seed have indicated that water results in a systematically higher capacity value than

does rape seed. This difference is attributed the fact that water fills the space along the walls of the basket that is left open by the rape seed, and more bulging of the basket due to the greater density of the water than for rape seed.

351 Wire- and Cordage-Measuring Devices Code

351-1 VC S.1. Units

(This item was adopted as part of the consent calendar.)

Paragraph S.1. limits the units to feet or feet and inches. It is appropriate to permit wire or cordage meters to measure in yards and meters as well as feet.

The Committee recommends that S.1. be amended to read:

S.1. UNITS. - A wire- or cordage-measuring device shall indicate lengths in terms of feet, ~~feet and inches~~, yards, or meters or combinations of units of the same measurement system, and shall have minimum increments with values that do not exceed the equivalent of 0.1 yard, or, if metric, 0.1 meter.

354 Taximeters Code

354-1 VC S.7. Long Term Power Interruption, Electronic Taximeters

(This item was adopted as part of the consent calendar.)

When the revision to the Taximeters Code was adopted in 1988, it contained this paragraph for a new requirement. The nonretroactive and retroactive dates were based on the original date when the revision was drafted and were not revised when the requirement was adopted.

It has been brought to the attention to the Committee that none of the current models of taximeters can meet this requirement, therefore, the taximeter manufacturers need additional time to incorporate this feature into the taximeters. The Committee still believes the requirement is needed, but to provide the manufacturers additional time to modify their taximeters to meet this requirement, the Committee recommends that the nonretroactive and retroactive dates be changed as shown below:

S.7. LONG TERM POWER INTERRUPTION, ELECTRONIC TAXIMETERS. After a power interruption exceeding 10 seconds, the fare and extras indications shall return to the previously displayed indications and shall not be susceptible of advancement until the taximeter is cleared.
[Effective and nonretroactive as of January 1, ~~1989~~ 1994. Retroactive after January 1, ~~1994~~ 1999.]

355 Timing Devices Code

355-1 I Parking Meters; Dropping of Remaining Time

(This is an information item and was adopted when the report as a whole was ratified.)

Some parking meters cancel the remaining portion of time on a meter when a coin in inserted and the mechanism is activated. This can happen on electronic meters depending upon the programming, but it is believed to be fairly common on the more prevalent mechanical meters. This operation is considered inappropriate because the meters do not comply with the tolerances when tested for accuracy.

Dropping of additional time on a meter may be desired by a municipality to prevent one person from taking advantage of time purchased by another. However, the issue then arises as to whether a new customer is entitled to the time purchased by a previous customer, or if purchased time may be used by any customer after it has once been purchased. This argument is irrelevant if the same customer returns to purchase additional time: the customer should not have to pay twice for some of the same parking time.

The Committee agrees that time should be additive. There are limitations on the accuracy of mechanical parking meters. There are probably a large number of meters already in service that drop any time that remains on the meter. Weights and measures officials are requested to investigate this issue and provide information to the Committee or the regional weights and measures associations so that the issue can be thoroughly reviewed before a recommendation is presented to the Conference.

355-2 W Computerized Parking Meters

(This item was withdrawn.)

Several types of computerized parking meter systems are installed in parking lots. One system can service many parking spaces. The Committee was requested to determine if additional requirements are needed to address these systems.

No comments were received on this item and little information was provided with the initial proposal. Consequently, the Committee has withdrawn this item.

356 Grain Moisture Meters Code

356-1 VC N.1.1. Transfer Standards

(This item was adopted as part of the consent calendar.)

The USDA Federal Grain Inspection Service (FGIS) uses a single type of grain moisture meter in its official grain inspection. They use a meter-to-meter intercomparison method to test the accuracy of their meters. The USDA/FGIS has compared this test method with the method specified in N.1.1. The results have shown that the meters were within the tolerances specified in Handbook 44.

Under these special conditions, the procedures used by the FGIS maintain accuracy with the official air-oven method and may continue to be used. However, because of the stringent controls applied by FGIS under the limitation of using only one type of meter, this method of testing is not considered appropriate for any other agency. The Committee recommends that a footnote be added to N.1.1. and N.1.2. as follows:

N.1.1. TRANSFER STANDARDS*

N.1.2. MINIMUM TEST*

***The U.S. Department of Agriculture, Federal Grain Inspection Service (FGIS) uses a single brand and model of moisture meter for official inspection of moisture content in grains and other commodities. The calibrations for the model are based on the official air-oven method and are developed and monitored on an established schedule using a broad range (with respect to geographical source, kind, class, moisture content, maturity, etc.) of grain samples at its central laboratory. The FGIS uses a hierarchical series of meter-to-meter intercomparisons to determine whether its field meters are operating within acceptable tolerances (±0.2% with respect to standard meters). It has been shown that field meters checked by FGIS procedures perform within H-44 maintenance tolerances (T.2.) when tested (N.1.) using official grain samples. Agencies lacking a sample capability representing the entire nation and traceable to the official laboratory reference method shall not use meter-to-meter field testing.**

356-2 I N.1.3. Temperature-Measuring Equipment

(This is an information item and was adopted when the report as a whole was ratified.)

The accuracy requirements for field standard thermometers are very stringent. The thermometers that meet these requirements cost from $50 to $120 each. The potential for breakage of glass thermometers used for this purpose is high. The Committee was requested to review the required accuracy of thermometers to determine if the application would permit less stringent requirements for the reference thermometers.

The justification for the specified accuracy is that 1 °F represents 0.05 percent in moisture which can have a significant effect on the grading of grain, hence on the price paid to the farmer.

The Committee does not have sufficient information to evaluate this issue and requests additional information to justify the current accuracy requirement.

360 Other Items

360-1 I Electric Watthour Meter Code

(This is an information item and was adopted when the report as a whole was ratified.)

This was item 360-1 in 1988. The Committee received comments from the Electricity Metering Committee of the American National Standards Institute (ANSI) advising against the adoption of this code for technical reasons. The primary concern was that the ANSI standards were much more extensive than the draft code and the establishment of different standards would not promote uniformity in standards.

The Committee agrees with the ANSI comments. The ANSI standards are much more extensive than the draft code and address many topics related to the safety and installation of electric watthour meters that are not covered in the draft. Additionally, ANSI is in the process of developing a standard for electronic watthour meters. The Committee does not believe it has the expertise to adequately review and propose standards on these meters. The Committee recommends that any State that needs standards and test procedures for electric watthour meters should consider adopting the ANSI standards.

360-2 I Carbon Dioxide Liquid Meter Code

(This is an information item and was adopted when the report as a whole was ratified.)

The draft carbon dioxide liquid meter code was information item 360-2 in 1988. The Committee has received specific suggestions to modify this code to make it more general.

The changes suggested for the code appear to be appropriate, but the Committee did not have sufficient time to review the proposed changes. Several States have reported an increase in the delivery of liquid carbon dioxide measured through a liquid meter and support the adoption of this code. Consequently, the Committee recommends that the Draft Carbon Dioxide Liquid Meter Code continue to be studied for further consideration in 1990.

360-3 W Compressed Natural Gas

(This item was withdrawn.)

Compressed natural gas is used as a motor fuel for some highway vehicles. Mass flow meters are one type of meter used to measure the compressed natural gas. Handbook 44 does not provide specific tolerances for this type of application. Specific requirements must be developed, if necessary, and the proper tolerance must be determined. A decision must be made if these systems should meet the accuracy required of retail motor-fuel

dispensers which are used to measure liquid fuels for the same type of application, or if tolerances for the hydrocarbon gas vapor-measuring devices should be used. The latter tolerances are quite large.

This issue, along with Item 332-2, raises a philosophical question of how the various codes and tolerances of Handbook 44 should be applied to devices. Should a device be classified into a code based upon its application or the technology of its design? Should a mass flow meter have different tolerances based upon the product being measured?

Canada has a set of requirements for these devices; however, the Committee did not have sufficient time to review the requirements to determine if they could be adopted into Handbook 44. The Canadian standard specifies a tolerance of 1 percent when the devices are tested under the reference conditions for temperature and pressure, a tolerance of 2 percent when the tests are at other than the reference temperature, and a tolerance of 1.5 percent when tested at other than the reference pressure.

Additional study is required before action can be recommended. Consequently, the Committee has withdrawn this item.

360-4 I OIML Report

(This is an information item and was adopted when the report as a whole was ratified.)

The following information was provided by Mr. O. K. Warnlof, Office of Standards Management, NIST.

PS7 WEIGHING INSTRUMENTS (responsibility U.S.A.)

The activities of Pilot Secretariat (PS) 7 have been rather extensive over the past years and will continue to be so in the coming years. The following is an overview of past and future activities of each Reporting Secretariat (RS) of PS7 "Weighing Instruments."

RS2 ELECTRONICS (responsibility U.S.A.)

The U.S. National Working Group (USNWG), comprised primarily of SMA members, worked diligently over the past 5 years, through many meetings of both the IWG and USNWG and many pre-draft documents in the development of Draft IR74. This document was accepted by the IWG's of RS2 and PS7 in Copenhagen, in June 1985, and then in April 1986 by CIML. Two durability tests were included in the document, with the proviso that they be considered provisional until it could be determined that they are appropriate by justifying data. A humidity test was to be conducted for 10 days at an RH of 93 percent and a temperature of 40 °C. A high heat temperature test was also to be conducted for 10 days, at 50 percent RH and at a temperature of either 55 °C or 70 °C. It was the responsibility of the member nations to obtain valid data to justify the appropriateness of these or any other durability tests to be included in the document. It was their responsibility to conduct these tests and report the results to the RS (the U.S.) so that a final decision could be made prior to submitting the document to the 8th International Conference held in October 1988.

In January 1987, a memo was sent to all the collaborating nations requesting their response to certain questions on these tests as well as the performance tests that were included in the document. In response to the question "Do you currently perform the durability tests?," only one (Hungary) of the 15 responding nations answered affirmatively. In response to the question "What are your comments regarding the suitability of the durability tests?", all but one responded that they were <u>not</u> useful. In response to the question "Do you intend to conduct these tests within the next 2 years?", two responded "maybe" and two responded "only if required by EEC regulations."

On the basis of these responses, the U.S. sent a memo to all the collaborating nations, recommending certain revisions to the performance tests, requesting their vote on maintaining or deleting the durability tests from the draft IR74 and replacing them with the following:

> This annex is intended to specify the durability tests for electronic weighing instruments. At the time of the adoption of the IR it was not yet possible to include the appropriate durability tests.

The memo also announced that a meeting of the IWG was to be held in May 1988 in Copenhagen to fully resolve these issues. Of the 19 participating members, 15 responded. There were 12 votes for deletion of the durability tests from the document, and 3 for maintaining them. Of the eight observer nations, four responded, recommending deletion. The three nations voting to maintain were FRG, France, and the U.K. FRG and France, in their responses, clearly indicated that, regardless of the results of the vote, they were going to maintain the two durability tests in the combined draft IR. They stated further that "at this critical moment...it's essential for OIML to establish cooperation and compatibility with EEC regulations." In addition, Bernard Athane (cannot vote) of BIML also sent a response in which he clearly agreed with the responses of FRG and France.

Nonetheless, a clear majority for deletion was obvious and, on January 14, 1988, the U.S. circulated the results of the vote to the member nations, stating further that these two tests were to be deleted from the document and that no reference should be made to durability tests in any PS7 document since this was a vertical decision impacting on all PS7/RS work.

Meeting of OIML PS7/RS2 "Electronics"

The meeting was held in Copenhagen in May 1986 in conjunction with PS2/RS6. The meeting was attended by 31 persons, essentially the same as those in attendance at the meeting of PS/RS6 (referenced in report of PS2/RS6 meeting). The meeting was called mainly to finalize the issue of durability tests and to complete any other revisions to the draft IR74 "Electronic Weighing Instruments" before submission to the International Conference.

The durability tests were deleted from the document and the recommended alternative statement was accepted.

The other changes agreed upon were mostly editorial, some so that the terminology was consistent with IEC documents. The only subjects voted on were issues on A.3.7. Electromagnetic Susceptibility Test. One issue was the field strength at which the tests were to be conducted, 3 V/m or 10 V/m. 3 V/m prevailed 10 -1. Another was to change the field strength from 1 V/m to 3 V/m at a frequency range of 500 - 1000 MHz. 1 V/m prevailed by a vote of 6 - 4 with 1 abstention. Another was to eliminate tests at the first range of from 0.1 to 27 MHz. Maintaining this level prevailed by a vote of 10 - 1.

Future Work of PS7/RS2

IR74 was adopted by the 8th International Conference. The combined document with the two durability tests was also adopted. However, a caveat was included that work towards a revision should begin immediately, and that any future decision made by PS7/RS2 that modifies IR74 should be reflected in modifications to the combined document.

A meeting of the USNWG was held February 21, 1989, at NIST. It was decided to eliminate the durability tests and to amend 3.1.3. so that all digital electronic devices must be equipped with durability protection features. Several other amendments, mostly editorial in nature, were agreed upon. These decisions will be circulated to the IWG for their review and comment and a meeting of the IWG will be scheduled for the spring of 1990 where, it is hoped, a consensus can be achieved on the amendments to R74. Support from the U.S. private sector is essential.

Meeting of OIML PS2/RS6 "Electronic Measuring Instruments"

The meeting was attended by 33 persons representing 11 participating Nations, (6 members of the European Economic Community - (EEC), 1 observer Nation and 4 Liaison International Institutions). This meeting was called by the Netherlands to discuss revisions to ID11 "Electronic Measuring Instruments," and, as all other meetings of this IWG, was scheduled together with PS7/RS2.

The major revisions agreed upon are as follows:

There were several revisions in the terminology section, primarily made so that the terms were consistent with the ISO and CENELEC vocabularies. The remaining revisions were made to the annex which is the part of the document specifying the tests to be conducted. The major changes are as follows:

- In all of the tests, the references to IEC standards were updated and the method used to reference these standards was changed.

- A.2.6.2. D.C. Power Supply Test will be added. Sweden will provide the secretariat with the appropriate IEC test method.

- A.2.8.1. Spikes Test was deleted.

- The recommended tests for harmonics and magnetic fields were not included, but the titles are to remain with the notation that they are still under consideration.

The major points raised during the discussion on durability tests are:

A lengthy discussion was held concerning the five durability tests that were recommended by Denmark. The tests recommended were High Heat (55 °C - 10 days), Humidity (93 percent, 40 °C - 10 days), Corrosion, Random Vibration, and Sinusoidal Vibration. On a vote of eight to three it was decided that they not be included, but that the reference to durability tests should remain in the document with the notation that appropriate durability tests were not yet available.

PS7/RS4 "NON-AUTOMATIC WEIGHING INSTRUMENTS" (Responsibility FRG and France)

The combined document was adopted by the 8th International Conference as R76-1 and R76-2 (pattern evaluation test report form). The U.S., Austria, and Italy voted against the document; India and the Netherlands abstained. The proviso that was included as a part of the durability tests is as follows:

> During the discussions on IR74 as regards durability tests, it was decided that it was not possible at present to prescribe durability tests applicable to all weighing instruments; however, work will continue by PS7/RS2 to define such tests. In the interim, a reporting secretariat responsible for a given category of weighing instruments may develop durability tests for that category of weighing instruments to the extent possible, but such tests will have to be harmonized with any future requirements of IR74.

The RS has called a meeting of the IWG to be held May 21 - 23, 1990, in Braunschweig. Recommendations for revision to R76 are requested and a meeting of the USNWG will be held in February or March 1990 to prepare for the meeting of the IWG. Once again, strong participation by the U.S. is essential and, of course, our work on R74 must precede any effort on their part if we are going to eliminate the undue influence of FRG, France, and Denmark.

PS7/RS5 "AUTOMATIC WEIGHING INSTRUMENTS" (responsibility U.K.)

A meeting of the IWG was held in April 1988 in Teddington. The Fourth Pre-Drafts on Automatic Bulk Weighing Systems and Dynamic Railway Track Scale were discussed. Some progress was made; however neither document was accepted. Fifth Pre-Drafts were received from the RS in late December 1988 and circulated to the USNWG for review. A meeting of the USNWG was held on Wednesday and Thursday, February 22 and 23, 1989, at NIST to discuss these documents and to prepare a U.S. position for the meeting of the IWG to be held at NWML in Teddington, April 10 -14, 1989.

At the meeting of the IWG, the two Fifth Pre-Drafts were accepted with some modifications. They will be circulated in July or August, 1989 for vote by the RS and the PS.

At the April 1988 meeting of the IWG, a short day's discussion was held on a Draft Revision of IR50 "Belt Weighers." A few decisions were reached that were consistent with U.S. views. A Second Draft Revision was received from the RS in January, 1989, and distributed to the USNWG for review and a meeting to formulate a U.S. position was held Friday, February 24, at NIST. At the meeting of the IWG in April, 1989, after 2 1/2 days discussion, some progress was made on the document with many U.S. points being accepted. The RS will circulate a Third Draft revision before the end of 1989 and a meeting of the IWG will be held in the spring of 1990.

PS7/RS8 "LOAD CELLS" (responsibility U.S.A.)

A revision of IR60 was completed at the last meeting of the IWG, held in Teddington, in April 1988. This has been forwarded to BIML for circulation to CIML for final approval.

This revision is, for the most part, consistent with the views of U.S. industry. Its success is an indication of what can be achieved by the active role played by the U.S., and especially SMA participation.

SYMBOLS (responsibility BIML)

BIML has assumed responsibility for this work. The U.S. comments on the Third Preliminary Draft were mainly that the use of italics and subscripts in symbols were difficult to reproduce. We are awaiting a Fourth Pre-Draft.

PS5D "DYNAMIC MEASUREMENT OF QUANTITIES OF LIQUID"

PS5D/RS10 "DIRECT MASS FLOW MEASUREMENT OF QUANTITIES OF LIQUIDS"

At the September 1987 meeting of the CIML, it was decided that a new Reporting Secretariat should be established to deal with mass flow measuring instruments. This new secretariat is PS5D/RS10 "Direct Mass Flow Measurement of Quantities of Liquids" with the United States as the responsible member nation.

A First Pre-Draft IR "Direct Mass Flow Instruments for Measuring Quantities of Liquids" was developed by the U.S. National Working Group. In October 1988, this First Pre-Draft was circulated to the IWG for comment by February 17, 1989.

A meeting of the USNWG was held Tuesday, February 28, 1989, at NIST, to review the comments received and to develop a U.S. position in preparation for the meeting of the IWG.

A meeting of the International Working Group was held Wednesday and Thursday, April 5 and 6, 1989, at the National Weights and Measures Laboratory, Teddington, England, to discuss this document and the comments received. Considerable progress was made with most of the U.S. philosophy being accepted.

A meeting of the USNWG was held June 1, 1989, at NIST during which a Second Pre-Draft was developed. It will be circulated to the USNWG for review and comment in August, and a meeting will be held in the fall of 1989 to finalize it. It will then be circulated to the IWG for review and comment and a meeting of the IWG will be scheduled for the spring of 1990.

This pre-draft is intended to be a "stand-alone" document to include all requirements applicable to direct mass flow measuring instruments. It incorporates what the U.S. considers to be all of the applicable requirements from IR's 5, 27, 57. It will also include specific requirements applicable to electronic instruments from the Draft IR "Electronic Devices Applied to the Measurement of Volumes of Liquids" just accepted by the IWG for PS5D/RS6 at it's meeting held in April, 1989 in Paris.

PS5D/RSS6 "ELECTRONIC DEVICES APPLIED TO THE MEASUREMENT OF VOLUME OF LIQUIDS"

A meeting of the IWG was held in November 1987, in which the U.S. did not participate, to discuss the Second Pre-Draft. A Third Pre-Draft was received in February, 1989 and a meeting of the USNWG was held March 6, 1989 at NIST. A U.S. position was developed and presented at the meeting of the IWG held April 17 - 18, 1989 in Paris. During that meeting, after some amendments, the 3rd Pre-draft was accepted. It has now been circulated as a Draft IR to the USNWG for vote.

PS5D/RS1 "METERS AND MEASURING SYSTEMS FOR LIQUIDS OTHER THAN WATER WITH MEASURING CHAMBERS OR WITH TURBINES"

A meeting of the IWG was held April 19 - 21, 1989 in Paris. The document under discussion was 1st Pre-draft "Measuring Assemblies For Liquids Other Than Water," a compilation with some revisions of existing R's 5, 27, 57, 67, 77, and the applicable requirements from the electronics document. A lengthy discussion (2 days) was held on maximum permissible errors (mpe)and as a result, an ad-hoc committee was established to deal with

this issue. The pre-draft has been circulated to the USNWG for review and comment and a meeting will be held in November/December, 1989 to finalize U.S. comments. A meeting of the IWG has been scheduled for April 1990 in Paris for further work on this document and the mpe issue.

PS5D/RS7 "METHODS AND DEVICES FOR VERIFICATION OF MEASURING INSTRUMENTS FOR LIQUIDS"

A First Pre-Draft IR "Testing Procedures for Pattern Examination of Fuel Dispensers for Motor Vehicles" has been circulated for comment. Only a few comments were received. We are awaiting further action by the RS.

Future Work

Over the next year there will be several meetings held and documents to be reviewed to establish U.S. positions. They are listed here according to the particular Pilot and Reporting Secretariat for your convenience.

PS5D "Dynamic Liquid Measurement"

RS1 "Meters And Measuring Systems"

2nd Pre-draft (PD) "Combined Document" to be circulated by January 15, 1990.

Meeting of U.S. National Working Group (NWG) in February or March 1990, NIST.

Comments on 2nd PD by March 1990.

Meeting of International Working Group (IWG) in April 1990, Paris.

RS7/9 "Methods And Devices For Verification"/"Vortex Meters"

2nd PD "Test Procedures and Standards Used for Dispensers."

2nd PD "Pipe Provers."

1st PD "Vortex Meters."

Due from RS for comment before meeting.

Meeting of IWG to be held November 6-10, 1989, Japan.

RS10 "Mass Flow"

Meeting of NWG "Mass Flow" October 23-24, 1989, NIST.

2nd PD "Mass Flow Meters" circulated for comment in December 1989.

Meeting of IWG "Mass Flow," April 1990, Paris.

PS7 "Weighing Instruments"

RS4 "Non-automatic Weighing Instruments"

1st PD Revision "R76" (combined requirements), to be circulated in February 1990.

Meeting of NWG in March 1990, NIST.

Meeting of IWG in May 1990, FRG.

RS5 "Automatic Weighing Instruments"

1st D IR "Hoppers" circulated to PS and USNWG for vote by November 1, 1989.

1st D IR "Dynamic RR Track Scales" (same as above).

3rd D Revision "Belt Weighers" due from RS in September 1989.

1st D Revision "Checkweighers" due from RS in September 1989.

Meeting of NWG "Belt Weighers and Checkweighers" in March 1990, NIST.

Meeting of IWG (Belt and Checkweighers) in April 1990, England.

RS2 "Electronic Weighing Instruments"

Meeting of NWG in March 1990 to discuss comments for revision to R74.

Meeting of IWG in May, 1990 in Europe to discuss revisions to R74.

R. Andersen, New York, Chairman

C. Carroll, Massachusetts
R. Helmick, Arizona
J. Truex, Ohio
D. Watson, Texas

H. Oppermann, NIST, Technical Advisor

Committee on Specifications and Tolerances

Report of the Committee on Education, Administration, and Consumer Affairs

Charles H. Greene, Chairman
Director, General Services
State of New Mexico

REFERENCE
KEY NO.

400 Introduction

This is the Final Report of the Committee on Education, Administration, and Consumer Affairs for the 74th Annual Meeting of the National Conference on Weights and Measures. The Report consists of the Interim Report offered in the Conference "Program and Committee Reports" as amended by the Addendum Sheets issued during the Annual Meeting.

Table A identifies all of the items contained in the Report by Reference Key Number, Item Title, and Page Number. Item 402-5 (identified in the table by **boldface print** and by the suffix "V") was the Committee's only voting item. It was adopted by a separate vote of the membership as follows: House of State Representatives - 46 yea, 0 nay ; House of Delegates - 78 yea, 0 nay. All other items, which are marked with an "I" after the Reference Key No., were informational and required no formal action by the membership. The membership adopted the report in its entirety as follows: House of State Representatives - 45 yea, 0 nay; House of Delegates - 77 yea, 0 nay.

Table A
Reference Key Items and Index

Table A (Continued)
Reference Key Items and Index

In addition, the Report contains three appendices that are related to specific Reference Key Numbers as follows:

Table B
Appendices

Details of All Items
(in order of Reference Key Number)

401 I Regional Weights and Measures Activities

The Committee reviewed and discussed the following reports:

1. The final report of the Education and Consumer Affairs Committee to the 31st Annual Technical Conference of the Western Weights and Measures Association (September 1988).

2. The final report of the Education Committee to the 43rd Annual Conference of the Southern Weights and Measures Association (October 1988).

3. The Final Report of the Committee on Education, Administration, and Consumer Affairs to the 16th Annual Conference of the Northeastern Weights and Measures Association (May 1988) (carried over from the 73rd NCWM).

4. NEWMA Proposal to the NCWM Education Committee from William Wilson, Clinton County, NY, dated October 27, 1988.

5. A letter from Steven A. Malone concerning comments on the Education Committee's Interim Report made at the Central Weights and Measures Association's meeting in April 1989.

6. The Final Report of the Committee on Education, Administration, and Consumer Affairs to the 17th Annual Conference of the Northeastern Weights and Measures Association (May 1989).

The reports of the Western and Southern Weights and Measures Associations contained recommendations concerning the use of the $10,000 allocated by the NCWM Executive Committee for the development of Train-the-Trainer materials, which were considered in the Education Committee's discussions on this topic (see Item 402-6).

The Committee discussed several items proposed by the Education Committee of the Northeastern Weights and Measures Association (NEWMA). The Committee's positions on the various proposals are as follows:

a. Development of a basic weights and measures module - NEWMA states that a course of the type it proposes is currently available from the Institute of Weights and Measures. Because a course of the type requested already exists, the Committee feels it can make better use of the grant funds it has received from NIST by developing new courses in other higher priority areas.

b. Development of a plan for combining Module 1, Retail Computing Scales - Mechanical, and Module 2, Retail Computing Scales - Electronic, into a single training program - At the current time, the Committee believes that there are enough differences between the devices covered in Modules 1 and 2 to justify separate modules; however, the Committee will reexamine its position if the NCWM significantly simplifies the tolerance structure for the types of devices covered in Modules 1 and 2 in response to proposals currently being considered by the S&T Committee.

c. Elimination of specific Continuing Education Unit (CEU) amounts for each module and award of variable amounts of credit based on the amount of time a state has to spend on a module - The number of CEU's to be awarded for each module is determined on the basis of recommendations from training experts and comments from participants in module field tests. (One CEU is equivalent to 10 hours of classroom instruction.) It is the Committee's feeling, therefore, that the hours specified by a module should be considered a minimum time for adequate presentation of the course. In addition, the Committee feels the proposed change would be in conflict with one of the NTP's primary objectives: to promote uniformity in the training of weights and measures officials. Consequently, no changes are planned in the method of assigning CEUs.

d. A change in policy to permit experienced officials who can pass module final examinations to be eligible for NCWM certification without taking classroom training - The NCWM's National Training Program was designed to combine classroom and field training for the uniform instruction of new weights and measures officials. The module examinations were, therefore, not intended to be an independent measure of knowledge in a particular area and should not be used for that purpose. Furthermore, the NTP is first and foremost a training program rather than a certification program -- the certification component of the program is simply the recognition given to participants for completing training and demonstrating the results of that training in the field. Consequently, waiving classroom training to facilitate the certification of experienced officials would be counter to the main purpose of the NTP. The Committee feels it has already made a significant concession by permitting a jurisdiction to waive the field training portion of a module in the case of experienced officials; to also waive the classroom portion of the module would make certification an almost meaningless gesture.

e. Reduction of the 100% correct criterion for tolerance tables in the scales modules to 80% correct - The Committee had received several recommendations, in addition to NEWMA's, to make changes in the requirements for the tolerance work sheets in the final exams of the various scale modules. At the Interim Meeting, Tina Butcher of the NIST Office of Weights and Measures presented a specific proposal for scoring the work sheets in the exams for Module 4, Medium-Capacity Scales, and changing the 100 percent correct criterion for the work sheets on the exams to 80 percent or better. Her proposal was adopted by the Committee. In

addition, the Committee decided to take some other steps to simplify the completion of the Module 4 work sheets, including allowing students to consult NIST Handbook 44 and the Examination Procedure Outlines when completing the work sheets and not requiring the completion of the "acceptable range of scale indication" portion of the work sheets during the exam. It was felt that these changes were necessary because of the complexity and number of work sheets in Module 4. Similar problems exist in Module 5, Vehicle and Axle-Load Scales, and Module 7, Livestock and Animal Scales; consequently, the same changes will be made to the exams in these modules. The Committee is considering making similar changes to Modules 1 and 2 on retail computing scales as these modules are revised. Materials explaining the changes to the exam work sheets in Modules 4, 5, and 7 have been sent to each State and to all purchasers of the modules. The changes are nonretroactive as of the date of the transmittal letter.

The Committee appreciates the detailed input on education issues that it has been receiving from the Regional Weights and Measures Associations.

402 National Training Program (NTP)

402-1 I NTP Status Report

The status of grant funds received from the National Institute of Standards and Technology as of June 30, 1989, was as follows:

Grant 1 - NB83NAHA4003

Net outlays to date:	$446,026.70
Total unliquidated obligations: (money committed to contractors)	4,000.00
Total outlays & unliquidated obligations:	450,026.70
Total grant funds authorized:	515,189.00
Unobligated balance of funds: (money available for future module development)	65,162.30

Grant 2 - 70NANB8H0869

Net outlays to date:	$ 25,000.00
Total unliquidated obligations: (money committed to contractors)	6,000.00
Total outlays & unliquidated obligations:	31,000.00
Total grant funds authorized:	120,000.00
Unobligated balance of funds: (money available for future module development)	89,000.00

The status of all training modules published or under development as of June 30, 1989, is given in Table C.

Table C
Training Module Status Report
(As of 6/30/89)

Module No.	Subject	Status
1	Mechanical Computing Scales	Project completed.
2	Electronic Computing Scales	Project completed.
4	Medium-Capacity Scales	Project completed.
5	Vehicle and Axle-Load Scales	Project completed.
6	Monorail Scales	Project completed.
7	Livestock and Animal Scales	Project completed.
8	Retail Motor-Fuel Dispensers	Project completed.
10	Package Checking	Project completed.
13	Hopper Scales	The working group is developing a new draft of the module.
19	Loading-Rack Meters	The first Contractor's draft of this module was reviewed by the Committee. The Contractor is now working on the field test draft of the module.
20	Vehicle-Tank Meters	Project completed.
21	LPG Liquid Meters	Project completed.
22	Commodity Regulations	Because of the extensive changes recommended as a result of the field test of this module, a second field test draft was prepared by the Contractor. The final version of the module is expected to be issued by late summer 1989.
23	Weights and Measures Admin.	Work on this module has been halted temporarily.
24	Introduction to Handbook 44	Project completed.
27	Electronic Weighing and Measuring Systems	Project completed.

402-2 I Certification Program Implementation

As of June 30, 1989, the following 48 jurisdictions had signed Letters of Agreement with the NCWM and had been accepted as participants in the NTP Certification Program:

Alabama	Louisiana	Oklahoma
Alaska	Maine	Oregon
Arizona	Maryland	Pennsylvania
Arkansas	Massachusetts	Puerto Rico
California	Michigan	South Carolina
Colorado	Minnesota	South Dakota
Connecticut	Missouri	Tennessee
District of Columbia	Montana	Texas
Florida	Nebraska	Utah
Georgia	New Hampshire	Vermont
Hawaii	New Jersey	Virginia
Idaho	New Mexico	Virgin Islands
Illinois	New York	Washington
Indiana	North Carolina	West Virginia
Iowa	North Dakota	Wisconsin
Kansas	Ohio	Wyoming

Information summarizing participation in the NTP Certification Program is provided in Appendix A.

402-3 I Registry Summary

A summary of information in the NTP Registry as of June 30, 1989, is found in Appendix B. The Registry serves as a permanent record of NCWM courses successfully completed and Continuing Education Units (CEUs) earned under the NTP.

402-4 I Module Revisions

A revision of Module 2, Retail-Computing Scales - Electronic, was completed by the Education Committee; however, the Committee decided not to distribute copies of the revision because of the significant changes to the Scales Code that were being considered by the Conference. After the NCWM's 1989 Annual Meeting, the Committee will reevaluate the status of the Module 2 revision. Module 10, Checking the Net Contents of Packaged Goods, will be the next module to be revised followed by Module 8, Retail Motor-Fuel Dispensers and Consoles.

402-5 V Training Program Implementation

(This item was adopted)

The Committee discussed problems and training program modifications that have occurred as states implement the NTP. An evaluation was made of the appropriateness of continuing to issue Continuing Education Units (CEU's) to states that have not signed Letters of Agreement with the NCWM. It was decided that CEU's should not be issued unless the Conference has some assurance that a specific module course was conducted in accordance with all of the requirements of the module. Consequently, the Committee recommended that the Conference adopt the following policy with regard to the awarding of CEU's:

Continuing Education Units will be awarded only to participants in NCWM module training classes that are given by or sponsored by States that have signed Letters of Agreement with the Conference to participate in the National Training Program Certification Program and thus have formally agreed to provide training in accordance with the instructor's manual in each individual training module.

Acceptance of this policy will mean that individuals in a State that has not signed a Letter of Agreement with the NCWM will no longer receive CEU's for module training given by that State but could receive CEU's for participating in module training given by another State that has signed a Letter of Agreement. If a State office of weights and measures has signed a Letter of Agreement with the Conference, officials in any jurisdiction within that State are eligible to receive CEU's unless they participate in a module course given by a State that has not signed a Letter of Agreement. Individuals who participate in NCWM module training courses given by independent training groups, Federal agencies, industry groups, or other groups that are not eligible to participate in the NTP Certification Program may receive CEU's if the training is sponsored by a State that is a participant in the Certification Program.

Another area of discussion was possible enhancements to the NTP. One suggestion adopted by the Committee was to propose the establishment of an NCWM award to recognize groups or individuals for their accomplishments in the area of training. (See Item 402-8 for details on this award.) The Committee also plans to develop a list of qualified individuals who are willing to assist State and local weights and measures jurisdictions by conducting training on NCWM modules. This list might consist of State or local trainers who had developed expertise in presenting a specific module or modules, independent training groups, retired weights and measures officials, or Federal Agency employees who are willing to provide module training.

A mailing was sent to all NCWM members asking for volunteers to be included on the trainers list. The mailing included a form requesting information from each volunteer on: background and qualifications relevant to the training program, names and numbers of the modules they are qualified and willing to teach, fees or expenses to be paid by the jurisdiction sponsoring the training, and any special restrictions on their services or requirements that must be met in order for them to teach a module. All individuals on the list will have to sign an agreement with the NCWM to present all NCWM module classes in accordance with the requirements in the modules.

402-6 I Development of Train-the-Trainer Materials

Various proposals for using the $10,000 allocated by the NCWM Executive Committee for development of train-the-trainer materials for weights and measures officials were discussed and evaluated. These proposals fell into two major categories: video tape presentations and live presentations. It was the consensus of the Committee that the most effective type of train-the-trainer course would consist of a live presentation by an instructor on effective training techniques followed by presentations by class members that simulate an actual training session. Consequently, the Committee considered sponsoring a series of one-time seminars in each of the four regions (as defined by the various weights and measures associations) that would follow the preferred format. However, it was determined that this approach would result in one-time training for a very small number of individuals because of funding limitations. In addition, some States indicated that it would be difficult for them to send any of their officials to an out-of-State training seminar.

Both the Western and the Southern Weights and Measures Associations recommended the use of video tapes to present train-the-trainer information. This would allow States to present in-house classes as often as desired to train new officials. The Committee therefore decided that the long term needs of the Conference would best be served by using the funds allocated by the NCWM Executive Committee to purchase a video-taped train-the-trainer course. This decision was endorsed by members of the Executive Committee during a joint meeting with the Education Committee.

Following the NCWM Interim Meeting, the Education Committee reviewed a videotape train-the-trainer course developed by the Industrial Training Corporation (ITC), a professional training organization that has helped the Conference write a number of its training modules. The course consists of 14 half-hour tapes on a number of training topics (see Appendix C for a complete list). Each tape comes with a Student Workbook and an Instructor Guide. The Committee concluded that the ITC course was a professionally done, comprehensive training program that had the flexibility to meet the varying needs of Conference members (for example, the course could be presented by an instructor or, if necessary, could be used as a self-study course). Consequently, the Committee purchased one set of the tapes and a supply of additional workbooks. It plans to loan the tapes to any jurisdiction upon request. Free copies of workbooks for the course will be supplied to course sponsors (subject to certain limitations). The Committee plans to distribute detailed information on the course and how to make arrangements to borrow it.

As noted above, the Education Committee believes that the most effective type of training would consist of a live presentation by an instructor and direct involvement by the students. Jurisdictions are encouraged to take advantage of this type of training whenever possible. Committee members were told that many State departments currently have train-the-trainer or similar types of training. For example, the Ohio Department of Agriculture sponsors a class on effective presentations that addresses topics of interest to trainers. Train-the-trainer courses are also offered by the U. S. Department of Agriculture Graduate School. USDA will send an instructor to your site and tailor a 1-, 2-, or 3-day train-the-trainer course to your needs for a reasonable fee. Independent training groups also offer a variety of courses for trainers. For more information about these courses, contact the Education Committee's Technical Advisor.

402-7 I Review of Field Test Draft of Module 24

The Committee reviewed the field test draft of Module 24, Introduction to NIST Handbook 44, and comments received from field tests in Maryland, California, Nebraska, North Carolina, and West Virginia. Changes were sent to the Contractor and a final version of the module was prepared. Copies of the module have been mailed to state weights and measures offices. Additional copies may now be purchased from the NCWM for $35 ($20 for the Inspector's Manual, $15 for the Course Administrator's Guide).

402-8 I NCWM Award for Training Achievements

The Education Committee's Interim Report proposed that the NCWM establish an Excellence in Training Award to recognize individuals or groups for outstanding achievements in implementing the NCWM National Training Program and enhancing the professional status of individuals in the weights and measures field. Several comments were received on the proposal; consequently, the Committee revised its description of the award as shown in Appendix D to reflect these comments. The Committee has received feedback from the Central and Northeastern Weights and Measures Associations on the award and would like to get additional feedback from the Western and Southern Weights and Measures Associations; therefore, it is withdrawing this item as a voting item and is requesting comments on the revised proposal.

403 I Review of Task Force on Fraud Recommendations

Recommendations of the NCWM Task Force on Fraud that were directed to the Education Committee were discussed. These recommendations included the following:

- Develop a uniform definition of fraudulent activities,
- Develop a uniform method of classifying types of fraudulent activities, and
- Establish a mechanism by which information on fraudulent activities could be collected and made available at the national level.

The Committee plans to address the various recommendations as time and other priorities permit. In the meantime, the Committee urges weights and measures directors to read the Task Force's report. Copies of the report (NCWM Publication 17) are available from the NIST Office of Weights and Measures.

404 I Safety (Joint Meeting with Liaison Committee)

Results of the Northeastern Weights and Measures Association's safety survey were reviewed and discussed. The preliminary data gathered by NEWMA provided some excellent information on ways to increase the safety of weights and measures officials. Consequently, the Committee believes the work of the NEWMA Safety Sub-Committee should be continued at the national level. The Education Committee joins the Liaison Committee in recommending that the NCWM Chairman appoint a task force to study safety awareness, training, and problems and make recommendations to the Conference on ways to enhance the safety of individuals in the weights and measures field.

405 I Review of NTP Production Schedule/Planning

The Committee reviewed the list of high priority modules that was compiled as a result of the NCWM's Education Survey in 1987 and decided to pursue the development of the following modules:

Weights and Measures Administration
Communications
Test Equipment (calibration and use)
Hopper Scales.

Anyone who would like to contribute to the development of these modules should contact the Committee's Technical Advisor.

C. Greene, New Mexico, Chairman

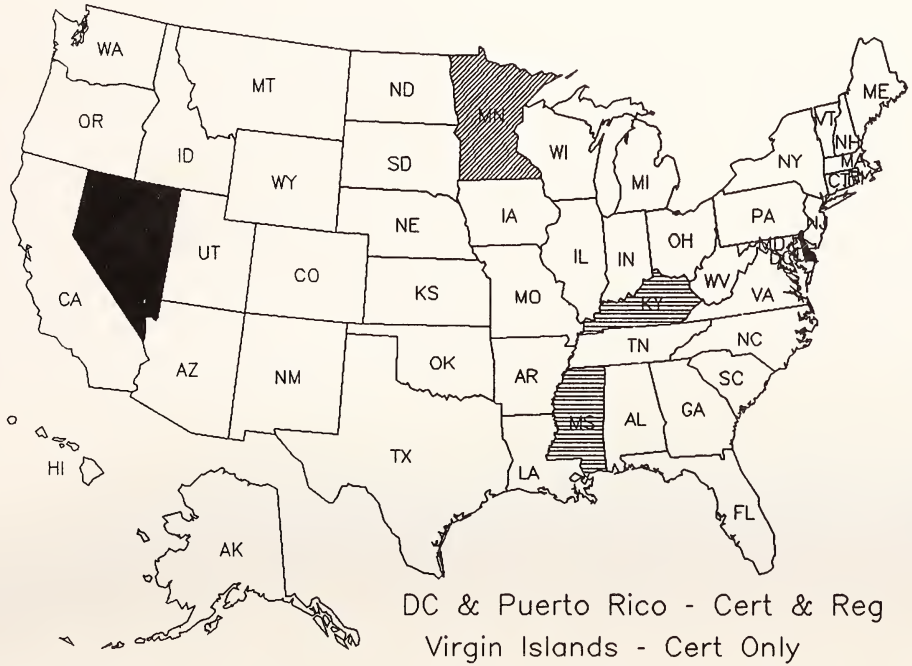
G. W. Diggs, Virginia
M. Gray, Florida
R. Kalentkowski, Connecticut
S. Malone, Nebraska

J. Koenig, NIST, Technical Advisor

Committee on Education, Administration, and Consumer Affairs

APPENDIX A

STATE PARTICIPATION IN THE NATIONAL TRAINING PROGRAM
As of 6/30/89



DC & Puerto Rico - Cert & Reg
Virgin Islands - Cert Only

Legend

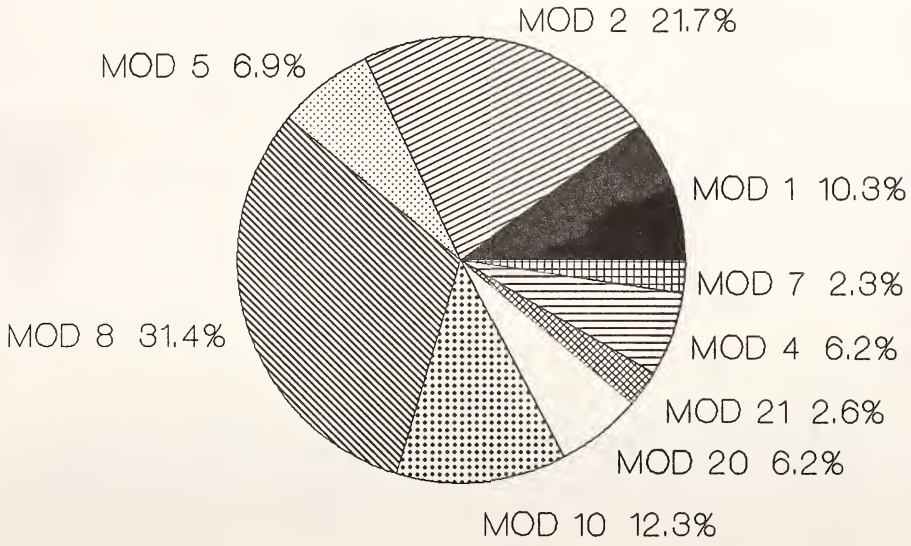
- Certif. & Registry
- Certification Only
- Registry Only
- Nonparticipant

Certification Summary

(Certificates Issued by Module by State)
As of 6/30/89

State	Total No. of Certif.	Total No. of People	Modules 1	2	4	5	7	8	10	20	21
AL	16	13			12			4			
AK	10	10						10			
AZ	28	28		28							
AR	118	35	20	20		8	4	34	12	17	3
CT	55	21		15	18	2			15	3	2
DC	3	3						3			
FL	16	12	6	3					7		
GA	8	8				8					
ID	9	9						9			
KS	18	9	7	7		4					
LA	1	1							1		
MI	42	14				9	12			14	7
MN	15	15						15			
MO	21	20						2	19		
NE	24	12		2				12	10		
NH	30	8	6	5	5			6		8	
NM	6	6		1				5			
ND	3	3						3			
OH	39	37				4		34	1		
OR	47	16	16	15				10	6		
PR	65	47		32				33			
SD	27	12			7	12		7	1		
UT	54	16	15	15				11	12		
VA	2	2									2
WA	21	16		5				16			
WI	4	4									4
26	690	377	70	148	42	47	16	214	84	42	18

Module Certification
(Percentage of Total)



Data as of 6/30/89

APPENDIX B

National Training Program Registry
Summary of Activity

(As of June 30, 1989)

Courses Listed in Registry:

Module 1, Retail Computing Scales - Mechanical
Module 2, Retail Computing Scales - Electronic
Module 4, Medium-Capacity Scales
Module 5, Vehicle and Axle-Load Scales
Module 6, Meat Beams and Monorail Scales
Module 7, Livestock and Animal Scales
Module 8, Retail Motor-Fuel Dispensers and Consoles
Module 10, Checking the Net Contents of Packaged Goods
Module 20, Vehicle-Tank Meters
Module 21, LPG Liquid-Measuring Devices
Module 24, Introduction to NIST Handbook 44
Module 27, Introduction to Electronic Weighing and Measuring Systems

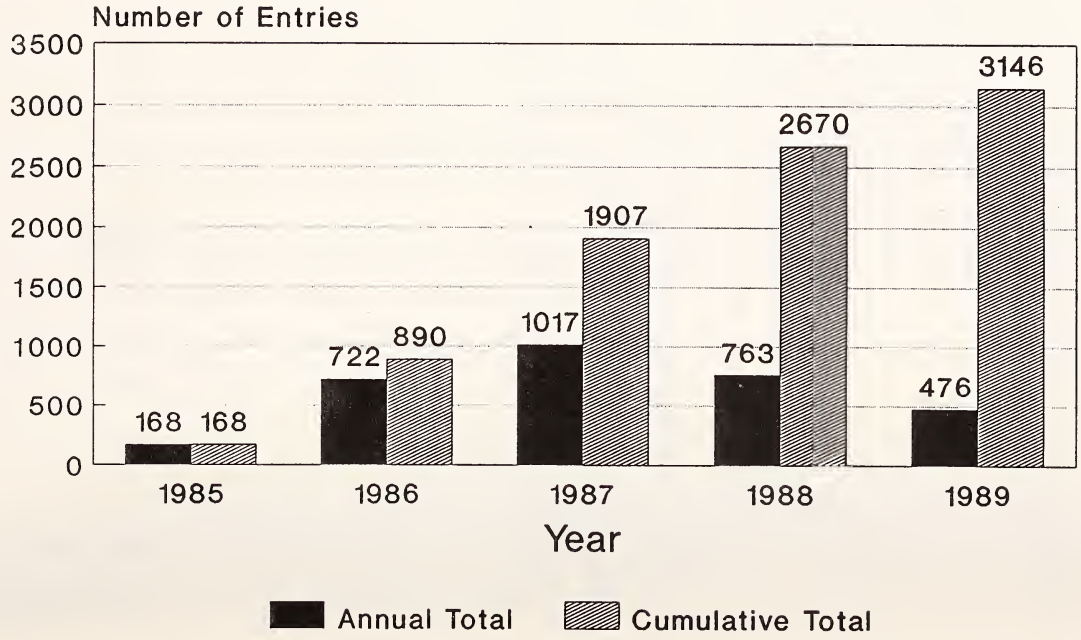
Individuals Trained - By Module

State	Module 1	2	4	5	6	7	8	10	20	21	24	27	Totals
AL		15	12	4			14					25	70
AK							10	8					18
AZ		27				6		17		25			75
AR	20	20		8		4	34	12	17	3			118
CA						1							1
CO								1					1
CT		21	20	2			16	18	6	2			85
DC	4	4					3						11
FL	13	22	14	13			24	19	8			41	154
GA			11	8								7	26
HI								14				4	18
ID		9					10			10		8	37
IL			1				7	2					10
IN		43	46				56					48	193
IA							4						4
KS	9	10	14	5			3	25	2			8	76
KY			1				19						20
LA								1					1
ME			3	1			8			2		4	18
MD											6		6
MA		15	4	5			14	3	31	1		12	85
MI		50		13		19	2	29	22	12		53	200
MS			2	3		3							8
MO			13				28	26				22	89
MT			5				6			1		8	20
NE		3	4	13			15	10				20	65
NH	6	5	7				6		8			6	38
NJ							12		13			134	159

Individuals Trained - By Module (Continued)

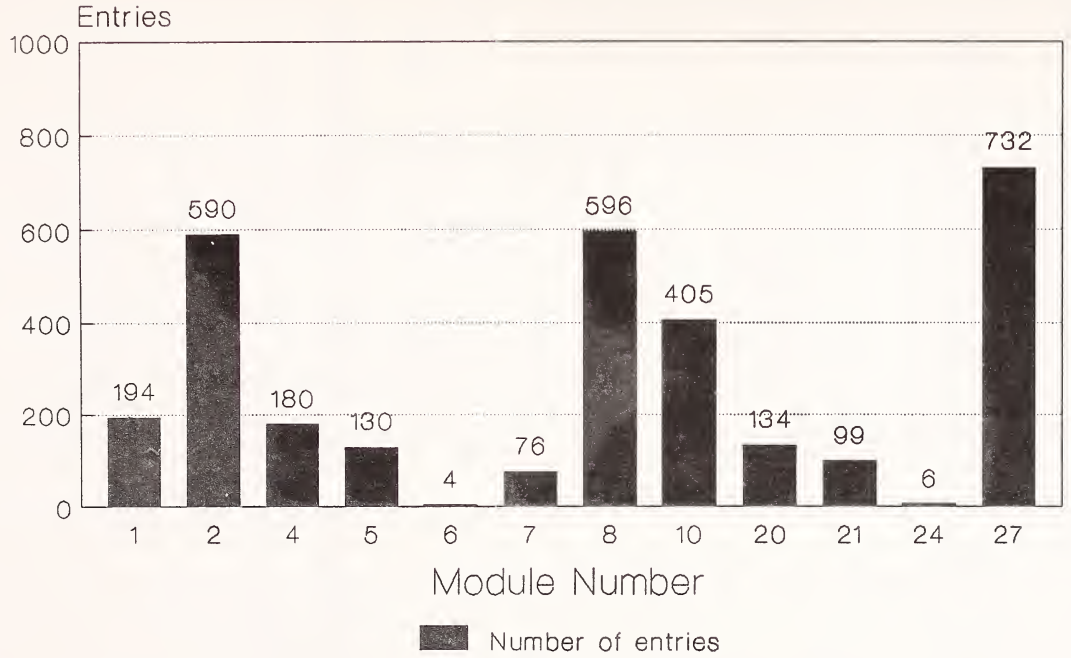
State	Module 1	2	4	5	6	7	8	10	20	21	24	27	Totals
NM		12				13	13	25		2			65
NY		74						8		9			91
NC								19					19
ND							3					12	15
OH		40		13	4	4	42	14				58	175
OK			2					22				2	26
OR	18	17					12	16		16		16	95
P&S				1		14						3	18
PA	34	69					56	39		1		82	281
PR		32					33	15					80
RI		1		1					1				3
SC		25				2	28						55
SD			7	12			7	10				10	46
TN				6		6	32					5	49
TX										4			4
UT	16	15					12	13		1		16	73
VT	5		3				7	1				5	21
VA				9		1		38		4		41	93
WA	13	8					16			1		16	54
WV						3							3
WI	56	53		13			28		26	5		63	244
WY			11				16					3	30
Totals	194	590	180	130	4	76	596	405	134	99	6	732	3146

Growth of NTP Registry
(Annual and Cumulative Data)



Data as of 6/30/89

Entries in NTP Registry
By Module



Data as of 6/30/89

Continuing Education Units (CEUs) Awarded By the National Conference on Weights and Measures

(As of 6/30/89)

Module	CEUs*	No. of Partic.	1985 Total	1986 Total	1987 Total	1988 Total	1989 Totals	Grand Totals
1	3.1	194	-	306.9	77.5	117.8	99.2	601.4
2	3.1**	590	-	65.1	857.9	759.5	65.1	1747.6
4	3.1	180	-	-	-	502.2	55.8	613.8
5	3.1	130	-	-	96.1	133.3	173.6	403.0
6	3.1	4	-	-	12.4	-	-	12.4
7	3.1	76	-	-	12.4	-	223.2	235.6
8	2.8	596	-	288.4	856.8	260.4	263.2	1668.8
10	2.8	405	75.6	372.4	302.4	128.8	254.8	1134.0
20	2.8	134	-	-	156.8	109.2	109.2	375.2
21	3.5	99	-	-	105.0	129.5	112.0	346.5
24	1.5	6	-	-	-	-	9.0	9.0
27	1.1	732	155.1	402.6	165.0	66.0	16.5	805.2
Totals		3146	230.7	1435.4	2642.3	2206.7	1381.6	7953.2

*One CEU is equivalent to 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.

**One Module 2 class with 74 participants was given only 2.0 CEU's per participant.

APPENDIX C

"Training the Trainer"

A Videotape/Text Training Program
Produced By
Industrial Training Corporation

Each segment of the program comes with:

- Color Videotape (approx. 30 min.)
- Participant's Manuals
- Facilitator's Guide
- Overhead Transparencies

Segment Topics:

The Elements of Effective Training

Planning for Effective Training

Developing and Writing Training Objectives

Learning: How it Occurs

Instructing to Facilitate Learning

Methods for Teaching Skills

Methods for Teaching Information

Principles of Visual Training

Using Visual Aids Effectively

Measuring Instructional Effectiveness

Developing and Using Lesson Plans

On-the-Job-Training

Teaching Your First Class

Administering the Training Program

APPENDIX D

NCWM Award For Training Achievements*

Purpose: To recognize individuals or groups for outstanding achievements in implementing the NCWM National Training Program and enhancing the professional status of individuals in the W&M field. Examples of accomplishments that might be recognized include:

- Extensive restructuring of a State or industry training program to incorporate the teaching of NCWM modules,
- Special efforts made to train instructors to teach NCWM modules,
- Achievement of higher salaries for W&M officials through implementation of module training programs,
- Development of videotape programs to enhance module presentation,
- Construction of training facilities designed specifically to enhance the presentation of NCWM modules,
- Development of incentive programs to encourage participation in module training sessions,
- Presentation by a jurisdiction of module training programs for industry or service people.

The award would not be based on the number of modules presented or the number of individuals trained. It would recognize significant improvements and innovations in training based on NCWM training modules.

Type of Recognition: A certificate signed by the NCWM Chairman citing the specific accomplishment would be given to the winner. A detailed description of the award winner's accomplishments would be included in the Annual Report of the NCWM Committee on Education, Administration, and Consumer Affairs.

Frequency of Award: The award would be presented annually, if merited.

Eligibility: Any NCWM member or associate member would be eligible to receive the award.

Administrative Details: Nominations, along with supporting information, would be sent to the Education Committee prior to the NCWM Interim Meeting each year. Nominations could come from any group or individual (for example, an organization could nominate itself or it could be nominated by a regional W&M association). The Committee would review the nominations at the Interim Meeting and, if the award was merited, propose the names of up to two potential winners to the Executive Committee for approval. The winner or winners would be announced at the Annual Meeting in July.

*Changes made to the original proposal are underlined.

Final Report of the Committee on Liaison

Peggy H. Adams, Chairman
Chief Sealer, Bucks County
Pennsylvania Department of Consumer Protection

Reference Key No.

500 Introduction

This is the final report of The Committee on Liaison for the 74th Annual Meeting of the National Conference on Weights and Measures. This report results from the Interim Report (NCWM Publication 16), the Addendum Sheets issued at the meeting, and the actions taken by the membership at the meeting.

Reference Key Numbers, Item Titles, and Page Numbers are identified in Table A. Voting items are identified in **boldface print**, as well as by the suffix "V." Information items are identified by the suffix "I." Withdrawn items are identified by the suffix "W."

(This report was adopted in its entirety by a hand vote of the membership.)

Table A
Reference Key Items and Index

Table A (Continued)
Reference Key Items and Index

Details of all Items

501-1 I Federal Grain Inspection Service (FGIS)

Mr. James Decker, Industrial Specialist, Federal Grain Inspection Service (FGIS), U.S. Department of Agriculture, appeared for Mr. Richard R. Pforr, Chief, Weighing and Equipment Branch, Field Management Division, FGIS, and reported the following activities for 1988:

1. During the year, 13 master railroad track scales were tested by the two test cars operated by FGIS and approved by the State Weights and Measures jurisdictions in which they were located. The master scales at Chattanooga, Tennessee, and Martinsburg, West Virginia, were removed from service. The

Martinsburg scale will be reinstalled at Barboursville, West Virginia, in the latter part of 1989. The master scale in Chattanooga will be used for replacement parts. The master scale at Centralia, Illinois, is out of service at this time. This scale has not been tested since January, 1987, and FGIS recommends that it not be used to calibrate test cars.

2. Eighty-six scale tests were conducted on scales used for official weighing of grain. Fifteen plus one uncoupled-in-motion railroad-owned scales, and ten railroad track scales owned by other industries were tested while on approved itineraries. The schedule also included the field calibration of 25 monitor and test cars and the calibration of 29 railroad-owned test cars at the FGIS master scale depot in Clearing, Illinois.

3. Thirty-two 1,000-pound test weights, twenty 2,500-pound test weights, and four 10,000-pound test weights were tolerance-tested and adjusted at the request of local scale companies. In addition to normal building maintenance of the depot, the bridge and lever systems of the master scale were sand blasted and painted.

4. The master standards that are kept at the Clearing facility and used to calibrate the field standards in the test cars were returned to NIST for recertification. These standards are returned approximately every 5 years.

5. The program is currently operating at maximum capacity. Requests for service have been received but cannot be provided without additional test cars and personnel.

6. The weight reverification program using the electronic mass comparator is working very well. Problems are still being found with fabricated weights, but cast iron weights are repeating within tolerance.

501-2 I Aerosol Net Weight Labeling

The NCWM petitioned the Food and Drug Administration (FDA) to require labeling of aerosol packages by net weight only rather than by net volume. Mr. James Taylor of the U.S. Food and Drug Center for Food Safety and Applied Nutrition suggested that we consider changing the wording in our petition requesting changes in the regulation and interpretations pertaining to the quantity of contents declaration on aerosol packaged products. A new request is being drafted that will restrict the request to cover only aerosol packaged food and cosmetic products.

501-3 I Perishable Agricultural Commodities Act

Mr. Alan Rogers, Director, Weights and Measures, State of Virginia, appeared before the Committee to discuss a problem that arose when the Virginia Department of Agriculture, Marketing Section, wanted to test scales for use in the arbitration of disputes regarding labeled or contracted weights. The Virginia Weights and Measures personnel discovered that the Virginia Department of Agriculture, Marketing Section, operates under the U.S. Department of Agriculture (USDA)'s Perishable Agricultural Commodities Act. This Act allows individual containers to weigh as much as 4 percent less than the labeled or contracted weight.

The Committee has received a copy of the USDA's Perishable Agricultural Commodities Act (PACA) General Market Instructions. A preliminary review of the instructions reveals several potential conflicts with statistically valid accepted sampling procedures. The Committee will contact PACA administrators in an effort to reduce potential conflict between regulations and to clarify the role of weights and measures officials in net weight and device accuracy issues.

The Committee learned that an inspection is voluntary for the purpose of settling a dispute between the buyer and seller. A shipment approved under the voluntary inspection could still be short weight when checked by inspectors under Weights and Measures net weight regulations.

The Committee feels that this information should be given to any buyers and sellers involved in voluntary inspection under the Act.

501-4 I Credit Card Surcharge

The Liaison Committee continues to monitor legislation concerning the ban on surcharges for credit cards. The status of states that have passed this legislation has not changed. At present, 12 states ban surcharges and 19 states have legislation prohibiting surcharges at the gasoline pump.

501-5 I Federal Role in Net Content Compliance: USDA

USDA is processing a proposal for regulatory change in net weight. The draft proposal, developed with close NCWM cooperation and support, seeks to adopt NIST Handbooks 133 and 44 in order to provide mandatory procedures for Federal inspectors in net content compliance determinations. The adoption of these handbooks should enable the Federal, State, and local weights and measures officials to strengthen enforcement and compliance.

The USDA proposal comment period ended in May, 1989. Forty-five comments were received. Copies of these comments are available from USDA for any interested parties. Contact John McCutcheon at USDA, telephone number (202) 447-3697 for copies of the comments. The USDA will analyze the comments and act on the proposal as soon as possible. Action on the proposal could include adoption as proposed, adoption as amended in response to the comments, or withdrawal if indicated by the concerns expressed in the comments.

501-6 I Federal Agency Interaction: USPS, FDA, FTC

Mr. Theodore H. Yaffe, U.S. Postal Service (USPS), Program Manager, Postal Service Engineering Division, reported that the USPS is actively replacing scales that service customers and is adopting Handbook 44 for these new devices. They have ordered 30,000 units. Some of the old devices do not comply with Handbook 44. USPS feels that Handbook 44 may need to be amended to treat postal scales as a separate category of devices because they may be operated as weight classifiers. He discussed some of the unique specifications for postal devices, including the new self-service options being implemented in some areas.

Discussions will be held with Mr. James Taylor of the FDA concerning the agency guidelines for metric labeling. The rounding of digits and capital versus small letters used when stating milliliters are the two issues of concern. The recent signing of the Omnibus Trade and Competitiveness Act mandates metric in Federal Government procurement and makes this item very relevant.

Mr. Brett Smart, of the Federal Trade Commission (FTC), 11000 Wilshire Boulevard, Los Angeles, California 90024 (Phone (213) 209-7890) has requested Weights and Measures officials, as well as industry, to contact him with any Federal Fair Packaging and Labeling concerns.

501-7 I Labeling of Turkey with Gravy

At the July, 1988, Annual Meeting of the NCWM, the Conference voted to petition the USDA to require that poultry and meat products containing gravy or sauce packets be labeled with both total net weight for the entire product and the net weight of the gravy or sauce packet. The NCWM petition submitted to the USDA has been accepted as a comment on its net weight proposal discussed as Item 501-5. The USDA response to the petition will be included in the analysis of comments when it publishes its final action on the net weight proposal.

502 I Public Liaison

The Committee discussed the recommendations of the NCWM Task Force on Prevention of Fraud and decided to contact the national district attorneys' organization and other related consumer protection enforcement agencies, including the organization of attorneys general and national consumer agencies. The Committee chair will send a letter to initiate an exchange of information and ideas with these organizations that will facilitate the enforcement of weights and measures regulations.

The NCWM Task Force on Energy Allocation requested the Liaison Committee to contact the Public Utilities or Public Service Commissions, trade and other professional organizations and provide them with the final guidelines and report of the Task Force. The Committee discussed how this might be accomplished and is prepared to act when the Task Force recommendations are adopted by the Conference.

The Committee will work with the United States Metric Association (USMA), the American National Metric Council, and the U.S. Metric Office of the U.S. Department of Commerce to increase awareness by weights and measures officials of the 1988 amendment to the Metric Conversion Act. Mr. Louis Sokol, representing the United States Metric Association, and Mr. Ted Wright, representing the American National Metric Council, gave remarks and distributed metric literature. The National Metric Conference, sponsored by these organizations and the U.S. Department of Commence, will be held at the Sheraton Hotel in Arlington, VA on October 2-3, 1989.

The Department of Commerce (DOC) Metric Program Office's role in the metric transition was discussed. In keeping with the intent of the Metric Conversion Act of 1975, as amended by the 1988 Trade Act, the Commerce Metric Program focuses on creating a favorable environment for the change. The mission includes elements which:

> coordinate Federal metric transition to promote consistency in agency plans, policies, and practices. This is done through formal and comprehensive inter-agency committees;
>
> identify and help remove barriers that inhibit or block metric transition in Federal, State or local rules, standards and codes, or regulations;
>
> bring together representatives from public and private sectors to resolve problems and share information;
>
> help U.S. businesses to identify metric requirements in overseas markets;
>
> provide technical and general information about the metric system and its use to businesses, educators, the news media, and the general public; and
>
> assist the states and local governments in their efforts to facilitate the metric transition.

The DOC Metric Program Office asks the weights and measures community, and the NCWM in particular, to take an active role in supporting the metric transition process and make their offices and staff resources available to assist public and private sector organizations and individuals in their State.

The DOC Metric Program Office asks NCWM members to maintain close contact with other State agencies and with their Governors' representatives on the National Council on State Metrication (NCSM).

The DOC Metric Program Office invites the NCWM members to refer questions about Federal metric usage directly to the Federal agency involved, to its metric coordinator, or to the Metric Programs staff of the U.S. Department of Commerce, Technology Administration, as appropriate.

Copies of the letters sent to Federal agencies, a Brief History of the Measurement System Office of Metric Programs Fact Sheet, and the Metric Conversion Act of 1975 and the 1988 Amendment were distributed. The information and a handbook of Federal officials can be obtained from the Department of Commerce Metric Program Office, Washington, DC, telephone (202) 377-3036.

The Office of the NIST Associate Director for Industry and Standards requested that the Committee review the European Community Directives and Amendments of 1974-1988 mandating certain metric sizes for wine, beer, distilled spirits, juices, edible oils, vinegar and sparkling waters. The Committee contacted various industry trade associations: Bureau of Alcohol, Tobacco, and Firearms (BATF), DOC's Office of European Affairs, Department of Defense, and NCWM's Industry Committee on Packaging and Labeling.

The Committee recommends that the Executive Committee approve the formation of an educational forum concerning the European Community activities and how these activities can affect the interest of the NCWM and its industry members who import and export products.

Mr. Daryl Tonini reported to the Committee on the Scale Manufacturers Association. He discussed its method of organization, how its technical committee operates and formulates positions on NCWM issues.

Mr. Robert Ross expressed the American Petroleum Institute's interest in working with the Liaison Committee concerning its activities with the Conference.

502-1 I Coding System for Milk Processing Plants

Mr. Louis E. Straub, State of Maryland, appeared before the Committee with a milk carton that did not have the name and address of the manufacturer, packer, or distributor on the label, but did have the milk plant code according to a system recommended by the National Conference on Interstate Milk Statements.

Mr. Robert E. Garfield, Director, Technical Services, Milk Industry Foundation, stated that this label was not recommended by the Foundation and was in violation of the Code of Federal Regulations (21 CFR 101.5.). This section requires that the name, address, city, State, and zip code of the manufacturer, packer, or distributor be displayed on the label with certain exemptions for the street address part. The Committee feels that the CFR covers the situation and that Maryland should discuss the problem with the dairy.

503 I OIML Activities

Mr. Sam Chappell (NIST) described the OIML activities of interest to the NCWM. See the report of the Executive Committee for details.

504 I OWM Status Report

Mr. Albert Tholen, Chief, Office of Weights and Measures (OWM), reported on the status of the OWM in terms of staffing and program changes. See the Report of the Executive Committee for details.

505 I Railroad Freight Car Stenciled Tare Weights

Mr. John J. Robinson, Senior Assistant Vice President and Secretary, Association of American Railroads (AAR), reported the following to the Committee:

Due to improved business conditions, the number of freight cars out of service awaiting repairs or held on hand as surplus has been reduced. Almost 14,000 more freight cars were retired than were installed new during 1988. Thus, the overall size of the national freight car fleet continues to decrease.

In line with the positive economic situation, however, a substantial number of railroad cars were weighed and restenciled during 1988. A total of 72,496 nonexempt cars (e.g., not subject to the basic 60-month reweighing rule) or about 11 percent of the serviceable fleet of general service freight cars, were restenciled. In addition, 69,316 so-called "exempt" cars were reweighed, or about 7.7 percent of the serviceable specially equipped freight car fleet, including 29,736 covered hoppers. This increased restenciling activity of 20,826 cars is a 17 percent

increase over the prior year and represents a continuing effort on the part of the rail carriers to maintain the accuracy of stenciled tare weights.

The AAR's Mechanical Division has approved changes to Interchange Rule 70 (the Interchange Rules are rules made up by all the railroads and govern the interchange of railroad cars) that will provide for the gradual elimination of tare weights from the sides of the railroad cars. The revised tare weights will continue to be reported to the AAR UMLER (computerized equipment register) file, which is updated twice daily. This information is available via EDI (Electronic Data Interchange) for all shippers in need of the information.

In approximately one year, the AAR hopes to begin an 8-year phaseout of stenciled tare weights. The "Load Limit" data, which is the maximum permissible weight of lading that can be placed in any freight car, will continue to be stenciled on the side of each freight car.

Mr. John Robinson stated at the Committee hearing that there was considerable resistance from some of the major railroads and industries to the prospect of a phase-out of stenciled tare weights. Consequently, railroad cars will continue to have stenciled tare weights for the near future. Present regulations permit information to be stated in both U.S. Standard and Metric weights.

506 I The 75th Anniversary Meeting of the NCWM

The Committee has presented several suggestions to the Executive Committee that focus on the 75th Annual Meeting of the NCWM. In 1904, an invitation was sent to the governor of each State by the director of the National Bureau of Standards requesting a representative from each State to attend a meeting. The proposal was to effect a "close cooperation" between the State weights and measures inspectors and the National Bureau of Standards. The first conference was held in Washington, D.C., January 16 and 17, 1905. This was the first National Conference on Weights and Measures.

Because of the special significance of the 75th Annual Meeting and the Conference's relationship with the National Institute of Standards and Technology (formerly the National Bureau of Standards), Washington, D.C., has been selected as the site of the 1990 meeting.

507 I Liaison with Regional Associations

The Committee heard a report on the activities of each regional organization from Mr. Richard Smith, Regional Association Coordinator, OWM. He reported that the regionals now deal more with national issues and more industry representatives attend the regional meetings. This has been a positive influence on how the regional organizations have reacted to issues.

The Committee recommends that the computer users group at the Western Regional meeting serve as a pilot to demonstrate computer programs available to various interested groups (i.e., metrologists, administrators, etc.).

Meeting dates for the regional meetings have been posted on the WAMIS bulletin board; the names and addresses of the regional chairs and regional secretaries were recommended as contacts.

Briefings on the upcoming regional association meetings were received by all the regional associations.

508 W Promotion of National Training Program (NTP)

The Committee is withdrawing this item. The recommendations printed in the Report of the 73rd National Conference represent the conclusions of the Committee on this item.

509 I Weights and Measures Week

The Weights and Measures Week Guide and All Year Public Relations, NCWM Publication #7, has been published and mailed to all conference members.

The 1989 Weights and Measures Week theme, logo, press release, radio public service announcement, editorial, and other resources were mailed to all State, county, and city jurisdictions. The theme was "National Uniformity Benefits Everyone." Weights and Measures officials are requested to send all press releases, ideas, unusual slides, brochures, and metric information for exhibit at the Annual Meeting and future Weights and Measures Week mailings to Ms. Peggy Adams, Bucks County Consumer Protection, Weights and Measures, 50 N. Main Street, Doylestown, Pennsylvania 18901, Phone: (215) 348-7442.

510 I Weights and Measures Legal Cases

Discussions were held regarding the format for data on legal cases to be compiled and submitted for placement on the computer, to be most beneficial to interested parties.

It was noted that New York City has been putting its legal cases on computer and may, therefore, be of assistance.

The Committee will contact Mr. Gerry Hanson of San Bernadino, California, and Mr. Chip Kloos of Beatrice Foods regarding their efforts to generate a data base covering the western regional areas. Los Angeles County Weights and Measures will also be contacted for information on their data base.

511 I Computer Information Systems

The Committee reviewed the operation of the NCWM "WAMIS" electronic bulletin board and endorsed its continued use and operation.

The need for computer information users groups at the regional meetings was again affirmed. The Committee recommends that the users group at the Western Regional Conference be used as a pilot for the establishment of an effective users group. Specific programs developed by weights and measures organizations will be demonstrated to the concerned groups (i.e., metrologists, administrators, device testing, etc.)

512 W Adoption and Use of NCWM Publications

The Committee is dropping this item because the Executive Committee is conducting a survey concerning Handbook 44 and the NTEP program and the L & R Committee conducts surveys on Handbooks 130 and 133 on a regular basis. The Committee will continue to consider ways to help with the adoption and use of NCWM publications.

513 I Bark Mulch Industry Coordination

Mr. Robert LaGasse, Executive Director of the National Bark and Soil Producers Association (NBSPA), appeared before the Committee with a request for more uniform testing and enforcement on bark product packages. Due to the rigorous handling of these packages during shipping and storage, he requested that inspection of the product be done at the packing sites.

After extensive discussion covering the packing, handling, shipping and storage of this product, the Committee agreed that it changes in nature during distribution. A check of the actual volume packed is most accurate when done at the packing site according to Mr. LaGasse.

The Committee urges the cooperation of all States that have bark producers to inspect the packages at the packing sites when feasible, but not to avoid testing this product wherever it is found. See Item 2 of the L & R Committee report.

514 I Liaison with other NCWM Organizations Including the Retiree Group and the Associate Membership Committee

The Associate Membership Committee was asked to continue promoting Weights and Measures Week through various types of advertisements. It was suggested that the Weights and Measures Week guide be provided to industry members as well as the regulatory members. It was pointed out that many industry members do promote NCWM during industry association meetings.

Mr. Ray Wells and Mr. Sydney Andrews reported on the Retiree Group. The Western and Southern Regional Conferences have very active groups, the Central has a new chairman working to organize their group, and the Northeast has given verbal support for a retiree group. Comments were made that they were very appreciative of having the Conference waive the registration fees, but would generally be willing to pay a share of the social activity fees. They are all willing to do what they can to help the Conference, but look to the meetings as more of a social function to see old friends, etc. They are also concerned as to how effectively they can provide good training on the modules. They suggest that efforts need to be concentrated on increasing the attendance of local field inspectors at national and regional conference meetings.

515 I Safety of Weights and Measures Officials

The Committee heard from Mr. Charles Gardner, Director of Weights and Measures for Suffolk County, New York, on the results of the safety survey conducted by him and the Northeastern Weights and Measures Association. The Committee feels there is a critical need for information that would assist State and local weights and measures officials in providing training and equipment in this area. The Committee recommends the establishment of an NCWM Task Force to provide for the development of appropriate training and educational materials and programs.

P. Adams, Bucks County, PA, Chairman

J. Akey, Kansas
R. Davis, James River Corp.
K. Thuner, San Diego County, CA
J. McCutcheon, USDA

K. Newell, NIST, Technical Advisor

Committee on Liaison

Annual Committee Reports

Report of the Resolutions Committee

Stephen H. Meloy, Chairman
Chief, Bureau of Weights & Measures
State of Montana

Reference
Key No.

700 General

The resolutions committee wishes to express the appreciation of the members of the National Conference on Weights and Measures to those who contributed their time and talents toward the arrangements for, the conduct of, and the success of this 74th annual meeting. Special votes of thanks are extended:

(1) to Honorable Charles E. Royer, Mayor, Seattle, Washington for his gracious welcome to Seattle and his words complimenting the weights and measures community for its exemplary service to the country;

(2) to Raymond Kammer, Acting Director, National Institute of Standards and Technology (NIST), for his attendance at the Annual Meeting, carrying on the NIST tradition of addressing the membership, for his words of encouragement regarding confirmation of the NIST/NCWM partnership; for his highlighting of mutual achievements, notably the National Type Evaluation Program (NTEP), and the National Training Program (NTP) and for his advice for progress in the future;

(3) to Richard N. Smith for his tireless efforts over the past 35 years of dedicated service to NCWM, its goals and objectives, to his continued expertise and dedication to the training efforts of this body;

(4) to officers and appointed officials of the National Conference on Weights and Measures for their assistance and service toward progress on national issues;

(5) to committee members for their efforts throughout the past year preparing and presenting their reports, to the subcommittees and task forces for their discerning and appropriate recommendations;

(6) to governing officials of state and local jurisdictions for the advice, interest, and support of weights and measures administration in the United States;

(7) to representatives of business and industry for their cooperation and assistance in committee and Conference work, to the associate membership organization for its hosting functions;

(8) to the staff of the Westin Hotel for their assistance and courtesies, which contributed to the enjoyment and comfort of the delegates in their fine facilities;

(9) to the National Institute of Standards and Technology and the Office of Weights and Measures for their outstanding assistance in planning and conducting the work and program of the National Conference on Weights and Measures;

(10) to the Office of Weights and Measures staff: Ann Heffernan-Turner and Terry Grimes, for their expert and hospitable operation of the administrative operations of the meeting;

(11) to the Washington Weights and Measures Division, Department of Agriculture for their essential support to the Conference, its committees, and our guests throughout the meeting week; and for their assistance in providing necessary equipment for the metrology workshops, and;

(12) to the City of Seattle, Weights and Measures Staff for their tireless support to the Conference, both in preparation for and during the conference meeting week.

S. Meloy, Montana, Chairman

O.R. Elliott, Oklahoma
M. Gray, Florida
D. Ely, Pennsylvania
S. McFarlane, Washington
S. McGuire, Illinois
T. DeCheco, Ohio

R. Smith, NIST, Technical Advisor

Report of the Nominating Committee

Darrell A. Guensler, Chairman
State of California

Reference
Key No.

800

the Nominating Committee met during the Interim Meeting at the National Institute of Standards and Technology, Gaithersburg, Maryland, and nominated the listed persons to be officers of the Conference. In the selection of nominees from active membership, consideration was given to professional experience, qualifications of individuals, Conference attendance and participation, regional representation, and other factors considered to be important.

CHAIRMAN-ELECT:	N. David Smith, North Carolina
VICE-CHAIRMEN:	Ross Anderson, New York Lester Barrows, Missouri Carol Fulmer, South Carolina Aves Thompson, Alaska
EXECUTIVE COMMITTEE:	Lacy DeGrange, Maryland Kendrick Simila, Oregon
TREASURER:	Charles Gardner, Jr., Suffolk County, NY

Darrell Guensler, CA, Chairman

Peggy Adams, Bucks County,PA
Barbara Bloch, CA
Fred Clem, Columbus, OH
Sam Hindsman, AR
Eugene Keeley, DE
Thomas Kelly, NJ

Nominating Committee

(On motion of Mr. Guensler, the Nominating Committee Report, Key Item 800, was adopted by the Conference)

Report of the Auditing Committee

Gerald Hanson
Director of Weights and Measures, San Bernardino County, CA

Reference
Key No.

900

The Auditing Committee met on Tuesday afternoon, July 18, 1989, for the purpose of reviewing the financial reports of the Conference Treasurer, Charles A. Gardner, Jr. The Committee finds these records to be in accordance with Conference procedure and correct.

G. Hanson, San Bernardino, CA, Chairman

S. Casto, WV
E. Murphy, Philadelphia, PA

R. Smith, NIST Technical Advisor

Auditing Committee

(On motion of Mr. Hanson, the Report of the Auditing Committee, Reference Key Item 900, was adopted by the Conference.)

Treasurer's Report
Fiscal Year 73 (1988-1989)
National Conference on Weights and Measures

(BUDGET)				
CASH				$76,045.31
	RECEIPTS:			
($30,000)	1.1 Registrations	28,265.00		
(45,500)	1.2 Memberships	73,650.00		
(6,500)	1.3 Training Modules	3,804.57		
(2,000)	1.4 Interest	4,505.55		
(1,000)	1.5 Promotional	361.00		
(5,000)	1.6 Special Events	7,696.50		
(200)	1.9 Miscellaneous	25.00		
(90,200)	TOTAL RECEIPTS			118,307.62
	TOTAL INCOME			194,352.93
	DISBURSEMENTS:			
(12,000)	2.0 Annual Meeting		13,626.77	
(4,000)	3.0 Interim Meeting		2,672.24	
(17,000)	4.0 Committee Operations		24,343.55	
(14,000)	5.0 Special Programs		14,632.51	
(6,000)	6.0 Chairman's Expense		13,851.72	
(6,000)	7.0 Membership Expense		9,321.08	
(4,000)	8.0 Printing & Publications		5,345.20	
(7,000)	9.0 Administration		4,555.29	
(5,000)	10.0 Special Events		9,793.00	
(1,200)	11.0 Promotions		1,151.29	
(14,000)	12.0 Training Modules		4,117.58	
(90,200)	TOTAL DISBURSEMENTS			103,410.23
	BALANCE			90,942.70
	BANKS			
	European American (New York)		57,940.19	
	Signet (Maryland)		314.24	
	Certificate of Deposit #1		22,451.12	
	Certificate of Deposit #2		10,237.15	
	BALANCE			90,942.70

Date Submitted: 7/20/89 Charles A. Gardner
Charles A. Gardner, Treasurer

Date Audited: 7/15/89 Gerald W. Hanson
Auditing Committee Chairman

Staff Advisor

July 20, 1989

FY 73 (1988 - 1989)
NATIONAL CONFERENCE ON WEIGHTS AND MEASURES
LISTING OF ACCOUNTS

INCOME			
1.1	Registration Fees		$28,265.00
1.2	Membership Fees		73,650.00
1.3	Training Modules and Field Manuals		3,804.57
1.4	Interest		4,505.55
1.5	Promotional Items		361.00
1.6	Special Events		7,696.50
1.9	Miscellaneous		25.00
		TOTAL RECEIPTS	118,307.62
		TOTAL INCOME	194,352.93
EXPENSES			
2.0	Annual Meeting		
	2.1 Hotel/Food Services	$11,284.89	
	2.3 Personnel	417.00	
	2.4 Printing	170.18	
	2.5 Photos	83.74	
	2.6 Flowers	178.18	
	2.7 150TH Favors	322.15	
	2.8 Travel	200.00	
	2.9 Miscellaneous	970.63	13,626.77
3.0	Interim Meeting	2,672.24	2,672.24
4.0	Committee Operations		
	4.1 Executive	7,405.59	
	4.2 Laws and Regulations	3,361.30	
	4.3 Specifications and Tolerances	4,753.34	
	4.4 Education	6,112.47	
	4.5 Liaison	2,100.60	
	4.6 Resolutions	298.00	
	4.7 Nominating	312.25	24,343.55
5.0	Special Programs		
	5.1 NTEP	8,074.42	
	5.3 TF on Commodity Requirements	716.79	
	5.7 TF on Energy Allocations	5,841.30	14,632.51
6.0	Chairman's Expenses		
	6.1 Chairman	8,230.35	
	6.2 Chairman-Elect	5,621.37	13,851.72
7.0	Membership Programs		
	7.1 Computer Listings	290.84	
	7.2 Contract Work	6,674.40	
	7.3 Banners	1,062.09	
	7.4 Awards	1,293.75	9,321.08

8.0	Printing and Publications			
	8.1 Annual Meeting	3,494.40		
	8.3 Letterhead	90.00		
	8.4 Membership	1,053.35		
	8.5 Committees	444.95		
	8.7 W&M Week	262.50	5,345.20	
9.0	Administration			
	9.1 Equipment	788.48		
	9.3 Mailing	46.35		
	9.4 Supplies	604.32		
	9.5 Bank Charges	((27.50))		
	9.6 P.O. Box Rental	104.00		
	9.7 Modules	2,253.74		
	9.8 Treasurer's Bond	268.00		
	9.9 Miscellaneous	517.90	4,555.29	
10.0	Special Events	9,793.00	9,793.00	
11.0	Promotional Items	1,151.29	1,151.29	
12.0	Training Modules	4,117.58	4,117.58	
	TOTAL DISBURSEMENTS			$103,410.23

July 20, 1989

Treasurer's Report
Fiscal Year 73 (1988-1989)
National Conference on Weights and Measures

Grant Account

Grant #1 HA 4003

Start	11,258.64		
Deposits	14,882.00		
Interest	116.96		
Bank Charge		9.75	
Payments		23,258.96	
Close			2,988.89

Grant #2 8H 0869

Start	0		
Deposits	27,000.00		
Interest	106.64		
Bank Charge		6.00	
Payments		25,006.64	
Close			2,094.00

Final Balance $5,082.89

Date Submitted: 7/20/89 Charles A. Gardner
Charles A. Gardner, Treasurer

Date Audited: 7/18/89 Gerald W. Hanson
Gerald Hanson,
Auditing Committee Chairman

Richard N. Smith,
Staff Advisor

New Chairman's Message

Thursday, July 20, 1989

Fred A. Gerk
Director, Division of Standards & Consumer Services
State of New Mexico

I take this office with a lot of confidence:

1. The Conference Chaplain resigned,
2. The Parliamentarian resigned,
3. I only got two tickets for both my wife and myself at last night's industry reception and everyone else received three tickets each and, finally,
4. Oil companies cancelled my credit cards.

Actually, I am pleased to accept the honor and responsibility of the Chairmanship of the National Conference on Weights and Measures. I have had the opportunity of savoring and planning for this moment for the past 18 months. I have acquired considerable insight into the responsibility of this position during the past year while serving as Chairman-Elect.

Knowing what a Chairman-Elect did do, I know what a Chairman-Elect should do. I am extremely pleased with your selection of David Smith of North Carolina as your Chairman-Elect. David and I are personal friends, and David is as enthusiastic and pleased with the honor as I am. We have discussed our responsibilities and plan to serve the Conference accordingly. We have a lot to accomplish. David and I will work well together.

When you assume a position such as Chairman of the National Conference on Weights and Measures, you get lots of advice on what to do and what not to do. The only two things I am considering is my wife's advice, "keep your pants pulled up and don't talk with your mouth full," and Margaret Tholen's advice, "if all else fails - lower your standards."

I must advise you that I did not campaign for this office - thus I did not make any campaign promises. By law it takes 24 hours for an impeachment or recall proceeding to take place, so I have at least that long as Chairman.

First, I'll address the "housekeeping" chores:

1. Official footwear for the year will be western boots. At the request of my New England colleagues, socks are optional.

2. Chili is the official food of the NCWM's Interim Meeting next January in Phoenix.

I would not have accepted this position under any circumstances if I did not think I had the entire support of everyone in the Conference. Because of this, I have chosen as a theme for next year's Conference, "PROGRESS THROUGH CONSENSUS AMONG CONSUMERS, REGULATORS AND INDUSTRY."

I feel that as Chairman of the National Conference on Weights and Measures I have the overwhelming support of the staff of the Office of Weights and Measures, National Institute of Standards and Technology; the Gasoline Pump Manufacturers of America; the Scale Men's Association; Institute of Weights and Measures; the International Society of Weighing and Measuring; U. S. Department of Agriculture, Federal Grain Inspection Service; American Society of Testing and Materials, and on and on. With organizations like this and real people like this, how can I go wrong.

The one and only reason I took this position is to try to improve something I truly believe in - the NCWM! I plan to place emphasis on the following areas:

1. Implementing the National Training Program,

2. Developing an understanding of the New Scales Code and the implementation of NTEP,

3. Working with the NCWM committees and encouraging them to clean up their agendas and reducing the number of items on their agendas,

4. Getting a closer rapport with the regional associations in order to address their concerns, not only the concerns of new attendees at the meetings, but also those of the inspector's in the field who cannot attend the meetings.

   The Executive Committee has discussed and authorized the funding of attendance and participation of the Chairman-Elect at all of the regional conferences. In addition, the Chairman-Elect and I will be hosting a breakfast at each regional meeting in the form of a fact finding mission to try and ascertain the grassroots needs of all officials.

5. Last but not least, and probably the most important in the near term, is getting an NCWM representative on the NIST Visiting Committee. In conversations with Mr. Ray Kammer, I get the impression we are in the running, and I intend to pursue it until the appointment is made.

Not too many years ago, I was sitting where you are as a first-time attendee at the NCWM thinking, "this whole bunch doesn't know what the hell they are doing." The next thing I knew, they put me on a committee - and here I am - supporting the very thing I came here to oppose. Enough of that.

I am now going to announce my committee appointments for the 75th NCWM. I did not take this privilege lightly and probably made over 100 contacts in arriving at these appointments. Fortunately, the problem was too many qualified candidates and too few slots to fill as opposed to too many slots to fill with too few qualified candidates to chose from. I look forward to working with these individuals and all of you over the next year.

Education Committee	Charles H. Greene, New Mexico 5-year term
Laws and Regulations Committee	Barbara Bloch, California 5-year term
	Louis Straub, Maryland 2-year term
Specifications & Tolerances Committee	Jack Jeffries, Florida 5-year term
Liaison Committee	John McCutcheon, USDA 5-year term
Auditing Committee	Stephen Casto, West Virginia 5-year term
Credentials Committee	Joseph Silvestro, Gloucester County, New Jersey 3-year term
Resolutions Committee	Aves Thompson, Alaska 3-year term

	Cathryn Pittman, Tennessee 3-year term
Nominating Committee	Darrell Guensler, California Eugene Keeley, Delaware Charles Greene, New Mexico Thomas Kelly, New Jersey Fred Clem, City of Columbus, Ohio Lacy DeGrange, Maryland
Budget Review Committee	Raymond Wells, Sensitive Measurement, Inc. Darrell Guensler, California
Chaplain	Cordell Robinson, City of Columbus, Ohio
Assistant Treasurer	Gerald Hanson, San Bernardino County, California
Sergeants-at-Arms	Robert Gunja, City of Kansas City, Kansas Stanley Millay, Maine

Associate Membership Committee for 1989-1990

Chairman	William Braun, Procter & Gamble
Chairman-Elect	Max Casanova, Ramsey Engineering
Secretary	Chip Kloos, Beatrice/Hunt Wesson
Treasurer	Thomas Stabler, Toledo Scale

Members:
Dawn Brydon, Milk Industry Foundation/International Ice Cream Association
James Schnitzler, Accurate Metering Systems, Inc.
Richard Whipple, Gilbarco, Inc.
Raymond Wells, Sensitive Measurement, Inc.
Harvey Lodge, Dunbar Manufacturing, Inc.
J. Edward Thompson, Kraft, Inc.
Tom Topalis, Quaker Oats

In closing I would simply say - "Words are but tokens," I hope to serve you well.

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